

The National University of Kyiv-Mohyla Academy

English Language Department

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ENGLISH FOR NATURAL SCIENCES

Підручник

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Підручник “**English for Natural Sciences**” призначений для студентів вищих навчальних закладів природничих спеціальностей (біологія, екологія, хімія, фізика та астрономія). Він має на меті формування у студентів спеціалізованих мовних навичок та вмінь фахового спрямування. Підручник складається з шести розділів (Education, Work and Employment, Science and Technology, Globalization, Ethical Values, Nature and Ecology) відповідно до Програми курсу Англійська мова (за професійним спрямуванням) НаУКМА. Крім того, він містить розділ, присвячений розвитку усних та письмових навичок (Making Effective Presentations, Describing Information in Graphics, Writing Academic Essays). Розрахований для використання під час аудиторної та самостійної роботи студентів.

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EDUCATION

Lesson 1

Issues in education

Education is the development of the power of adaptation to an ever changing social environment.

Speaking and Vocabulary

1 Complete the opinions with the words in the box.

assessment curriculum dumbing down elitism interpersonal skills plagiarism streaming

1. 'The most important aspect of education is the _____, or subjects which are taught.'
2. 'Frequent examinations are a much more reliable and useful way of measuring performance than continuous _____.'
3. '_____ is an excellent idea because it enables students with a similar ability to work at the same pace.'
4. 'Education is not about developing your _____, but about learning facts.'
5. 'Private education creates _____ and encourages inequality in society, which is absolutely disgusting.'
6. 'Copying someone else's ideas, _____, cheating and buying qualifications is sometimes necessary.'
7. 'It's easier to get good grades nowadays because education is _____. Qualifications are worth less than in the past.'

2 Which opinions do you agree or disagree with? Work with a partner and discuss your ideas.

Reading

1 Read the text and interview your partner(s) :

1. What is the main role of education for you? (What are the most important functions of education for you?)
2. "You get what you pay for." Do you think this statement is true for the education in Ukraine?
3. What was missing from your education?
4. What are the key challenges of the online education at KMA for you?
5. What should the teachers of our University do to help you to adapt to the ever changing environment effectively and efficiently?

Functions of education

- Progressive development of innate powers
- All round development of personality
- Control, redirection and sublimation of instincts
- Character building and moral development
- Creation of good citizens
- Awakening of social feelings
- Preparation of culture and civilization
- Social reforms
- National security

The Functions of Education

Education is the most crucial aspect of society which should be given great attention for it to become the powerful tool to make every individual become the catalyst of change. Changes are rampant on the society, but all of those are needed to make the society progressive and functional. Society and every individual should work hand in hand so that no one would be set aside and become outdated knowing that we are now living in a highly modernized society. In order to achieve that, everyone should be aware on the functions of education in the society.

Social control and change

Society is said to be dynamic and progressive and not a station. Education helps every individual to develop their skills that are needed to control and change the society positively. Social environment is where the child's personality can be fully developed that is why it should be conducive enough for them to grow into a better person.

Reconstruction of individual's experiences

Education is life that is full of different experiences which would make every person become an agent of change that is essential for the society. This helps them to reconstruct all their experiences in life as well adjust with environmental changes.

Development of moral and social value

Moral and social values affect every individual in dealing with the society. Through proper education, they would be given the chance to acquire moral and social values which would help them become the reason for the society to achieve positive changes towards success.

Providing equality and opportunity

Discrimination should be lessen if every person would be given proper education which is needed for providing equality and opportunity. We cannot deny that educated people are more successful in life and have greater opportunities in life that is why every educational institution is providing good quality of education for people to become successful in their career.

Training ground for leadership

The quality of an individual in being a leader can be developed through education that they can be used in participating in the spheres of political, educational, social, and religious activities.

Inculcation of social and civic responsibility

Education is the best tool for the rising education to become aware and understand their duties and rights of having a democratic country where everyone is given the chance to express and be treated equally.

National Integration

People living in different countries are diverse that is why respect of language, color, physical environment habits, dress, and caste should be adhere.

Those are the functions of education in the society and the lives of people who are needed by the society to empower changes. Life is full of challenges and problems which make every individual neglect what their social responsibilities are. This is the main reason why the society is having a hard time to progress but this can be solved through the help of good quality of education to make people acquire the needed knowledge and develop their innate skills that can be used to be good citizens in their own ways.

Vocabulary

Complete the text with the verbs below to make verb+noun collocations. There is one verb you do not need to use.

achieve conducting demonstrate focused process study

Child prodigies are young people who 1)_____ intelligence at a very young age. Such children probably do not have secret study methods in order to 2)_____ intellectual skill, rather they probably have an innate ability to 3)_____ information. Kim Ung-yong, considered by many to be the smartest man alive today, could read in four languages by the age of four. So, he then 4)_____ his attention on mathematics. He gained his PhD in physics by the age of 15, and during this time also started 5)_____ research at NASA.

Lesson 2

Diversity of education

Speaking

1 Look at the statements below. Which opinions do you agree or disagree with? Discuss your ideas with a partner(s):

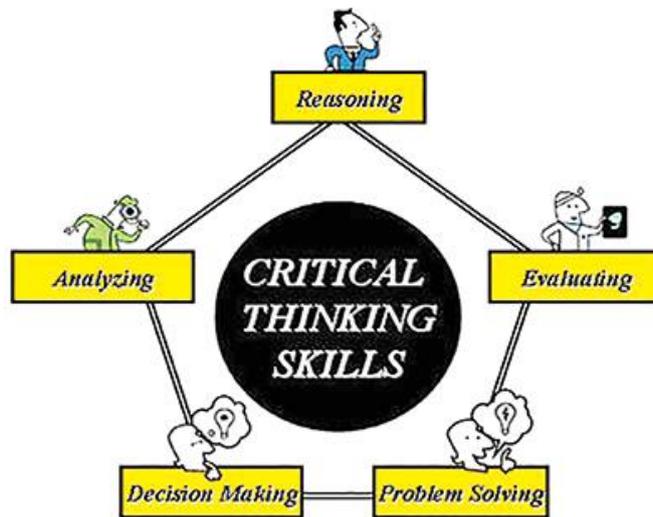
1. Education is not about developing interpersonal skills but about learning facts.
2. Frequent examinations are a much more reliable and useful way of measuring performance than continuous assessment.
3. Streaming is an excellent idea because it enables students with a similar ability to work at the same pace.
4. The most important aspect of education is curriculum, or subjects that are taught.
5. Private education creates elitism and encourages inequality in society.
6. Copying someone's ideas or cheating in exams (or buying qualifications) is sometimes necessary.
7. It is easier to get good grades nowadays because education is dumbing down. Qualifications are worth less than in the past.
8. What are the key challenges / problems that Ukrainian education faces?

Definition of overeducated

: having too much academic education, : more educated than is practical or useful.

2 Read [the information](#) about the most challenging exam. Then talk to your partner about the importance of the development of the critical thinking skills,

3 How to develop critical thinking skills? Look at the picture below and think about the suggestions you can give people who plan to upgrade their critical thinking skills.



6 critical questions

things to think about when someone has something to say

who

Who said it?

Someone you know? Someone famous?
Someone in authority?
Should it matter who said it?

what

What did they say?

Did they give facts or opinions?
Did they give all the facts?
Did they leave something out?

where

Where did they say it?

Was it in public or in private?
Did other people have a chance to talk about the other side?

when

When did they say it?

Before, after, or during an important event?

why

Why did they say it?

Did they explain their opinions?
Were they trying to make someone look good or bad?

how

How did they say it?

Were they happy, sad, angry, or didn't care? Did they write it or speak it?
Could you understand it?

Writing an Essay Academic Style (Formal Style)

The importance of structure

An academic paper has three distinct sections – the introduction, body and conclusion:

- **INTRODUCTION:** In the introduction, you must grab the reader’s attention and identify the thesis of the paper. You can do this by starting with:
 - Several questions
 - A quote from a famous work or person
 - Some interesting facts or information
 - A definition of an important term related to the work
- **BODY:** This is the main part of the work and the paragraphs must be clearly written and be arranged in a logical order, like chronologically or in order of importance. Each initial sentence links the preceding paragraph and the whole section flows smoothly.

Within each paragraph, the sentences need to flow and refer back to the topic. Cohesion is achieved by repeating important words, using synonyms for the main subject, and using transitional words like: however, such as, therefore, and for example.

- **CONCLUSION:** In the conclusion, you re-emphasize the thesis and summarize all the main points. The conclusion consists of one paragraph which shows the final conclusion to the reader.

Whether you are writing a research paper, a thesis, or a paper for a conference, these tips should help your paper be authoritative and coherent. Your thesis will be substantiated and explanations clear. Readers of your paper will follow your reasoning and understand your conclusion.

A few guidelines will help to define the two styles.

1. No Colloquialisms

This will include slang, idioms or other informal bits that frequently occur in spoken English. Bert was informal with his very first phrase: “I just wanted to let you know.” Dr. Funkleberg was “writing to inform” the professor. “Our place” is also incredibly informal, as is “hit on.” Later in the letter, Bert uses the old and worn-out idiom “our neck of the woods,” which is fine among friends but awful in formal writing. Emoticons and such are also never used in formal writing. 😊

2. No Imperatives

Imperatives are those little words and phrases that can sound bossy. Dr.

Funkleberg has great respect for the professor and would never tell him to “come by” or “phone.” Instead, he presents an invitation (and uses “please”).

3. No Contractions

In formal writing, contractions are not used. As opposed to “I’m” and “we’d be,” Dr. Funkleberg takes the extra time to type out “I am writing” and “we would be.” Cousin Bert uses “we’d,” “you’ll” and “it’s” to save some time.

Write everything out, including words like t.v.: television.

4. Avoid Short, Choppy Sentences

Formal writing should feel more respectful and more intellectual, and it should seem as if more time went into writing it. There should be a nice flow and organization of ideas instead of a blurt of information. Bert’s letter has an almost jarring feel.

5. Do Not Directly Address the Reader

Because the doctor is writing to a specific person, he is excused from this guideline, but formal writing with a broader audience should be in third person. Do not use pronouns such as “you” or “I.”

6. Mind Your Spelling/Punctuation/Grammar

Especially when writing resumés, these errors will immediately turn the reader off, and in other types of writing, the author’s authority on the subject might be questioned.

Now that you know how, here are some suggestions on when to use formal English.

1. Resumés and any sort of application
2. Business reports and anything professional or work-related
3. Advertising
4. Cold communication (writing to strangers)
5. Academic writing
6. Technical and scientific writing

When in doubt, always choose a more formal tone.

Common Mistakes to Avoid

Academic writers from every field face similar challenges during the writing process. You can improve your own academic writing by avoiding these common mistakes.

1. **Wordiness.** The goal of academic writing is to convey complex ideas in a clear, [concise](#) manner. Don’t muddy the meaning of your argument by using confusing language. If you find yourself writing a sentence over 25 words long, try to divide it into two or three separate sentences for improved readability.
2. **A vague or missing thesis statement.** The thesis statement is the single most important sentence in any academic paper. Your thesis statement must be clear, and each body paragraph needs to tie into that thesis.

3. **Informal language.** Academic writing is formal in tone and should not include slang, idioms, or conversational language.
4. **Description without analysis.** Do not simply repeat the ideas or arguments from your source materials. Rather, analyze those arguments and explain how they relate to your point.
5. **Not citing sources.** Keep track of your source materials throughout the research and writing process. Cite them consistently using one style manual ([MLA](#), APA, or Chicago Manual of Style, depending on the guidelines given to you at the outset of the project). Any ideas that are not your own need to be cited, whether they're paraphrased or quoted directly, to avoid plagiarism.

<u>INFORMAL</u>	<u>FORMAL</u>
They did an experiment	⇒ The experiment was carried out / performed
Then the Drive Manager goes through some steps to install the programme	⇒ The Drive Manager then performs / executes a series of functions / operations in order to install the programme
One after the other	⇒ At regular intervals
They found out what the important things were	⇒ They determined / discovered / established / identified the important properties / characteristics / issues
You can find out all about the survey on page 7	⇒ Details of the survey are to be found on page 7
We think you should discuss the research findings at the next departmental meeting	⇒ It is recommended that the research findings are discussed at the next departmental meeting
Doctors have come up with a new method of....	⇒ Doctors have created / established a new method of....
Safety officers are looking into the problem	⇒ Safety officers are investigating the problem
The cost of cleaning services has gone up 25% over the last three years	⇒ The cost of cleaning services has risen by 25% over the last three years

Writing

- 1 Look at the essay below and evaluate critically its structure, style and content.
The Biggest Challenge Modern Education Faces

There is no doubt, that one of the main factors, that decreases the quality of education in Ukraine is low professionalism of teachers. There may be plenty of causes of this problem, however, there are several the most influential.

The first reason is the low quality of pedagogical higher education. Even the most famous Ukrainian universities, that specialize in training teachers, are corrupted and administration feels free to make students participate in such absurd activities as going to church instead of going to lecture. This leads to a decrease in students' motivation, distrust of the university and, of course, there can not be appropriate training for future teachers.

The second reason for the low professionalism of teachers is a low salary. People work a lot for the really small money, obviously leads to frustration in the work. They have to take an extra job, such as tutoring, just to earn enough money to survive. They spend all their day working, and, as a result, they became exhausted and angry, and get unable to contribute to the learning process.

The last problem is a toxic working collective. Even if highly motivated and perfectly educated person decides to work in school, he or she will meet spiteful collective of frustrated people. The most likely outcome is sad: the principle of crab basket will work, and a large number of disappointed people will force the young teacher to doubt his ideals.

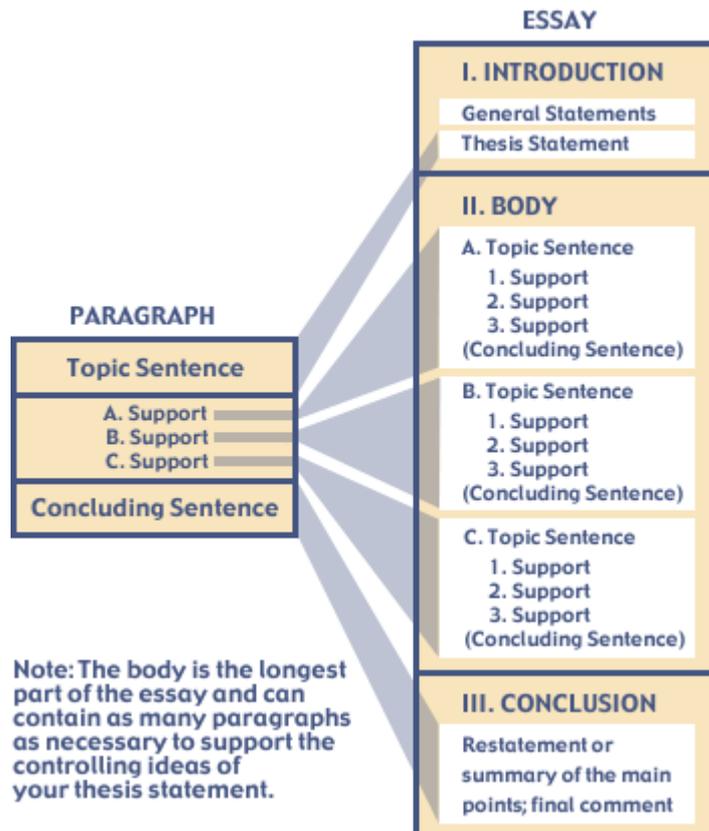
In conclusion, the main cause of low professionalism of teachers is the badly organized Ukrainian system of education which is manifested in low-quality teacher training, low salary and total absence of motivation.

Essay Writing Rules

Read the information about the key essay writing rules and compare with what you have spoken about in the previous task.

Essay Structure

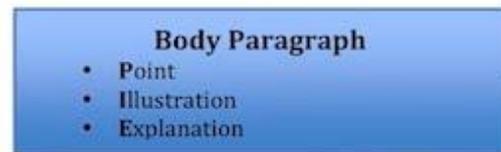
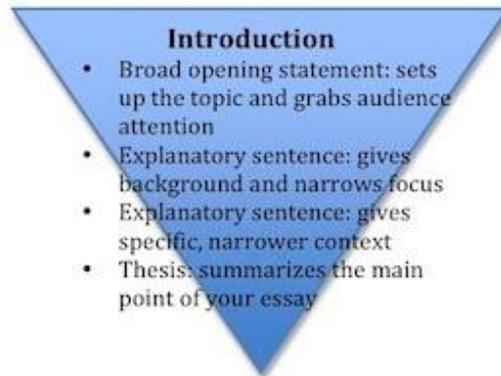
- Introduction – 10%
- Main body – 80%
- Conclusion – 10%



Broad

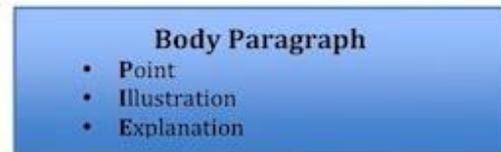


Narrow

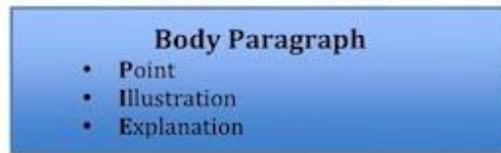


Remember that points need to directly support the thesis...

Don't forget **Transition Sentences** between Body Paragraphs! Help your reader get from one main point to the next.



...and so do the illustrations/examples.

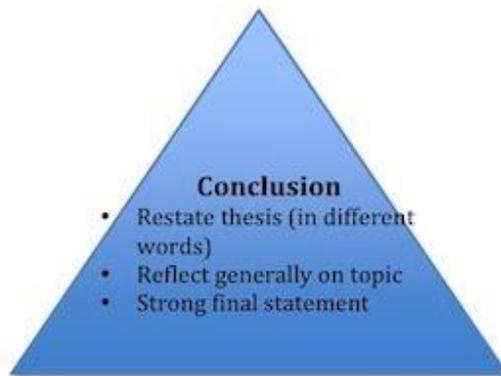


Be sure to explain **how** the illustrations/examples support the thesis. Don't assume it's obvious!

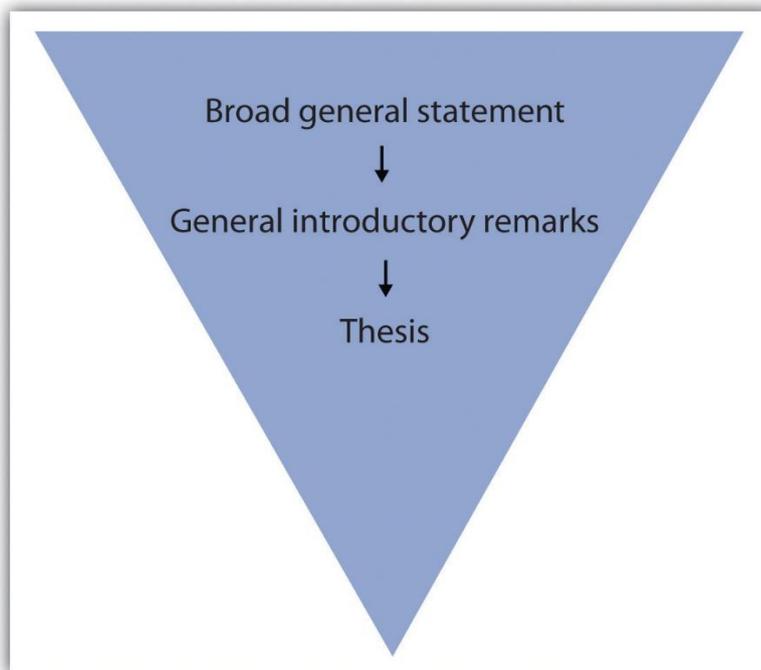
Narrow



Broad



Introduction Structure



- Broad general statement (what is known?) – define the general topic
- General introductory remark (what is unknown?) -narrow the topic to the essay topic
- Thesis is one sentence that expresses the main idea of a research paper or essay, such as an expository essay or argumentative essay. Usually the thesis is a rephrased title of the essay title.

Writing a thesis statement:

To write a good thesis statement we have to rephrase the title of the essay.

For example:

Problems KMA faces nowadays

There are many challenges/issues that characterize education process at Kyiv-Mohyla University.

Rephrasing Strategies:

- use synonyms (problems: challenges, troubles, issues...)
- change a word into a phrase (KMA: our university)
- change a phrase into a word (nowadays: at present)
- use derivatives (problems: problematic situation with...)
- change Active Voice into Passive Voice
- change Passive Voice into Active Voice

2 Look at the example of the introductory paragraph with a thesis statement and evaluate it critically in accordance with the essay writing rules.

Introductory paragraph:

Education is the most powerful weapon which is used to change people and to shape the modern societies. In the constantly changing world many new tasks and challenges of education are identified and classified on the regular basis. Our Alma Mater is not an exception as there are many challenges that characterize the learning process at Kyiv-Mohyla University. = THESIS

3 Write an introductory paragraph (80-90 words) for the Essay: “The Biggest Challenges Our Academy Faces”.

4 Exchange the introductory paragraphs with your group mates and evaluate critically their paragraphs.

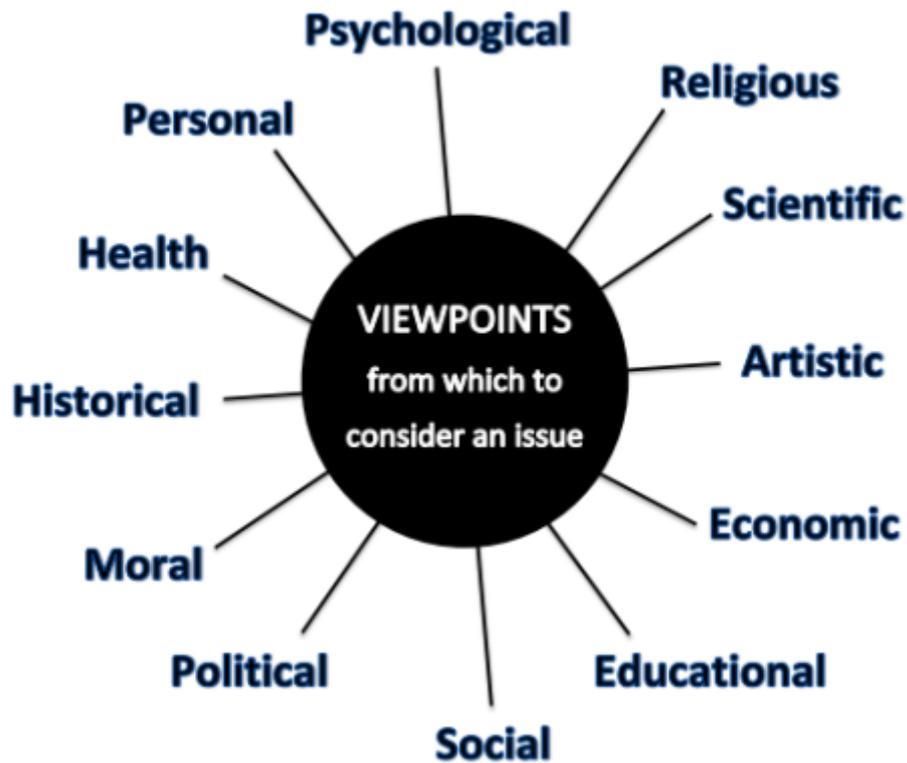
Lesson 3

Challenges modern education faces

Writing

1 Write an introductory paragraph for an essay: “Challenges Modern Education Faces”.

To brainstorm the ideas for your paragraph you can use the Discussion Clock approach.



2 Add linking words from the chart below to the introductory paragraphs you wrote.
Linking words = Transition words = Connectives=Linkers

Transition Words For Essays



Contrast	Persuasion	illustration
However Nevertheless Alternatively Despite this On the contrary Yet Whereas Apart from Even so Although In spite of While	Of course Clearly Evidently Surely Indeed Undoubtedly Decidedly Certainly For this reason Besides Again	For example Such as For instance Such as In other words An instance As revealed by To show that In the case of As an example For one thing
Cause & Effect	Comparison	Addition
Because Since For So Consequently Therefore Thus Hence Owing to As a result of Causes As a consequence of Leads to Contributes of	Of course Clearly Evidently Surely Indeed Undoubtedly Decidedly Certainly For this reason Besides Again	And Also In addition Further Furthermore Besides In addition to Moreover Additionally Not only ... but also Then Again Finally

www.englishgrammarhere.com

3 Choose one topic from the list below, write the Introductory Paragraph + 3 Topic Sentences.

Read (Don't mention the title of the essay) and we will try to guess the title.

Suggested Topics for the Essays

1. What makes students plagiarize?
2. Problems cheating/plagiarizing causes.
3. Problems higher education in Ukraine faces.
4. Problems secondary education in Ukraine faces.
5. Causes of problems in the system of education in Ukraine.
6. Causes of corruption in the Ukrainian system of education.
7. Causes of brain drain in Ukraine.
8. Effects of brain drain in Ukraine.
9. The advantages of home education.
10. The disadvantages of home education.
11. Factors that make people search for the alternative types of education.
12. The advantages of the alternative education.
13. The disadvantages of the alternative education.
14. Factors that make private education popular.
15. Causes of illiteracy in Ukraine.
16. The negative consequences of illiteracy.
17. The advantages of wider learner's autonomy.
18. The disadvantages of the wider learner's autonomy.
19. Causes of inflation of education.
20. Factors that turn educational system into the "dead valley".
21. Causes of the "drop out crises".
22. Factors that lead to the de-professionalization of teachers.
23. Consequences of the de-professionalization of teachers.
26. Causes of deflation of education.
27. Effects of deflation of education
28. Causes of gender inequality in education in Ukraine
29. Effects of gender inequality in education in Ukraine
30. Steps that could improve the system of higher education of Ukraine
31. What aspects of education make modern people "hackable"?
32. What aspects of education can help people to become "unhackable"?

4 Work in groups and discuss with your partners if the statements below are True or False:

1. Before starting writing an essay the author should brainstorm the useful ideas.
2. After brainstorming the ideas the author must think about their order in the essay.
3. The essay may not be divided into the paragraphs.
4. There are two main parts in the essay structure – the introduction and the conclusion.
5. The main body of the essay must be divided into the paragraphs.
6. The introduction of the essay must have a thesis statement at the end.

7. The thesis statement is the statement that presents author's opinion about the issue indicated in the title.
8. To sound more interesting and to draw readers' attention the author can ask questions.
9. The sound persuasive the author must express some personal opinion.
10. Every main body paragraph must begin with a topic sentence.
11. A topic sentence is a sentence that answers the question highlighted in the essay title.
12. Every topic sentence in the main body paragraph should be developed with the help of some examples, arguments etc.
13. The essay must have a logical conclusion (the one which deals with the ideas expressed in the main body).
14. The paragraphs in the main body part must be of approximately the same size.
15. The essay may be informal in style if the author is very interested in its topic and the issues it raises are extremely important.
16. To add formality the author may use different quotations.
17. Sometimes if the idea expressed in one of the essay paragraphs is clear and evident the paragraph can be made up of a single sentence.
18. To make an essay coherent and complete the author must use linking words.
19. 😊 After finishing writing the essay the author mustn't check the spelling, grammar, vocabulary, structure etc., as it is a teacher's task.

5 Choose one topic from the list below and write the 220 – 250 word essay.

Suggested Topics for the Essays

1. What makes students plagiarize?
2. Problems cheating/plagiarizing causes.
3. Problems higher education in Ukraine faces.
4. Problems secondary education in Ukraine faces.
5. Causes of problems in the system of education in Ukraine.
6. Causes of corruption in the Ukrainian system of education.
7. Causes of brain drain in Ukraine.
8. Effects of brain drain in Ukraine.
9. The advantages of home education.
10. The disadvantages of home education.
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30. Steps that could improve the system of higher education of Ukraine
31. What aspects of education make modern people “hackable”?
32. What aspects of education can help people to become “unhackable”?

Lesson 4

Evaluating the writing skills

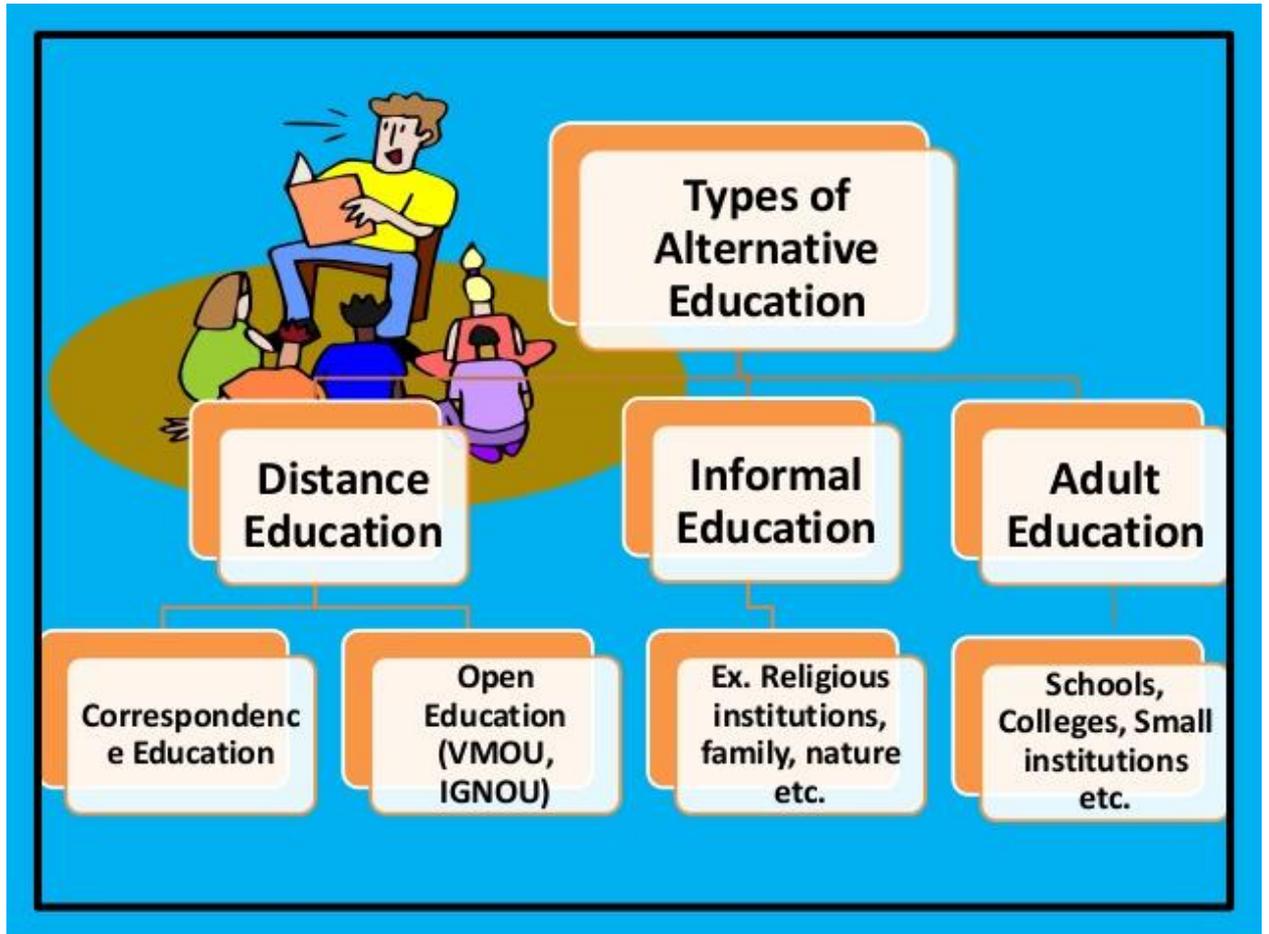
1 Collaborate in groups and evaluate critically the essays you have written (Content, Structure, Grammar, Vocabulary). Use the writing assessment criteria for IELTS exams below.

Band	Task achievement	Coherence and cohesion	Lexical resource	Grammatical range and accuracy
8	<ul style="list-style-type: none"> • sufficiently addresses all parts of the task • presents a well-developed response to the question with relevant, extended and supported ideas 	<ul style="list-style-type: none"> • sequences information and ideas logically • manages all aspects of cohesion well • uses paragraphing sufficiently and appropriately 	<ul style="list-style-type: none"> • uses a wide range of vocabulary fluently and flexibly to convey precise meanings • skilfully uses uncommon lexical items but there may be occasional inaccuracies in word choice and collocation • produces rare errors in spelling and/or word formation 	<ul style="list-style-type: none"> • uses a wide range of structures • the majority of sentences are error-free • makes only very occasional errors or inappropriacies
7	<ul style="list-style-type: none"> • addresses all parts of the task • presents a clear position throughout the response • presents, extends and supports main ideas, but there may be a tendency to overgeneralise and/or supporting ideas may lack focus 	<ul style="list-style-type: none"> • logically organises information and ideas; there is clear progression throughout • uses a range of cohesive devices appropriately although there may be some under-/over-use • presents a clear central topic within each paragraph 	<ul style="list-style-type: none"> • uses a sufficient range of vocabulary to allow some flexibility and precision • uses less common lexical items with some awareness of style and collocation • may produce occasional errors in word choice, spelling and/or word formation 	<ul style="list-style-type: none"> • uses a variety of complex structures • produces frequent error-free sentences • has good control of grammar and punctuation but may make a few errors
6	<ul style="list-style-type: none"> • addresses all parts of the task although some parts may be more fully covered than others • presents a relevant position although the conclusions may become unclear or repetitive • presents relevant main ideas but some may be inadequately developed/ unclear 	<ul style="list-style-type: none"> • arranges information and ideas coherently and there is a clear overall progression • uses cohesive devices effectively, but cohesion within and/or between sentences may be faulty or mechanical • may not always use referencing clearly or appropriately • uses paragraphing, but not always logically 	<ul style="list-style-type: none"> • uses an adequate range of vocabulary for the task • attempts to use less common vocabulary but with some inaccuracy • makes some errors in spelling and/or word formation, but they do not impede communication 	<ul style="list-style-type: none"> • uses a mix of simple and complex sentence forms • makes some errors in grammar and punctuation but they rarely reduce communication

2 Work in pairs and evaluate your writing skills

Writing Skills Checklist	Circle 1-9	Notes on progress
1. I always take time to plan my answer.	1 2 3 4 5 6 7 8 9	
2. I can easily rephrase the question in my introduction.	1 2 3 4 5 6 7 8 9	
3. I write at least 250 words for Task 2 essays and 150 words for Task 1 essays.	1 2 3 4 5 6 7 8 9	
4. I regularly use complex sentences.	1 2 3 4 5 6 7 8 9	
5. I use a wide range of vocabulary.	1 2 3 4 5 6 7 8 9	
6. I use appropriate linking phrases to connect my ideas.	1 2 3 4 5 6 7 8 9	
7. I answer the question that is being asked.	1 2 3 4 5 6 7 8 9	
8. I address all parts of the question.	1 2 3 4 5 6 7 8 9	
9. I can present my ideas in a logical and organized manner.	1 2 3 4 5 6 7 8 9	
10. I can appropriately use articles, prepositions, conjunctions, and verb tenses.	1 2 3 4 5 6 7 8 9	
11. I show precision in the word choice that I use. (i.e. I use the most accurate word for the meaning being portrayed)	1 2 3 4 5 6 7 8 9	
12. I can incorporate academic sounding examples into my Task 2 essay.	1 2 3 4 5 6 7 8 9	
13. I can clearly justify my position and point of view.	1 2 3 4 5 6 7 8 9	
15. I write a conclusion.	1 2 3 4 5 6 7 8 9	
16. I have time to check my writing for silly mistakes (i.e. spelling) after I've written it.	1 2 3 4 5 6 7 8 9	

Alternative education



Speaking

1 Collaborate with your partner(s) and discuss the questions below:

1. What did you like or dislike about your learning experience?
2. Do you agree / disagree that the most important thing in education (the environment that educational institution can provide you with) is:
 - A nurturing environment, a context where you are cared for and helped to grow;
 - Finding your own path, discovering what interests you in life;
 - Striving for excellence, and never settling for the second best;
 - Fostering good relations, that is helping people to get along in the positive way;
 - Fulfilling your potential and becoming as good as you are able to be;
 - A quality curriculum, educational content and high standard;
 - Taking the initiative and doing things first, not waiting to be told to do them;
 - Mutual respect, or the belief between people that the other is as worthy as oneself;
 - A focus on individuality, or not treating people as all the same, rather as unique;
 - Your suggestion?



In 1999, Sugata Mitra and his colleagues dug a hole in a wall bordering an urban slum in New Delhi, installed an Internet-connected PC and left it there, with a hidden camera filming the area. What they saw: kids from the slum playing with the computer and, in the process, learning how to use it -- then teaching each other. These famed “Hole in the Wall” experiments demonstrated that, in the absence of supervision and formal teaching, children can teach themselves and each other -- if they’re motivated by curiosity. Mitra, now a professor of educational technology at [Newcastle University](#), called it "minimally invasive education."

Mitra thinks self-organized learning will shape the future of education. At TED2013, he made a bold TED Prize wish: Help me build a [School in the Cloud](#) where children can explore and learn on their own -- and teach one another -- using resources from the worldwide cloud.

The School in the Cloud now includes seven physical locations -- five in India and two in the UK. At the same time, the [School in the Cloud online platform](#) lets students participate anywhere, with partner learning labs and programs in countries [like Colombia, Pakistan and Greece](#). In 2016, Mitra held the first School in the Cloud conference in India. He shared that more than 16,000 SOLE sessions had taken place so far, with kids all around the world dipping their toes in this new education model.

Listening

Listen to the [radio programme](#) and discuss the questions with your partner(s):

1. What was the experiment?
2. What are the elements of SOLE?
3. Where did the idea (of the Granny Cloud) come from?
4. What do children think about SOLE?
5. Would you like to be taught in such environment?
6. What can be the potential difficulties of the introduction of such idea in Ukraine?



Speaking

1 What are dos and don'ts of the educational program from the point of view of Sugata Mitra?

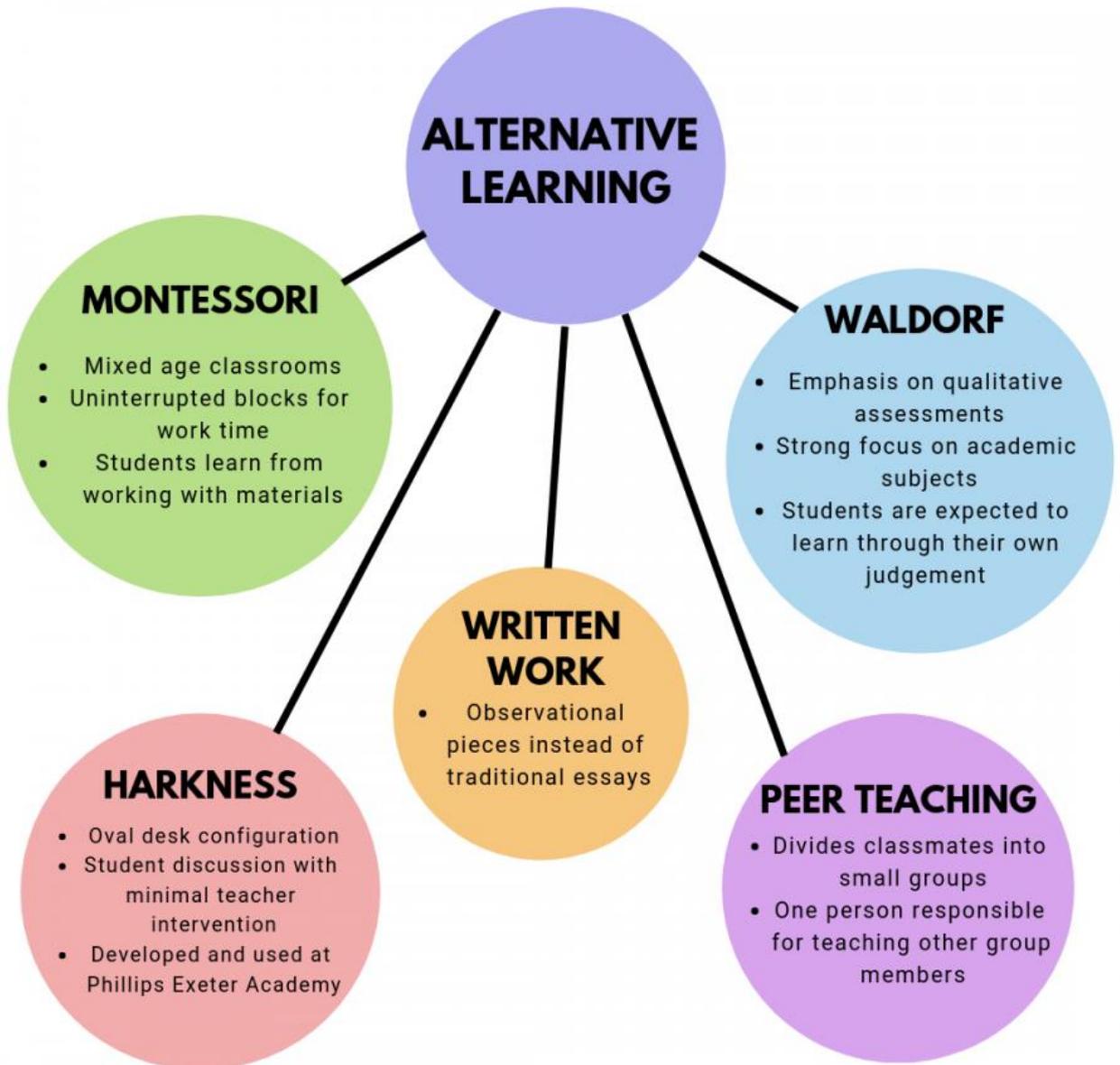
2 Work in groups and answer the question: "What could be the key features of the University of future / The Dream University?". List such points (you don't have to write the essay!!!)

Lesson 5

Dream university

Speaking

1 Look at the illustration below, work in groups and think of the key features that attract people to the concept of the alternative learning.



2 Collaborate with your partner(s) and answer the questions below:

1. What factors did you pay attention to while choosing the University (location, curriculum, ranking, its type (e.g. Liberal Arts University), tuition fee, extra-curriculum activities, reviews ...)?

2. What are the main advantages/disadvantages of your studying at KMA?
 3. What makes learners search for the alternative forms of education? Can you name any?
 4. Do you have any experience of the alternative education? What are your impressions about it? Would you recommend it to other people? Why?
 5. What are the educational / training options for the people in Ukraine?
 6. What could be the key features of the University of Future / The Dream University?
 7. Can your good education help to sustain the economic development of the country (and to move upwards in the Human Capital Index Ranking)?
- 3 Listen to the episode (Market Leader Advanced) and answer the questions:
 What are the benefits of apprenticeships for:
- 1) For the apprentice (it gives a young person a focus in life, apprentices also get a monthly allowance)).
 - 2) For the employer (apprentices become permanent employees who will show loyalty to a company because they have been trained by the company).
- 4 Listen again and mark the statements below as True or False:
1. About 60 % of school leavers go into apprenticeship programs/ become apprentices.
 2. The majority of apprentices like to work for well-known companies (BMW, Mercedes, Siemens).
 3. Apprenticeship programs in Germany usually last between 2 and 3 and a half years, and apprentices sign a contract / employment contract at the start.
 4. Apprentices tend to work 3 to 4 days and spend 1 or 2 days doing their vocational training.
 5. Apprenticeships are well established in Germany: there even exists a Training Act including various recognized skills for different kinds of professions.
 6. Germany is proud of the two expressions: “trained in Germany” and “made in Germany”.
 7. They have been in talks with the British government to set up a similar dual training system in the UK.

- The honor system (how to reduce cheating and plagiarism),
- Internship programs / placement / apprenticeship,
- Exchange programs,
- Its slogan.
- Your suggestions - ?

6 Listen to the Dream University Presentations, discuss in groups whose university you would like to enter and substantiate your choice.

Lesson 6

Gender Bias in Education

Reading

Gender discrimination is unequal or disadvantageous treatment of an individual or group of individuals based on gender.

Gender discrimination can be treating an individual differently based upon his/her gender in academia or extracurricular activities, academic programs, discipline, class assignments given in a classroom, class enrollment, physical education, grading, and/or athletics.

1 Read the article below, collaborate with your partner(s) and discuss the questions:

1. Have you ever been discriminated on the gender background in the educational institutions you attended/are attending? When did it happen? What happened?
2. What are the causes of gender discrimination in the educational institutions (social, economic, political...)?
3. What are the effects of gender discrimination in the educational institutions (social, economic, political...)?
4. Are Ukrainian educational institutions “gender-equal”? Substantiate your viewpoint.
5. Who is more discriminated (on gender background) in the Ukrainian educational institutions (males or females)? What does it (the amount of gender-based discrimination) depend on?

Gender Bias in Education

by Amanda Chapman of D'Youville College

(<http://www.edchange.org/multicultural/papers/genderbias.html>)

"Sitting in the same classroom, reading the same textbook, listening to the same teacher, boys and girls receive very different educations." (Sadker, 1994) In fact, upon entering school, girls perform equal to or better than boys

on nearly every measure of achievement, but by the time they graduate high school or college, they have fallen behind. (Sadker, 1994) However, discrepancies between the performance of girls and the performance of boys in elementary education leads some critics to argue that boys are being neglected within the education system:

Across the country, boys have never been in more trouble: They earn 70 percent of the D's and F's that teachers dole out. They make up two thirds of students labeled "learning disabled." They are the culprits in a whopping 9 of 10 alcohol and drug violations and the suspected perpetrators in 4 out of 5 crimes that end up in juvenile court. They account for 80 percent of high school dropouts and attention deficit disorder diagnoses. (Mulrine, 2001) This performance discrepancy is notable throughout Canada. In Ontario, Education Minister Janet Ecker said that the results of the standardized grade 3 and grade 6 testing in math and reading showed, "...persistent and glaring discrepancies in achievements and attitudes between boys and girls." (O'Neill, 2000) In British Columbia, standardized testing indicates that girls outperform boys at all levels of reading and writing and in Alberta testing shows that girls, "...significantly outperform boys on reading and writing tests, while almost matching them in math and science." (O'Neill, 2000) However, the American Association of University Women published a report in 1992 indicating that females receive less attention from teachers and the attention that female students do receive is often more negative than attention received by boys. (Bailey, 1992) In fact, examination of the socialization of gender within schools and evidence of a gender biased hidden curriculum demonstrates that girls are shortchanged in the classroom. Furthermore, there is significant research indicating steps that can be taken to minimize or eliminate the gender bias currently present in our education system.

The socialization of gender within our schools assures that girls are made aware that they are unequal to boys. Every time students are seated or lined up by gender, teachers are affirming that girls and boys should be treated differently. When an administrator ignores an act of sexual harassment, he or she is allowing the degradation of girls. When different behaviors are tolerated for boys than for girls because 'boys will be boys', schools are perpetuating the oppression of females. There is some evidence that girls are becoming more academically successful than boys, however examination of the classroom shows that girls and boys continue to be socialized in ways that work against gender equity.

Teachers socialize girls towards a feminine ideal. Girls are praised for being neat, quiet, and calm, whereas boys are encouraged to think independently, be active and speak up. Girls are socialized in schools to recognize popularity as being important, and learn that educational performance and ability are not as important. "Girls in grades six and seven rate being popular and well-liked as more important than being perceived as competent or independent. Boys, on the other hand, are more likely to rank independence and competence as more important." (Bailey, 1992)

This socialization of femininity begins much earlier than the middle grades. At very early ages, girls begin defining their femininities in relation to boys. One study of a third grade classroom examined four self-sorted groups of girls within the classroom: the nice girls, the girlies, the spice girls and the tomboys. Through interviews researcher Diane Reay found that 'nice girls' was considered a derogatory term indicating, "...an absence of toughness and attitude." (Reay, 2001) Furthermore, the girlies were a group of girls who focused their time on flirting with and writing love letters to boys, the tomboys were girls who played sports with the boys, and the spice girls espoused girl-power and played 'rate-the-boy' on the playground. Reay's research shows that each of the groups of girls defined their own femininities in relation to boys. (2001)

The Reay study further demonstrates how socialization of girls occurs at the school level by tolerating different behaviors from boys than from girls. Assertive behavior from girls is often seen as disruptive and may be viewed more negatively by adults. In Reay's study, the fact that the spice girls asserted themselves in ways contrary to traditional femininity caused them to be labeled by teachers as "real bitches". (2001) This reinforces the notion that "...girls' misbehavior to be looked upon as a character defect, whilst boys' misbehavior is viewed as a desire to assert themselves." (Reay, 2001)

A permissive attitude towards sexual harassment is another way in which schools reinforce the socialization of girls as inferior. "When schools ignore sexist, racist, homophobic, and violent interactions between students, they are giving tacit approval to such behaviors." (Bailey, 1992) Yet boys are taunted for throwing like a girl, or crying like a girl, which implies that being a girl is worse than being a boy. According to the American Association of University Women Report, "The clear message to both boys and girls is that girls are not worthy of respect and that appropriate behavior for boys includes exerting power over girls -- or over other, weaker boys." (Bailey, 1992)

Clearly the socialization of gender is reinforced at school, "Because classrooms are microcosms of society, mirroring its strengths and ills alike, it follows that the normal socialization patterns of young children that often lead to distorted perceptions of gender roles are reflected in the classrooms." (Marshall, 1997) Yet gender bias in education reaches beyond socialization patterns, bias is embedded in textbooks, lessons, and teacher interactions with students. This type of gender bias is part of the hidden curriculum of lessons taught implicitly to students through the every day functioning of their classroom.

In Myra and David Sadker's research, they noted four types of teacher responses to students: teacher praises, providing positive feedback for a response; teacher remediates, encouraging a student to correct or expand their answer; teacher criticizes, explicitly stating that the answer is incorrect; teacher accepts, acknowledging that a student has responded. The Sadkers found that boys were far more likely to receive praise or remediation from a teacher than were girls. The girls were most likely to receive an

acknowledgement response from their teacher. (Sadker, 1994) These findings are confirmed by a 1990 study by Good and Brophy that "...noted that teachers give boys greater opportunity to expand ideas and be animated than they do girls and that they reinforce boys more for general responses than they do for girls." (Marshall, 1997)

Beyond teacher responses, special services in education appear to be applied more liberally to boys than to girls. Research shows that boys are referred for testing for gifted programs twice as often as girls, which may be because, "...giftedness is seen as aberrant, and girls strive to conform." (Orenstein, 1994) Boys represent more than two-thirds of all students in special education programs and there is a higher the proportion of male students receiving diagnoses that are considered to be subjective. While medical reports indicate that learning disabilities occur in nearly equal numbers of in boys and girls, it may be the case that, "Rather than identifying learning problems, school personnel may be mislabeling behavioral problems. Girls who sit quietly are ignored; boys who act out are placed in special programs that may not meet their needs." (Bailey, 1992)

Gender bias is also taught implicitly through the resources chosen for classroom use. Using texts that omit contributions of women, that tokenize the experiences of women, or that stereotype gender roles, further compounds gender bias in schools' curriculum. While research shows that the use of gender-equitable materials allows students to have more gender-balanced knowledge, to develop more flexible attitudes towards gender roles, and to imitate role behaviors contained in the materials (Klein, 1985) schools continue to use gender-biased texts:

Researchers at a 1990 conference reported that even texts designed to fit within the current California guidelines on gender and race equity for textbook adoption showed subtle language bias, neglect of scholarship on women, omission of women as developers of history and initiators of events, and absence of women from accounts of technological developments. (Bailey, 1992)

Clearly the socialization of gender roles and the use of a gender-biased hidden curriculum lead to an inequitable education for boys and girls. What changes can be made to create a more equitable learning environment for all children? First, teachers need to be made aware of their gender-biased tendencies. Next, they need to be provided with strategies for altering the behavior. Finally, efforts need to be made to combat gender bias in educational materials.

A study by Kelly Jones, Cay Evans, Ronald Byrd, and Kathleen Campbell (2000) used analysis of videotaped lessons in order to introduce teachers to their own gender-biased behavior. Requiring in-service programs to address gender bias in the classroom will make teachers more aware of their own behaviors: "As a teacher, I was struck by the Sadkers' research on classroom exchanges and was forced to acknowledge the disproportionate

amount of time and energy, as well as the different sorts of attention, I give to male students." (McCormick, 1995)

Once teachers have recognized their gender-biased behaviors, they need to be provided with resources to help them change. In their study focusing on how the effects of a gender resource model would affect gender-biased teaching behaviors, Jones, Evans, Burns, and Campbell (2000) provided teachers with a self-directed module aimed at reducing gender bias in the classroom. The module contained research on gender equity in the classroom, specific activities to reduce stereotypical thinking in students, and self-evaluation worksheets for teachers. The findings from this study support the hypothesis that "...female students would move from a position of relative deficiency toward more equity in total interactions...." (Jones, 2000) This demonstrates that teachers who are made aware of their gender-biased teaching behaviors and then provided with strategies and resources to combat bias are better able to promote gender equity in their classrooms.

However, beyond changing their own teaching behaviors, teachers need to be aware of the gender bias imbedded in many educational materials and texts and need to take steps to combat this bias. Curriculum researchers have established six attributes that need to be considered when trying to establish a gender-equitable curriculum. Gender-fair materials need to acknowledge and affirm variation. They need to be inclusive, accurate, affirmative, representative, and integrated, weaving together the experiences, needs, and interests of both males and females. (Bailey, 1992) "We need to look at the stories we are telling our students and children. Far too many of our classroom examples, storybooks, and texts describe a world in which boys and men are bright, curious, brave, inventive, and powerful, but girls and women are silent, passive, and invisible." (McCormick, 1995) Furthermore, teachers can help students identify gender-bias in texts and facilitate critical discussions as to why that bias exists.

Gender bias in education is an insidious problem that causes very few people to stand up and take notice. The victims of this bias have been trained through years of schooling to be silent and passive, and are therefore unwilling to stand up and make noise about the unfair treatment they are receiving. "Over the course of years the uneven distribution of teacher time, energy, attention, and talent, with boys getting the lion's share, takes its toll on girls." (Sadker, 1994) Teachers are generally unaware of their own biased teaching behaviors because they are simply teaching how they were taught and the subtle gender inequities found in teaching materials are often overlooked. Girls and boys today are receiving separate and unequal educations due to the gender socialization that takes place in our schools and due to the sexist hidden curriculum students are faced with every day. Unless teachers are made aware of the gender-role socialization and the biased messages they are unintentionally imparting to students everyday, and until teachers are provided with the methods and resources necessary to eliminate gender-bias in their classrooms, girls will continue to receive an inequitable education.

Departments of education should be providing mandatory gender-equity resource modules to in-service teachers, and gender bias needs to be addressed with all pre-service teachers. Educators need to be made aware of the bias they are reinforcing in their students through socialization messages, inequitable division of special education services, sexist texts and materials, and unbalanced time and types of attention spent on boys and girls in the classroom. "Until educational sexism is eradicated, more than half our children will be shortchanged and their gifts lost to society."

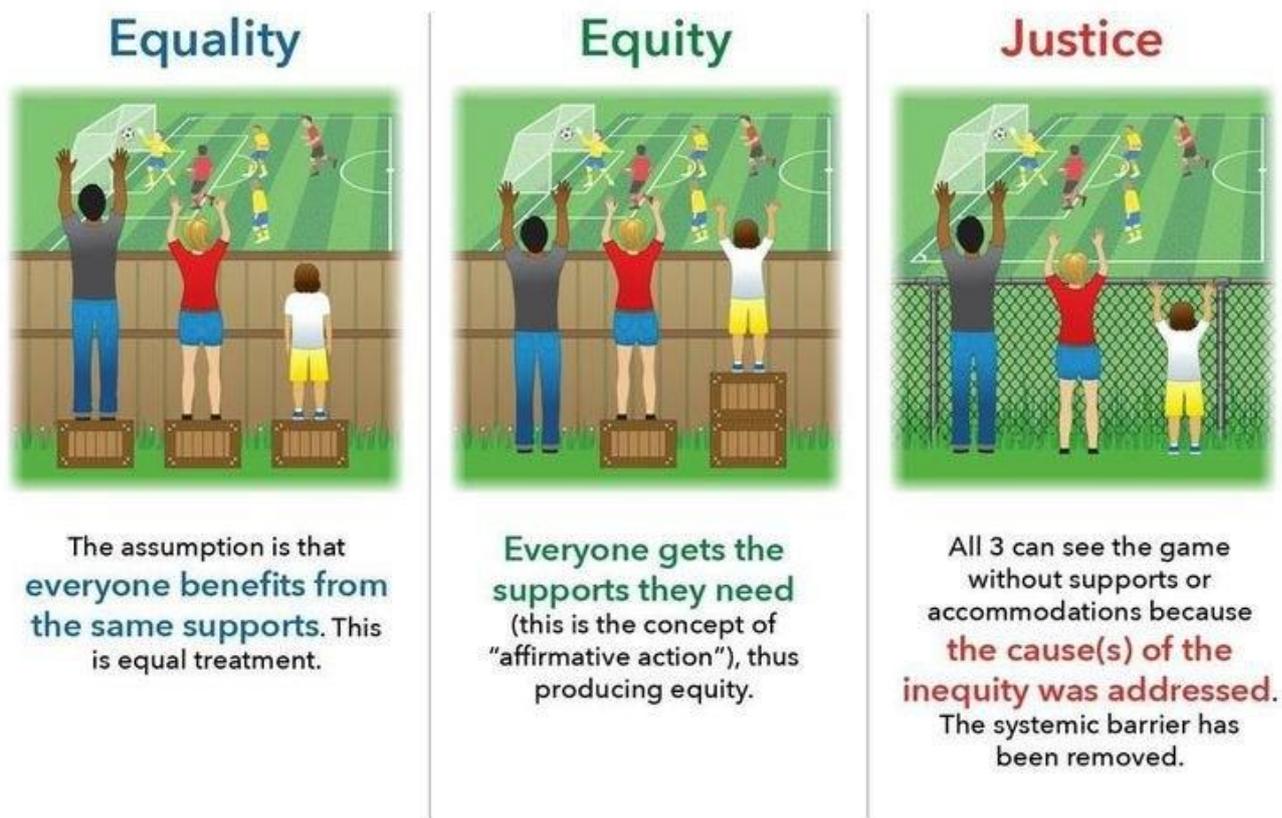
How to promote / sustain gender equality



Speaking

1 Discuss the questions below with your partner:

1. How do you envision gender equality?
2. Is gender equality achievable?
3. Can the single-sex school help to reduce the gender-based discrimination in the educational institutions?
4. What are the advantages / disadvantages of the coeducational schools?
5. Can the introduction of the gender neutral language (e.g. pronouns “ze”) help to promote gender equality?
6. Can filing the complaints (about gender discrimination) help to reduce the number of gender – based discrimination cases? - <https://www.langston.edu/title-ix/filing-complaint>



2 Equality vs Equity vs Justice

- Equality /ɪ'kwɒləti/ - the state of being equal, especially in having the same rights, status, and opportunities.
- Equity /'ekwəti/ - a fair and reasonable way of behaving towards people, so that everyone is treated in the same way.
- Justice - treatment of people that is fair and morally right.

3 Collaborate in groups and prepare a 1 minute speech (in accordance with the essay writing rules) to answer one of the questions below:

1. "What barriers prevent the creation / successful functioning of the "gender - just" learning environment in Ukraine?"
2. "What factors contribute the most to the presence of the gender biases in the Ukrainian system of education?"

Lesson 7

Thinking creatively

Reading

Read the passage and do the test tasks.

The science of imagination

Are creative people's brains different from other people's? Professor John Stein explains what creativity looks like from a neuroscientific perspective.

How do you quantify creativity? Is it different from intelligence? Among academics there is no agreement about what intelligence is, yet IQ measures of aptitude in memory, logic and comprehension seem to capture something useful about the brain's processing ability that is a good predictor of both academic and other types of achievement. The speed of this explains why different intelligence subtests, such as verbal and nonverbal reasoning, correlate with each other fairly well. Thus "g", the general intelligence factor believed by Charles Spearman in the 1920s to underlie all other intellectual attributes, is most likely explained by the speed and effective exchange of data between the front and back, and left and right hemispheres of an individual's brain.

The efficiency of this interchange, which is mediated by synchronising of the rhythms of the brain, is a product of both genetic and environmental aspects. Temporal processing seems to be even more heritable than intelligence itself but environmental factors play just as important a role in intelligence. For example, the specialised neurons which mediate the synchronising rhythms are especially vulnerable to dietary deficiencies, particularly during childhood. General improvement in diet is one explanation for the "Flynn effect": the increase in the average IQ in all developed countries by 30 points over the past century.

It is widely agreed that intelligence tests only capture verbal and spatial reasoning and other 'left-hemisphere' traits, such as linear and 'convergent' thinking. In order to include other attributes, such as emotional, holistic, lateral and imaginative thinking, generally deemed to be characteristic of right-hemisphere processing, Spearman used a factor "s". This assumed difference is, however, misleading as in reality both hemispheres work collectively in dealing with any one task. Whilst differing kinds of thinking do involve activity in diverging parts of the brain, they do not do so in the clearly compartmentalised way envisaged by early phrenologists. Even simple thought processes tend to involve several parts of the brain and the intricate nature of the systems involved in creative thought range widely over both hemispheres. Creative people are those who have the ability to think unexpected new thoughts and produce innovative concepts. They are highly likely to be the fortunate ones and to have both inherited and developed methods which enable their brains' two hemispheres to work optimally together.

Where highly creative people are concerned, four different stages in their pattern of work can be discerned. For which preparation, namely immersion in the problem, can take many years. Often, preparation involves deliberately instigating crazy ideas so as to provide the raw material for the mind to then work on. This is why creative people tend to be highly impulsive and possess a more easily activated right prefrontal cortex: the part of the brain involved in divergent open-ended thinking. Incubation, when a problem is deliberately set aside to allow for imaginings and ideas to interweave subconsciously, with luck will naturally lead to the third stage, whereby insight and illumination will burst forth in your mind with wonderful clarity. In the case of Mendeleev, sleep gave rise to his imagination, logically ordering all the chemical elements into what we now refer to as the periodic table. The fourth and final stage, that of recording ideas on paper, requires the left hemisphere's strengths. Mozart said "It rarely differs on paper from what it was in my imagination." Others are not so lucky: Einstein spent huge amounts of time attempting to capture in symbolic form the visuo-spatial intuitions that had come to him in a flash.

We can all profit from our perception of the creative process by consciously facilitating each of these stages: deliberately giving our imagination free rein, brainstorming, allowing lateral thinking by free association and then sleeping on the new ideas or changing task completely. It is surprising how often ideas will arrange themselves into coherent plans and how a flash of insight will make clear how to convey the information so others can understand it. A widely believed urban myth claims only 10% of our brain is generally in use and suggests that if we used more, we could all aspire to be a Leonardo da Vinci. However, Nature would not allow us to expend 20% of all the energy generated by the body on the brain (which is 2% of our body weight) if 90% of it is likely to be wasted. But this conjecture has a grain of truth: if we could learn - as we can through practice - to optimise the connections between the different parts of our brains to increase its efficiency, we can only speculate how much more creativity would be released.

Meanwhile, ensuring that our educational systems foster rather than stifle creativity is vital. Modern education quite properly stresses the importance of developing reasoning, verbal and literacy skills, which are of supreme importance in this technological age. However, the non-verbal, holistic, emotional right hemisphere is necessary if we are to generate any new concepts or innovative ideas, as will be required if we are to cope with the rapid pace of change in the 21st century. It has been found that creative people are quite often deficient in logical, literal left-brain skills, but superior in holistic, visuo-spatial right-brain ones. A disproportionate number of creative artists, engineers and architects fall into this category. The implication of this is that we must create space for arts, fantasy and imagination - our future may well depend on it.

1 Complete each sentence with the correct ending, A-G below.

- 1 A test which evaluates the ability to be rational
- 2 A typical indication of a high IQ

- 3 The proven link between better food intake and higher intelligence
- 4 Visualising the brain as a division into 'rational' and 'emotional' halves
- 5 The complexity involved in the creative process
- A can be obtained by trying to drive brain rhythms more directly.
- B is now recognized as an over-simplistic interpretation.
- C is the speed at which someone can handle information.
- D gives a good indication of how successful a person might be in the future.
- E involves different parts of the brain interacting together perfectly.
- F is the correlation between the logical and creative hemispheres of the brain.
- G demonstrates that genetic factors are not the only consideration.

2 Choose the correct option.

- 6 What does the writer say about the process experienced by creative people?
 - A. It is often the case that it leads to a form of mental illness.
 - B. The initial phase can be extremely time-consuming.
 - C. The most common way to find a solution to a problem is when asleep.
 - D. It is always a struggle to transfer ideas from the brain to the written word.
- 7 By studying how to become more creative we learn that it is important to
 - A. take risks with the way that you approach ideas.
 - B. take every opportunity to rest your mind
 - C. be organized and methodical in the way you work.
 - D. clarify your ideas by speaking to other people.
- 8 The writer says that the urban myth he refers to
 - A. is scientifically improbable.
 - B. is completely and utterly false.
 - C. provides him with daily encouragement.
 - D. explains why creativity is innate rather than acquired.
- 9 What point does the writer make in the last paragraph?
 - A. Schools fail to encourage the development of creativity.
 - B. Students whose right and left-brain thinking is imbalanced fail to achieve academic success.
 - C. Schools are exclusively focused on skills useful for technology.
 - D. It is essential for the modern age that creativity is nurtured at school.

Speaking

Choose one of the topics from the list below and prepare a 3 minute presentation in accordance with the Academic Writing Rules.

Topics for the Presentations

1. The advantages of the blended learning.
2. The disadvantages of blended learning.
3. The advantages of the Montessori approach.

4. The disadvantages of Montessori approaches.
5. The advantages of the Google Digital Garage (https://learndigital.withgoogle.com/digitalgarage/courses?category=digital_marketing)
6. The disadvantages of the Google Digital Garage (https://learndigital.withgoogle.com/digitalgarage/courses?category=digital_marketing)
7. Factors that make private education popular.
8. The advantages of wider learner's autonomy.
9. The disadvantages of the wider learner's autonomy.
10. Causes of inflation of education.
11. Factors that turn educational system into the "dead valley".
12. Causes of the "drop out crises".
13. Factors that lead to the de-professionalization of teachers.
14. Consequences of the de-professionalization of teachers.
15. Causes of deflation of education.
16. Effects of deflation of education.
17. Causes of gender inequality in education in Ukraine.
18. Effects of gender inequality in education in Ukraine.
19. What aspects of education make modern people "hackable"?
20. What aspects of education can help people to become "unhackable"?
21. The causes of the entitlement trap in education.
22. The effects of the entitlement trap in education.
23. Key elements of the nurturing environment in the dream educational institution.

WORK AND EMPLOYMENT

Lesson 1

The world of work

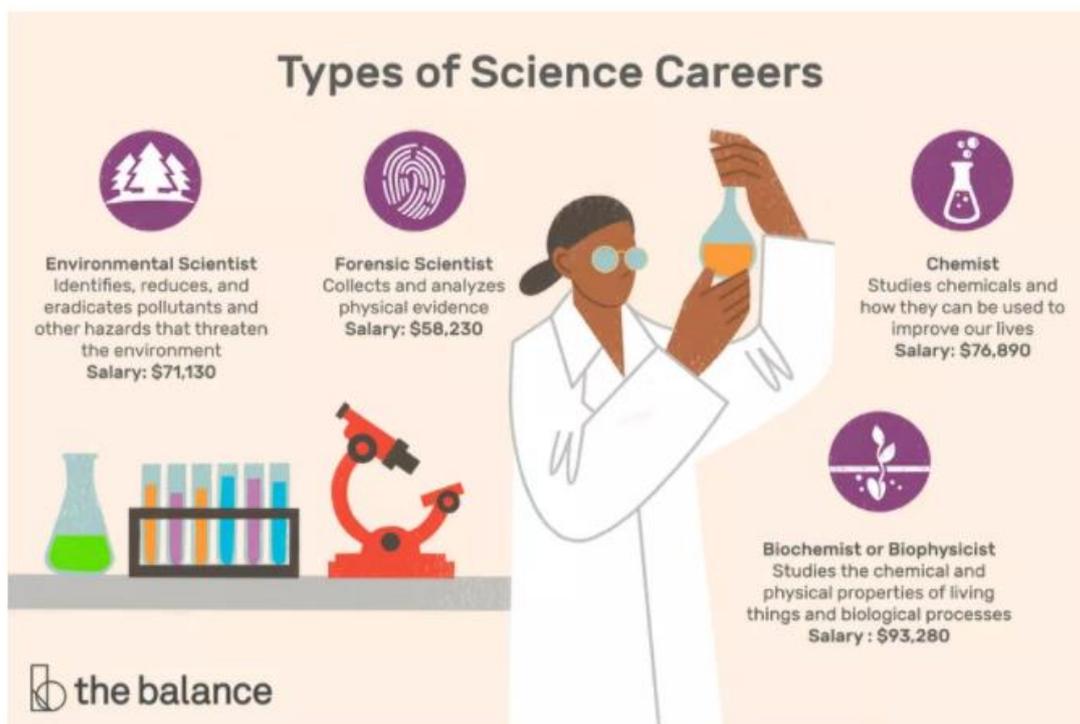


Image by Chelsea Damraksa © The Balance 2019

Vocabulary

*rewarding emotionally draining mental stimulating meticulous
get promoted get a pay rise get on-the-job training get the hang of smth
I'm struggling to cope
I'm stretching myself.
delegate responsibility*

1 Complete the sentences with the correct forms of *get* and the words and phrases in the box.

promoted a pay rise made redundant
on-the-job training the hang of everything

1. My brother _____ six months ago and he hasn't found another job yet.
2. I didn't have a clue what I was doing in the first few days, but I _____ now.
3. We _____ every year in my firm. Instead, we have a system of bonuses if we meet targets.

4. We _____ at the moment. It's great. I'm learning loads of new skills.
5. I've worked for them for nearly three years but I _____ yet. I'm not sure what to do to get to the next level.

2 Match the sentence halves.

How's your new job going?

<ol style="list-style-type: none"> 1. Pretty boring. I'd like to be stretched more, but my boss 2. Great, thanks. I love helping young kids. I'm 3. Not Great, I'm afraid. I'm struggling 4. Awful, to be honest. I nearly handed 5. I had no idea nursing would be so hard, I'm 6. It's great, just really stimulating. I feel 7. It's not rocket science. In fact, the work 	<ol style="list-style-type: none"> a. I'm really stretching myself. b. in my notice last week. c. finding it emotionally draining. d. is pretty menial. e. finding it very rewarding. f. to cope with working shifts. g. never delegates any responsibility.
--	---

Speaking

3 How important are these factors in choosing a job?

- varied and interesting work
- relationships with colleagues
- job security
- opportunities for promotion
- high salary
- satisfaction from helping others

4 Look at the expressions in the box and discuss the careers.

<p><i>I'd like to ... I'd probably hate ... I'd really love to ...</i></p> <p><i>I hope that one day I can ...</i></p> <p><i>I've always wanted to ...</i></p> <p><i>I'm not convinced that I'd ...</i></p> <p><i>I wish that I could ...</i></p> <p><i>I'm not sure whether I'd ...</i></p> <p><i>There is no way I'd ...</i></p>
--

5 Describe a job that you would like to do for a day.

You should say:

- what kind of job it is
- what the daily responsibilities of the job are
- what characteristics you need for the job

and explain why you would like to do this job.

Listening

6 You are going to hear five short extracts where students talk about their work experience. Listen and write the reason why they chose the job (A-G) next to the speaker and question number. There are two options you don't need.

A a tutor's recommendation	Speaker 1 ___
B the international nature of the company	Speaker 2 ___
C the opportunity to work on a cutting-edge project	Speaker 3 ___
D convenience	Speaker 4 ___
E the company's philosophy	Speaker 5 ___
F the opportunity to extend their academic interests	
G the opportunity to work with animals	

7 Listen again. Write next to each speaker what benefits (A-G) they got from doing the job. There are two options you don't need.

A a greater sense of confidence	Speaker 1 ___
B a better understanding of responsibility	Speaker 2 ___
C new social opportunities	Speaker 3 ___
D the chance to make new contacts	Speaker 4 ___
E the chance to explore a new field	Speaker 5 ___
F a clearer idea of future job plans	
G the chance to put ideas into practice	

8 Match the underlined words and phrases from the recording with the definitions a)-f).

1 ...'internship' is often just a <u>euphemism</u> for office dogsbody.	a) to stay financially stable
2 I'm not <u>averse</u> to hard work ...	b) having a strong dislike of something
3 I need as much as I can just to <u>keep afloat</u> , living here.	c) the leading or most important position or place
4 ...some of the <u>nuances</u> of different working cultures.	d) substituting an offensive word or phrase for something less offensive
5 ...want to be at the <u>forefront</u> of change.	e) a subtle difference in or shade of meaning
6 I'd been studying abroad on an exchange when this <u>cropped up</u> .	f) occur or come to one's notice unexpectedly

Grammar

8 Complete the sentences with the pairs of verbs in the box.

could drop / 'd choose	give up / didn't have to
had / would lend	'd get / pushed herself
would make / were	was made / wouldn't
delegated / 'd get	bother
	didn't work / might sign up

1. I'd _____ work tomorrow if I _____ pay my mortgage.
2. I'm retiring soon, so if I _____ redundant, I _____ looking for a new job.
3. I'm sure she _____ promotion if she _____ a bit more.
4. If I _____ shifts, I _____ for an evening course.
5. I know that if I _____ a deadline to meet, the whole team _____ a hand.
6. I think students _____ more progress if class sizes _____ smaller.
7. If my boss _____ more responsibility, we _____ more work done.
8. If I _____ a school subject, I think I _____ art. I'm just hopeless at it.

9 Make a sentence with *if* for each situation.

1. I didn't get promoted. I didn't meet my targets.
2. I wasn't good at music. I dropped it when I was 14.
3. You didn't get any redundancy pay. You didn't work for them for more than one year.
4. My parents didn't go to university. They didn't have the opportunity.
5. I'm working in a factory. I haven't been able to get a job in my field.
6. She didn't get the hang of the job quickly. The boss didn't help her.
7. I was working really long hours. I got ill.
8. My school didn't teach modern languages. I didn't take up German.

Reading

10 Entering the world of work at the moment is tricky and landing any role is something to be really proud of. You may find yourself hoping for a different kind of work in the future though – but how do you figure out what?!

Career coach, **Mark Anderson**, gives his advice on what to ask yourself to suss out the right path for you.

One key thing to remember is that what you do next doesn't have to define you forever. It's just one step in a long career that you're going to have.

The **first question** to ask yourself is: "what difference do I want to make?" When you know you're making a difference in the work that you do, you're much more likely to be content and happy in that work. So, in what way do you want to make a

difference? You can make a difference to individual lives, to businesses, to your local community or maybe even the world.

The **second question** to ask yourself is: "what's important to me when it comes to work?" If you can find work that's in line with your own personal values, then you're much more likely to be happy and content in that work. So, what do you want your future work to give you a sense of? It could be fun, creativity, independence, status, power or something else.

The **third question** to ask yourself is: "what skills do I want to be using in my future work?" Now they could be skills related to dealing with people – so maybe helping, caring, teaching, advising – or it could be skills related to dealing with information – words or numbers or data – or perhaps you want to be using skills where you're doing something physical, hands on. What skills do you want to be using in your future work?

The **fourth question** to ask yourself is: "what are the job prospects like in the industry that I'm looking to work in?" The world of work is changing constantly and quickly, especially now during the current pandemic, so it's really important that you're aware of what the prospects are like both now and also in the future for the industry that you're looking to work within. And once you know that, then you can make the necessary adjustments. You might need to improve on certain skills, you might need to improve on certain qualifications to get into that sector or you might need to think of a plan B where you look at an alternative sector where there are more likely to be job opportunities, even if that's just for a temporary amount of time.

The **fifth question** to ask yourself is: "who can give me more information or advice?" Once you know the kind of work you want to do, it's important to get information about the job, the company or the industry that you're looking to work in so that you can have a greater understanding of the expectations and also so that you can prepare well for any future job applications. In addition, you can get help with your job applications from a parent, a carer or a careers advisor. You don't have to do it all alone.

It's never easy starting out in the world of work and there are going to be highs and lows along the way, but keep in mind that you have a blend of skills and qualities that nobody else has so you have so much to offer. So, stay positive and be confident that things can get better.

From BBC.co.uk

Try to answer or just comment on Mark's five questions.

1. What difference do I want to make through my work?
2. What's important to me when it comes to work? (What are my values?)
3. What skills do I want to use?

4. What are the job prospects like, both now and in the future, for the industries I'm interested in?
5. Who can help me find more information and advice?

11 How to become a research scientist: Jaz's story

Jaz is a **research scientist** at the National History Museum in London, working towards a **Biology PhD**. A PhD involves researching a unique question in order to find out something new.

Jaz's research focuses on investigating how life could have survived back in ancient history when there were extremely cold temperatures. Their work has involved studying cells and DNA (the building blocks of all life on Earth) and has even included a trip to the Arctic!

"What I do is genuinely exciting and I think I'm really finding out something new about the world that is completely unique and completely mine."

I'm Jaz; I'm a research scientist working towards a Biology PhD.

A PhD is a research project that is completely unique. It has to be something new and my question is how life could have survived back in ancient history when the world was very very cold? This is before there were any animals, so I'm working on microorganisms which are tiny things that are just one or a few cells so small that you can't see them with the naked eye.

I'm looking at cells. I'm looking at DNA which are the building blocks of everything that lives on Earth and maybe other things out there in the Universe. To find out how life survived through the coldest period on Earth's history I've been up to the Arctic. There are still things even in the coldest places in the world living in the soils and I've got samples from there so I can look at their DNA and I can hopefully find out how they work.

I grew up in Cornwall by the coast and I spent an awful lot of time at the beach looking in rock pools. There was the aquarium nearby; where I found out that actually a lot of the oceans that I loved so much were supported by microbes, and there are microbes that glow in the dark there are microbes that form into huge plant-like things and at the Natural History museum that's what it's all about.

How does that work? Why is life the way that it is? This is just the perfect place for me to be doing what I love. So I went to university and studied Biology and then I found a PhD project which is what I'm doing now. By the time I finished I will have become a doctor of Philosophy in Biology.

I'm so glad I get to work with such inspirational people in such inspirational places. What I do is genuinely exciting and I think that I'm really finding out something new about the world that is completely unique and completely mine.

From BBC.co.uk

Lesson 2

Job satisfaction

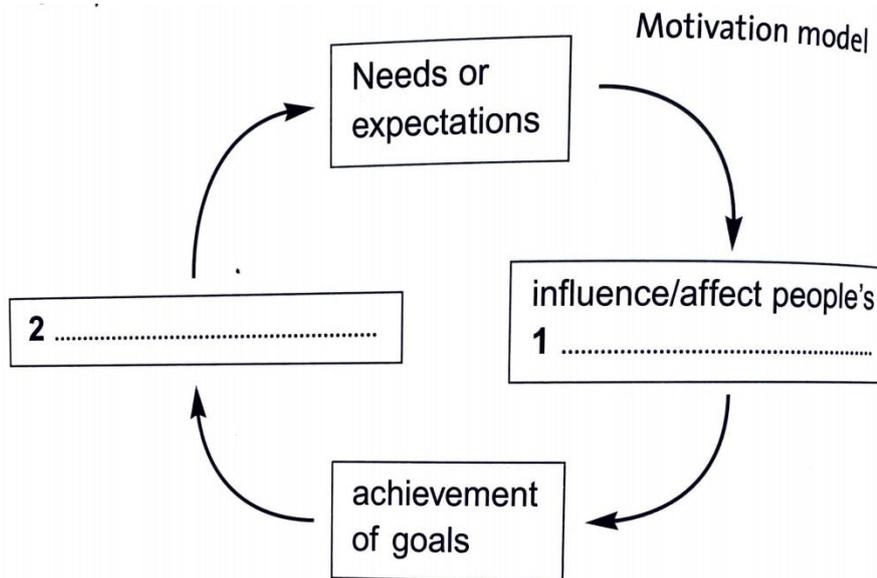
Speaking

1. What success means to you?
2. What jobs do you find the most/the least appealing for you? Why?
3. What factors contribute to success at work?
4. What things can give you job satisfaction?
5. What makes a good job? Rank the following 1 to 8, with 1 being the most motivating for you.
 - flexible working hours
 - being part of a team
 - an excellent salary
 - good holidays
 - promotion prospects
 - staff facilities, e.g. a sports centre
 - responsibility
 - an inspirational boss

Listening

You are going to hear a woman giving a lecture to a group of students on the subject of motivation at work. Write **NO MORE THAN TWO WORDS AND/OR A NUMBER** for each answer.

Listen to [the first part of the lecture](#) and complete the diagram below.



Listen to [the second part of the lecture](#) and complete the sentences below.

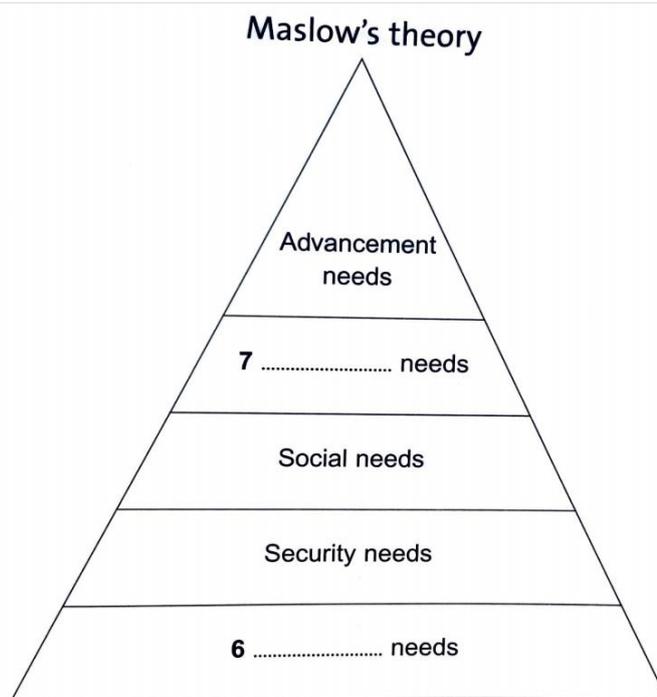
Taylor wrote his theory in the 3) _____ century.

Taylor's theory was that people only worked for 4) _____.

Later research concluded that some people preferred to work 5) _____.

Listen to [the next part of the lecture](#) and complete the diagram below.

Look carefully at the diagram and check you understand where to write your first answer.



Listen to [the last part of the lecture](#).

Complete the table below.

Look at the table to notice that in this section you need to listen for percentages.

Source of job satisfaction	% of employees
Inspirational leader	72%
Type of work	8)_____
Good pay	50%
Flexible working hours	9)_____

10) Choose the correct letter, A-D.

What does the speaker say about workers in the UK?

- A They want to have a good lifestyle.
- B Socialising at work is not a priority for them.
- C They want to earn a lot of money.
- D Having a job title is a priority for them.

Reading

Read an interview with a National University of Kyiv-Mohyla Academy graduate Nataliya Storozhylova. What give her job satisfaction?

The Founder Stories brings us closer to entrepreneurs and their journey creating a startup in Demium. This time, we spoke to Nataliya Storozhylova, CSSO and co-founder at WeVoice. Nataliya joined Demium Málaga in 2020 and founded WeVoice as a therapeutic tool to help people cope with stress and anxiety through behavior-change techniques. Her expertise, knowledge and skills helped to create an insightful mental health app, intended to determine your condition and shape up your mood.

Q: Tell us a little bit about yourself and the project you're developing.

I'm Nataliya, a visionary, innovator, coach & entrepreneur, who was born & raised in Kyiv, Ukraine, a world citizen, who has lived in 7 countries across continents in the past 7 years. I am passionate about transforming revolutionary scientific discoveries into technological progress and bring innovative solutions into the biohacking, longevity, wellness & healthcare system.

My background is in Life Sciences, R&D and Innovation, I hold a Ph.D. degree in Nanomedicine and Pharmaceutical innovation from University of Santiago de Compostela, Spain & and University of Nantes, France. I am a scientist, an innovator and scientific advisor, a co-founder and Chief Strategy & Scientific officer at WeVoice. So, I'm developing a startup in transformational stress management to revolutionize the future of wellbeing & healthcare, to create the world's most robust anxiety & stress-model based on biofeedback. Why? Most people still drastically underestimate what stress can do to them. Stress has become one of the leading causes of death, a key contributor to cancer, cardiovascular diseases, diabetes, aging, sleeping disorders, cognitive disorders, mental clarity, concentration, productivity, creativity and fertility.

Our mission is to help people cope with stress and live a stress free life. We want to give you back the best version of you in Health, Mind, Impact, Performance & Human Connections. Our solution allows you to take a step back and determine where your stress stems from, and teach you how to consciously transform your stress patterns to improve your wellbeing making the latter a life lasting habit.

WeVoice helps people identify their stress patterns via biofeedback, using the information our bodies communicate when experiencing stress. Our technology, based on voice recognition features (vocal biomarkers), allows us to evaluate your levels of stress or anxiety. Certainly, under stress our jaw muscles contract and perform differently and we basically produce different sounds, which allows the app to evaluate stress levels before and after using it.

The product is based on voice-emotion AI-powered by Cognitive Behavioural Therapy (CBT) & Rapid Personal Transformational therapy (RPT) to help our clients understand their mental wellbeing, find repetitive patterns and situations and bring awareness. And ultimately, the final part of a solution will consist of a library of digitized sound-healing sessions to tune your brain frequencies and modulate your state of mental wellbeing in 7-15 min. We could say that we are building the future without alternative substances to fully enjoy our health and wellbeing.

Q: Tell us about some of your lowest lows and highest highs being an entrepreneur
“Challenge” has become one of my most favourite words in this journey. Another one is “action”. As one of my mentors Lisa Nichols says, “Action is the antidote for despair. Action is the prescription for success”. Life belongs to those who are willing to take action, give it a 100% of you, stop getting ready to be ready, go the extra mile, fueling it with curiosity, passion and grit. My third most favorite word is “resilience”.

The most challenging part for me was to deal with fear when you’re extremely tired and at the edge of your performance and yet in the middle of the fundraising process. Our first pre-seed round has been exhausting, pushing the limits back all the time, after 4 months of extremely intense startup journey, depleting all our resources (including financial) and closing the round during 2 months.

Back to the core, back to fear, fundraising is all of it: it’s a challenge, action & resilience. So, it is overwhelming. How do you deal with fear though? Fear is a made up story about something that has not happened yet projected into your future. Disempowering and energy sacking, right? Why not make another story that empowers you? When you give yourself permission to fail, you really just give you permission to fly. So we gave ourselves permission to fail, stand up and move ahead. The highest highs will continue when you have raised the funds and you’re in a position to build your company. The biggest treasure that we have is the team, bonded on core values, capable of creating hundreds of valuable products. Our team doubled in just one month. We’re 6 people now. This is one of the first heights I truly celebrate right now.

Q: Why did you decide to start in Demium?

I’m a first-time entrepreneur. I’ve realized that being an employee at top companies would no longer work for me, if I wanted to create something really meaningful in my life. About a year ago, I realized that I wanted to bring to the market a product

that could measure stress levels based on biofeedback, so I started working on the solution. I have applied to Demium to mature my startup idea. I knew I had to join Demium Malaga. I've already lived in Barcelona and Lisbon, I was ready to move forward. When I joined Demium Malaga I met my co-founders with whom I had the same mission, vision & core values. We were climbing the same mountain on neighbouring trails. Certainly, we were working towards the same goal to create the product in stress management, which is why we decided to continue doing it together. By the time I had started the program, they had just established WeVoice. When I was pitching my idea to the committee and they were pitching theirs, we realized that the next part of the journey would be together.

Thanks to Demium I have been able to validate my idea, vision, build a strategy and find my international & multidisciplinary team of co-founders.

Q: What has creating WeVoice taught you on a personal level? What would be your advice for somebody considering starting a business?

Establishing WeVoice has moved me to a space where I feel much more limitless & unstoppable than ever before. Fighting your fears and learning to leave them in the back burner 1, allows you to build something meaningful. A reminder, the difference between you and successful people is simply that they failed more times than you did. When you give yourself permission to fail, you really just give yourself permission to fly.

Give yourself permission to fly instead of staying in your comfort zone. This is the only way to build your confidence and excellence. Very many times people will tell you "it's impossible". Simply meaning that it's impossible for them, not for you. If you will keep asking the right questions, the right advisors will mentor you; if you will give excellent service to the world, the right partners will join in to share your vision and all the right investors will come to support you.

At the end of the day, it's all about knowing what you want, having faith & guts to do it, being passionate, gritty, and letting go of your fears...one fear at a time. To have the results only 5% of the population have, you need to do what only 5% of the population does (rolling up the sleeves and getting the most important things done). Geniuses are made, not born. Do your excellence, do your best service, become unstoppable and unforgettable.

From Demium.com

Lesson 3

Work environment

Vocabulary

*job types: full time, part time, internship, temporary work (in the) 9-to-5
offer/get raises, promotions*

meticulous
recharge your batteries
sweeping generalisers
detail-obsessed nit-pickers
obsessive planners
last-minute deadline junkies

Listening

Read the radio programme listing below and answer the questions.

1. What does the Mayers-Briggs Type Indicator do?
2. Do you think this type of test can be useful? Why/Why not?

How Mayers-Briggs conquered the office

It was created by a mother and daughter team, neither of whom were trained as psychologists, yet today it is the world's most widely used personality indicator, used by leading companies like Shell, Procter & Gamble, Vodafone and the BBC. In this BBC radio programme, Mariella Frostrup tells the story of the Mayers-Briggs Type Indicator (MBTI), created by Katherine Briggs and her daughter Isabel Briggs Myers. Participants are asked a series of questions intended to reveal information about their thinking, problem-solving and communication styles. At the end of the process each participant is handed one of sixteen four-letter acronyms which describes their 'type'. ENTPs are extrovert inventors, ISTJs are meticulous nit-pickers. Mariella finds out what type she is – will it change the way she works?

Listen to [the programme](#) and answer the questions.

1. According to the programme, what causes a lot of stress at work?
2. What kind of people does the MBTI test?
3. What kinds of questions does the interviewer ask Mariella?

Listen again. Choose the options, a), b) or c), which best describes Mariella's answer to the question.

1. How do you like to recharge your batteries at the end of the day?
 - a. She goes out for a nice meal.
 - b. She stays at home and reads a book.
 - c. She watches TV and goes to bed.
2. If you have ever had the opportunity to put together any flat-pack furniture, how did you go about it?
 - a. She always follows the instructions carefully.
 - b. She finds the whole process infuriating, so she doesn't buy flat-pack furniture.
 - c. She tends to lose the instructions and the parts.
3. If you imagine that a friend of yours gives you a call and says, 'I've just been burgled.', what would you do? What would your reaction be?
 - a. First, she would ask her friend how she was feeling.

- b. First, she would be concerned about the practicalities, then she would ask about feelings.
 - c. She would only ask about the practical details.
4. How do you go about doing the food shopping?
- a. She generally keeps a careful list of all the things she needs. Then she buys it all online.
 - b. She hates internet shopping, so she goes to the supermarket once a week.
 - c. She buys most of her food on the internet, but she doesn't use a list so she forgets things.

Speaking

1. Why is a positive working environment important?
2. Working from home. What in your opinion are the main advantages and disadvantages of working at home? Could you do your job at home if you had the right equipment?
3. Full employment: pros and cons.

“It is up to each person to recognize his or her true preferences.” Isabel Briggs Myers

Decide on your preference in each category and you will have your own personality type, which can be expressed as a code with four letters. Read the description of your MBTI type.

Tell other students about the result of your test, what it says about your personality and whether you agree with the result.

Favorite world: Do you prefer to focus on the outer world or on your own inner world? This is called Extraversion (E) or Introversion (I).

Information: Do you prefer to focus on the basic information you take in or do you prefer to interpret and add meaning? This is called Sensing (S) or Intuiting (N).

Decisions: When making decisions, do you prefer to first look at logic and consistency or first look at the people and special circumstances? This is called Thinking (T) or Feeling (F).

Structure: In dealing with the outside world, do you prefer to get things decided or do you prefer to stay open to new information and options? This is called Judging (J) or Perceiving (P).

ISTJ

Quiet, serious, earn success by thoroughness and dependability. Practical, matter-of-fact, realistic, and responsible. Decide logically what should be done and work toward it steadily, regardless of distractions. Take pleasure in making everything orderly and organized - their work, their home, their life. Value traditions and loyalty.

ISFJ

Quiet, friendly, responsible, and conscientious. Committed and steady in meeting their obligations. Thorough, painstaking, and accurate. Loyal, considerate, notice and remember specifics about people who are important to them, concerned with how others feel. Strive to create an orderly and harmonious environment at work and at home.

INFJ

Seek meaning and connection in ideas, relationships, and material possessions. Want to understand what motivates people and are insightful about others. Conscientious and committed to their firm values. Develop a clear vision about how best to serve the common good. Organized and decisive in implementing their vision.

INTJ

Have original minds and great drive for implementing their ideas and achieving their goals. Quickly see patterns in external events and develop long-range explanatory perspectives. When committed, organize a job and carry it through. Skeptical and independent, have high standards of competence and performance - for themselves and others.

ISTP

Tolerant and flexible, quiet observers until a problem appears, then act quickly to find workable solutions. Analyze what makes things work and readily get through large amounts of data to isolate the core of practical problems. Interested in cause and effect, organize facts using logical principles, value efficiency.

ISFP

Quiet, friendly, sensitive, and kind. Enjoy the present moment, what's going on around them. Like to have their own space and to work within their own time frame. Loyal and committed to their values and to people who are important to them. Dislike disagreements and conflicts, do not force their opinions or values on others.

INFP

Idealistic, loyal to their values and to people who are important to them. Want an external life that is congruent with their values. Curious, quick to see possibilities, can be catalysts for implementing ideas. Seek to understand people and to help them fulfill their potential. Adaptable, flexible, and accepting unless a value is threatened.

INTP

Seek to develop logical explanations for everything that interests them. Theoretical and abstract, interested more in ideas than in social interaction. Quiet, contained, flexible, and adaptable. Have unusual ability to focus in depth to solve problems in their area of interest. Skeptical, sometimes critical, always analytical.

ESTP

Flexible and tolerant, they take a pragmatic approach focused on immediate results. Theories and conceptual explanations bore them - they want to act energetically to solve the problem. Focus on the here-and-now, spontaneous, enjoy each moment that they can be active with others. Enjoy material comforts and style. Learn best through doing.

ESFP

Outgoing, friendly, and accepting. Exuberant lovers of life, people, and material comforts. Enjoy working with others to make things happen. Bring common sense and a realistic approach to their work, and make work fun. Flexible and spontaneous, adapt readily to new people and environments. Learn best by trying a new skill with other people.

ENFP

Warmly enthusiastic and imaginative. See life as full of possibilities. Make connections between events and information very quickly, and confidently proceed based on the patterns they see. Want a lot of affirmation from others, and readily give appreciation and support. Spontaneous and flexible, often rely on their ability to improvise and their verbal fluency.

ENTP

Quick, ingenious, stimulating, alert, and outspoken. Resourceful in solving new and challenging problems. Adept at generating conceptual possibilities and then analyzing them strategically. Good at reading other people. Bored by routine, will seldom do the same thing the same way, apt to turn to one new interest after another.

ESTJ

Practical, realistic, matter-of-fact. Decisive, quickly move to implement decisions. Organize projects and people to get things done, focus on getting results in the most efficient way possible. Take care of routine details. Have a clear set of logical standards, systematically follow them and want others to also. Forceful in implementing their plans.

ESFJ

Warmhearted, conscientious, and cooperative. Want harmony in their environment, work with determination to establish it. Like to work with others to complete tasks accurately and on time. Loyal, follow through even in small matters. Notice what others need in their day-by-day lives and try to provide it. Want to be appreciated for who they are and for what they contribute.

ENFJ

Warm, empathetic, responsive, and responsible. Highly attuned to the emotions, needs, and motivations of others. Find potential in everyone, want to help others fulfill their potential. May act as catalysts for individual and group growth. Loyal, responsive to praise and criticism. Sociable, facilitate others in a group, and provide inspiring leadership.

ENTJ

Frank, decisive, assume leadership readily. Quickly see illogical and inefficient procedures and policies, develop and implement comprehensive systems to solve organizational problems. Enjoy long-term planning and goal setting. Usually well informed, well read, enjoy expanding their knowledge and passing it on to others. Forceful in presenting their ideas.

Excerpted from Introduction to Type® by Isabel Briggs Myers published by The Myers-Briggs Company.

From myersbriggs.org

Writing

You have attended a panel discussion on why working from home might be difficult for employees. You have made the notes below:

Reasons why working from home might be difficult for employees:

- domestic pressures
- loss of human contact
- lack of structure

Some opinions expressed in the discussion.

'You get involved in family issues'.

'It can be lonely'.

'I like organising my own working life'.

Read the essay discussing two of the reasons. Put the paragraphs in the correct order.

A In my view, the more difficult of the two issues is the second. While most of us will enjoy the independence of working from home, it does require a great deal of personal responsibility, and not all employees are self-starters, able to plan their day's work and stick to it.

B The first reason is to do with the loss of a clear dividing line between work and home life. Unless you are very focused, it takes a strong person not to turn on the television or get involved in domestic matters, such as picking the children up from school or dealing with a repair man trying to fix your washing machine.

C As technology has progressed, so it has become easier for people to work from home. Gone are the days when most employees were expected to be in the office every day from 9 to 5. There are many reasons why this change is desirable, such as increased flexibility, less commuting and more involvement in family life. However, there are many reasons why it might cause difficulty.

D Secondly, many employees need the discipline of being in a particular place at a particular time and being told what to do and when. Working from home demands a lot of self-discipline: you have to organise your own physical working environment and set yourself daily targets and deadlines. It is of no interest to the employer how and when the work is done, as long as the job is finished when required, even if it means the employee working all night.

Lesson 4

Outstanding people in science

Reading

1 Read the article and put down the words that the author uses to describe Stephen Hawking. What can you infer about the author's opinion about the scientist?

The Myth of Stephen Hawking

He was an important physicist, but the press and the public saw him as a prophet – and he didn't go out of his way to discourage them

There was almost a religious reverence in the hush that descended upon the audience at the beginning of a Stephen Hawking lecture. Typically, every seat was taken, and if the fire marshals weren't a force to be reckoned with, there were large clots of people near the exits and in the aisles, craning their necks to get their first view of the physicist. And as he wheeled out onto stage, the audience was palpably awed. "Sometimes there were 30 or 40 seconds of pure silence," says Christophe Galfard, one of Hawking's graduate students who himself became a popularizer of science. "For me, it was the silence that made it so ... that's what triggered my wish to pursue that road."

But despite Hawking's passion for sharing his work in cosmology and astrophysics with the public, few in the audience were there to learn about his science. They were there to be in the presence a person who had ascended Mount Sinai and been granted a glimpse of the secrets of the cosmos. Hawking was a great scientist, but in his quest for recognition, he took on the mantle of

a prophet. It was a Faustian bargain that made Hawking the preeminent scientist of our lifetimes—but at a cost.

When a prophet speaks, he speaks with all the confidence and infallibility of divine revelation. Yet a scientist's trade, the very fabric of his profession, is uncertainty. Almost by definition, a biologist or a physicist or a chemist has a head filled with inaccurate information; even those with the biggest egos realize that much of the knowledge they've built up over the years is tentative, incomplete or even outright wrong. Indeed, the scientist's whole purpose is to reduce that uncertainty by just a little bit. While prophets are always right, good scientists, trained to strive to be a little less wrong, are by nature tentative and conditional. And this makes them easy to ignore even when they're the only kind of authorities that count.

Not Stephen Hawking. Once he assumed the mantle of a prophet in the late 1980s, Stephen Hawking would never be ignored. His books were all but guaranteed to sell, whether or not they were well written or even comprehensible. His lectures were typically sold out, with hopefuls packing the aisles to try and get a better look at the famous physicist. He could command an audience like no other scientist; the press and the public would hang on his every word—even when those words didn't have anything to do with his work on black holes or cosmology, or even betray any deep insight or knowledge.

Hawking managed to convince the public that his opinion always mattered. "[H]is comments attracted exaggerated attention even on topics where he had no special expertise," wrote Martin Rees, a close friend and colleague of his, "for instance philosophy, or the dangers from aliens or from intelligent machines." His overweening confidence—and his stubbornness—cost him respect from many of his colleagues, especially late in his career.

Perhaps the most difficult aspect of Hawking's transformation into a celebrity, however, was entangled with his disability. Just as he began to make himself known on the physics circuit, his disease (amyotrophic lateral sclerosis, also known as Lou Gehrig's disease) began to bite. Hawking always suspected that his quick rise through the physics ranks, his early awards, his appointment to the Royal Society at the tender age of 32—even his appointment to the Lucasian chair that Isaac Newton held several centuries before him—all resulted from his disability rather than his physics prowess. "I think I was appointed as a stopgap to fill the chair as someone whose work would not disgrace the standards expected of the Lucasian chair, but I think they thought I wouldn't live very long, and then they could choose again, by which time

they could find a more suitable candidate,” he once told an interviewer. “Well, I’m sorry to disappoint the electors.”

As much as this doubt nagged at Hawking throughout his life—he truly wanted to be recognized for his science rather than for his perseverance in the face of disability—Hawking realized that his celebrity, if not his physics, was founded on the latter as much as the former. It disturbed him that his outsized reputation was due to the caricature of him a disabled genius—that he was viewed as a seer gifted with extraordinary insight in compensation for a bodily incapacity. But at the same time, he embraced it and even helped build the myth to increase his renown.

The cost to Hawking was that the myth obscured the humanity of the person behind it. In truth, Hawking was not the greatest scientist of our time. He was an important physicist whose importance is almost universally misunderstood; a person who suffered deeply and also caused deep suffering; a celebrity scientist who broke the mold of his forebears and fundamentally changed the concept of a scientific celebrity. To truly understand Hawking—just as to truly understand science—one has to reject the myth and examine the messy reality underneath. To stop looking at Hawking as a prophet, but instead as a flawed and brilliant human being.

From Scientific American
By Charles Seife on April 6, 2021

Speaking

1

1. What factors can make young people good inventors?
2. How scientists may suffer to make their discoveries?
3. Who is the most famous scientist in Ukraine? What is he/she famous for?

2 Describe a successful scientist that you would like to meet.

You should say:

- who they are
 - what kind of field they are in
 - what characteristics make them successful
- and explain why you would like to meet them.

Grammar

Complete the text with suitable words. There may be more than one possible answer.

The father of the microscope

Anthony van Leeuwenhoek was born in 1632 in the Netherlands. He had little education and began work at an early age in a shop selling cloth. If his family

1)_____ wealthier, or if he 2)_____ a different occupation, he certainly 3)_____ made the important discoveries he is credited with.

Cloth merchants often used magnifying glasses to examine the cloth they were buying, and Anthony naturally acquired one of his own. He began to take an interest in how magnifying lenses were made, and in 1671 he built his own microscope, and used it to observe the tiny plants and animals living in water. Eventually he discovered bacteria. At first scientists rejected Anthony 4)_____ acquired a magnifying glass, the advances in biology and medicine that built on his work 5)_____ delayed by many years, and many more people 6)_____ victims of disease.

Lesson 5

Job hunting

Video

1 You are going to watch an interview with Helen Kempster, a careers consultant. Before you watch, work with a partner and discuss the questions.

1. In what ways do you think Helen helps people find a job?
2. What do you think are the best ways of preparing for a job interview?

2 Watch [the interview](#) and number the topics Helen discusses in the order she talks about them.

- a. what's important when writing a CV
- b. different ways she helps people find a job
- c. two main types of interview questions
- d. her most important advice for people looking for work
- e. how to prepare for an interview

3 Watch the interview again. Are the statements true or false?

1. The Careers Group only finds jobs for people who have recently graduated.
2. Helen helps create specialized training programmes within academic departments.
3. The most important thing for people with little experience is how they look.
4. You should create just one CV with all your skills and experience and use this for each job application.
5. You should prepare how you are going to answer certain questions in an interview.
6. Interview questions are based around what you can offer the company and your reasons for applying for the job.
7. Competency-based questions use example situations to test your problem-solving abilities.
8. When preparing for an interview, you need to do more than just finding out what the company does.

4 Match the competency-based questions with the skills in the box that they are asking about.

creativity flexibility independence leadership teamwork

1. Tell us about a situation in which you developed a new way of doing something.
2. Tell us about a time when you worked with a group of people to solve a problem.
3. Describe a situation in which you had to guide a group of people to success. What did you do to motivate them?
4. Describe a situation in which you had to change the way you were doing something. What did you change and how did it improve the situation?
5. Tell us about a time when you went against the usual way of doing things. Why did you feel this was necessary?

Vocabulary

5 Match the phrases (1-6) with the meanings (A-F).

1 be cut above	A focus on
2 go to great lengths	B be different from the rest
3 have a hidden talent	C be better than the rest
4 put your mind to	D be good at something, although this isn't obvious
5 set your sights on	E have a goal
6 stand out from the crowd	F do everything possible, however difficult

6 Complete the text with the phrases 1-6 from Exercise 5.

Applying for a job

Before you do anything else, you should 1)_____ getting information about the company that you want to work for. This is a fairly easy thing to do; a good starting place is the company website. When you write your application, remember that the company may receive hundreds of similar applications, so yours needs to 2)_____, or it may be passed over quickly. Include information about work experience, as well as your education and skills. If you 3)_____, such as singing or playing a musical instrument, mention that too.

If you are called for interview, practice answering questions with a friend beforehand. The better prepared you are, the more likely you will 4)_____ the other candidates. At the interview, try to relax, and just 5)_____ getting the job that you want. Good luck!

Writing

A job application – making a positive impression

7 Choose the most important four points from options a-g which, in your opinion, should be included in a job application.

- a. relevant experience
- b. your skills and qualifications
- c. your interests and hobbies
- d. explanations of why you would be suitable
- e. queries about salary and working conditions
- f. expressions of enthusiasm about the role
- g. personal details (age, marital status, etc.)

8 Read the email. Which of the options a-g in exercise 5 are included?

Dear Hiring Manager:

I am applying for the Clinical Research Associate position posted on Southern Oregon University's CareerLink website. Currently, I am a fourth-year student majoring in Biological Sciences with a specialization in Immunobiology. I offer you excellent lab experience combined with a passion for research.

That experience includes extensive research on campus. For example, at SOU, I investigated the cellular action of a mouse gene, Fv1, which gives mice resistance to the leukemia virus, MuLV. In addition, I have also carried out genotyping experiments involving DNA extraction and documented the results in an Excel spreadsheet. I have applied benchwork laboratory techniques, including polymerase chain reaction (PCR) and yeast hybrid systems. Through these projects, I have gained experience in research data consolidation and management skills. Throughout, I developed a reputation as someone who learns quickly and works tirelessly. [If you don't have this level of experience, emphasize your relevant coursework and lab skills.]

Academically, I have a 3.4 GPA and have been on the Dean's List each quarter while working 10-15 hours per week. My involvement in activities outside of the academic realm has strengthened my leadership and interpersonal skills. Most notably, as a teacher's aide in a local elementary school, I explain science concepts to students, many of whom had been previously afraid of the subject. As a basketball player at SOU, I not only learned teamwork, I recruited many lab associates to attend games.

I have attached my resume for your further consideration. I would welcome the opportunity to discuss the position and my qualifications further. Please feel free to contact me at ___ with any questions.

Sincerely,
Bedilla Parfum

9 Write your letter of application (180-220 words) for the advertisement below.

Wanted: International Student Officers

This autumn, we are looking for part-time Student Officers to help us welcome new international students to our university.

Interested applicants must have a good level of spoken English. Please write to Marco Wilde, answering the following questions:

- What do you think international students need to know when they first arrive at the university?
- Do you have any useful skills or experience?
- Why would you like the position of International Student Officer?

Lesson 6

Discrimination and prejudice at work

Video

Women have faced discrimination in the STEM fields (science, technology, engineering and math) for centuries. What does this mean for teenage girls aspiring to become scientists? Watch [the TED Talk](#) that looks at what causes the discrepancies in the workplace and what this means personally to the speaker, Linnea Hummer, who is a young girl interested in STEM.

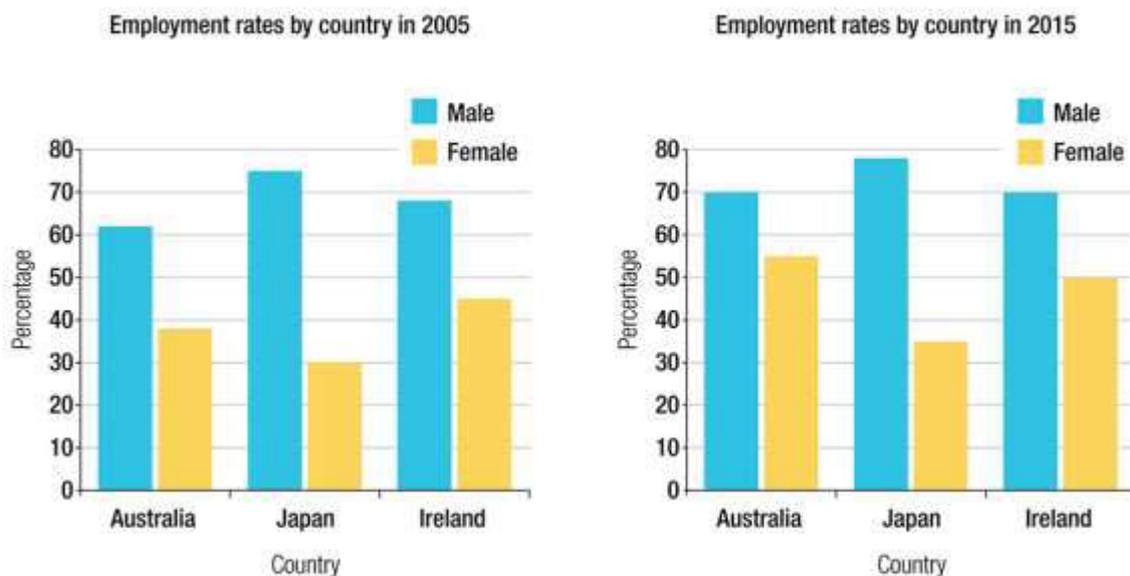
Speaking

1. Gender stereotypes in the workplace.
2. What should be the basis of workplace promotion: seniority, degree, or performance evaluation?

Writing

The bar charts below show the percentages of men and women in employment in three countries in 2005 and 2015.

Summarise the information by selecting and reporting the main features, and make comparisons where relevant.



The two charts show the percentages of men and women in employment in three countries in the years 2005 and 2015. In general, we can see that the percentages of working people increased, with the proportion of women showing the most significant rise.

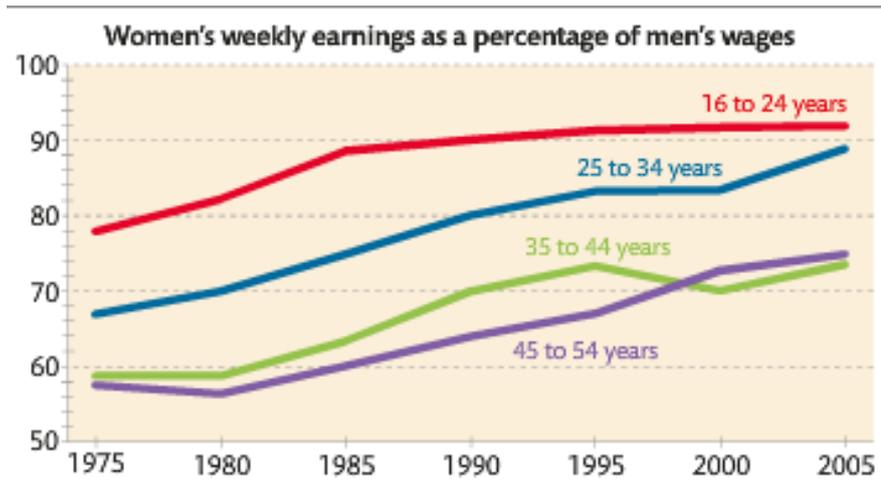
In all of the countries covered, and in both years, the number of men in employment was greater than the number of women. Japan has the highest rate of male employment – approximately 75% in 2005, rising slightly to about 78% in 2015 – and Australia has the lowest – just over 60% in 2005 and 70% in 2015.

The proportion of women in employment was lower than men in all of the countries covered over the two years. It was below 50% everywhere in 2005, but the figures had risen by 2015. In Australia, over half of the women were working, and in Ireland the figure was exactly 50%. In contrast, the number of Japanese women who were working was only about 35% compared with a percentage which was more than double for men at over 70%.

Look at the graph and discuss the questions.

1. What does the graph show?
2. Which age groups have the smallest pay gap between male and female earnings?
3. What has been the overall pattern over the last thirty years?

The graph below shows the average amount of money women earned as a percentage of men's earnings in the USA from 1975 to 2005. Summarise the information by selecting and reporting the main features, and make comparisons where relevant. Write at least 150 words.



Model answer

The graph illustrates the gap between male and female earnings in the USA over a 30-year period. From the chart, we can see that, although women were still paid less than men by the end of the period, the gap between males and females was closing gradually throughout this period.

Lesson 7

The workplace of the future

Speaking

1. What do you think the future workplace will be like?
2. What jobs do you think might be threatened by artificial intelligence in the near future?

Video

1. Read the programme information. Which of these statements might be true?
 1. The programme synthesizes a fantasy and a scientific view of the future.
 2. The programme solely looks at the future of work.
 3. The programme makes several definite predictions about the future.

10 Things You Need to Know About the Future

This programme looks at the issues that will change the way we live our lives in the future. Rather than relying on ideas from science fiction, mathematician Hannah Fry delves into the data available today to provide an evidence-based vision of tomorrow. In this episode, she explores a range of questions including whether a robot will take your job or if, as some believe, we will all one day actually become cyborgs. Hannah's view of the future is something she – and Harizon – are confident will definitely happen, and that is to expect the unexpected?

Watch [the programme](#). What is Dr William's attitude towards the way that Artificial intelligence (AI) might affect her job in the future?

2 Read and discuss possible answers to the questions below. Then watch the programme again and make notes on the answers.

1. What is the key difference between the workforce pre-1970s and since that time?
2. What examples are given of jobs affected by changes since the 1970s?
3. How can a computer diagnose a person's illness?
4. How does a computer program become better at a job like diagnosing illness?
5. If a computer can diagnose more efficiently than a doctor, is the doctor's job threatened?
6. Where could AI in medicine make the most difference?

3 Decide to whom you would attribute each comment.

Hannah Fry Dr Zoe Williams Dr Saurabh Johri Dr Ali Parsa
--

1. It's difficult to believe that a robot could replace a person with professional training.
2. Google was the pioneer in bringing huge amounts of information to the public.
3. Artificial intelligence could benefit many unfortunate people worldwide who don't have easy access to healthcare.
4. In the 1970s, machines became more intelligent.
5. A computer with artificial intelligence is able to determine how symptoms and diseases are related to risk factors.

4 Mark the sentences True or False.

1. Dr Zoe Williams has 10 years' experience of practicing medicine.
2. Since the beginning of time, machines have always been an indispensable part of the workforce.
3. The AI doctor primarily functions by asking a series of questions
4. The AI doctor can provide a diagnosis from a body scan during a physical examination.
5. The AI doctor is actually a software programme.
6. Machine learning is the ability of computers to take vast amounts of data and learn from it.

5 Do these situations characterize artificial intelligence (AI) or human labour (HL)?

1. virtual assistant on smartphones
2. professional sports
3. writing educational materials

4. video game characters
5. online search engines collecting data
6. hotel room cleaning service
7. automatic fraud detection on bank cards
8. checking security cameras
9. creative arts performances
10. decisions in a court of law

Reading

Read the article and complete the summary with words from the text. Use no more than two words in each answer.

Advances in science and technology mean that in 20 years' time, people will be doing jobs that don't 1)_____ today. For example, people will be employed to work as body part makers. These will grow body parts for people such as 2)_____. They will also be responsible for dealing with 3)_____ of existing body parts. They will work closely with 4)_____ from all over the world, who will order the body parts and perform surgeries.

Another job will be that of the vertical farmer. Some experts believe that in the future, these farmers will manage teams of people and 5)_____ workers who will do manual labour on the farms. Others think that 6)_____ will work on the farm and receive food from the farms and profits in return for their labour. They will also carry out experiments to develop 7)_____ and ways of farming.

Virtual lawyers will deal with similar legal matters as now, but they will specialize in problems relating to the 8)_____. One of the main areas of their work will be to work out how to prosecute criminals who commit 9)_____ in more than one country. Finally, surgeons will be employed by 10)_____ to increase the memory capabilities of their top workers. Memory augmentation surgeons will need to decide which patients should receive 11)_____ and what type of procedures to perform. They will also have to belong to associations in order to deal with the 12)_____ questions that will arise as a result of memory enhancement.

Jobs of the future

What will you be doing in 20 years' time? Chances are you'll be working in a job that doesn't yet exist. A report published by the research company Fast Future predicts that advances in science and technology, together with the onset of climate change, could make for career paths that are virtually unrecognizable today. The most popular jobs of the future could include: body part maker, vertical farmer, virtual lawyer, memory augmentation surgeon and space pilot.

The body part maker

A day would typically start with scanning the most critical or urgent new requests for repairs and complete body parts, and checking on component deliveries to help schedule the day's work plan. Requests would be reviewed to determine whether

entire limbs or organs were required or just component subsystems (e. g. a new kneecap) and where multiple copies were required, e. g. for athletes. A visit to the incubator would follow to check on their progress of body parts currently being grown and to perform staged quality control tests.

Much of the day would be spent working at the laboratory bench designing and assembling body parts and testing their performance under various conditions as specified by the owner. Throughout the day the body part maker would be engaged in video conferences with surgeons around the world to discuss their requirements, provide advice on appropriate body part design and review the results of past body part replacement surgeries.

The vertical farmer

Many models can be envisaged for how such farms could be run. One would involve a professional farm manager supported by a mix of human and robotic farmhands and specialist scientists. Another model envisages such farms being part of new community developments with the local residents donating time as farm labour in return for a regular supply of fresh produce and a share of the commercial returns from the farm.

A typical day would start with monitoring plant health, atmospheric conditions and crop growth. A number of routine daily tasks would be performed including tending the plants, planting, harvesting, irrigating the various plants, waste recycling and maintaining the ventilation equipment and other machinery. Each day, time would be dedicated to working on new developments in special areas of the farm given over to experimentation on new crops and growing techniques.

The virtual lawyer

The Internet is a major facilitator of innovation in both the legal and illegal realms. Hence a significant part of the virtual lawyer's time will be spent monitoring new legal developments and precedents that apply to the virtual world. Much of the legal territory remains the same, e. g. disputes, contractual failures, ownership issues, intellectual property theft, sabotage, copyright infringements and trademarks. However, the complexity comes from the global nature of the Web and the different legal jurisdictions that could be involved.

Some of the most interesting challenges will arise from dealing with international web-based criminal acts. For example, consider a British passenger on a flight from Paris to Singapore on an Australian airline. The passenger uses the on-board web access to commit a hacking or phishing attack on victims in Luxembourg whilst flying over Bulgaria. Under whose legal jurisdiction should the crime be prosecuted?

The memory augmentation surgeon

This is a new category of surgeon whose role is to add memory to people who want to increase their memory capacity. A key service would be helping those who have literally been overloaded with information in the course of their life and simply can no longer take on any more data.

Leading companies will increasingly hire such surgeons to enhance the capabilities of their top performers and raise the standards of the entire workforce.

A typical day would involve consultation with prospective patients – including the review of an extensive battery of cognitive, psychological, neurological and emotional tests. These will determine if a patient is suitable for treatment and the appropriate interventions to make.

Surgeons will have to be part of a professional association. The association will play a key role in trying to address the ethical outcry and influencing the debate around memory enhancement.

Writing

Read the task and sample essay and complete it with linking words from the box. Words can be used more than once.

Experts believe that over the next decade, robots will be doing many of the jobs currently done by humans. Discuss the advantages and disadvantages of this.

also whilst consequently in conclusion for example in
contrast furthermore therefore however

In the future, experts predict that robots will be doing many of the tasks currently done by humans. 1)_____, there will be many advantages and disadvantages for society. In this essay, I will discuss both the positive and negative aspects of this new development.

The biggest advantage robots will bring to the workplace is their ability to work quickly and accurately. 2)_____, they don't need to take breaks or have holidays. This would 3)_____ mean that having a robot worker would be much more economical than employing a human.

Another great advantage of using robots in the workplace is that they can perform tasks that are thought to be dangerous, 4 , working on busy roads or underground. They can 5)_____ do the jobs humans don't want to do, such as cleaning the house or dealing with rubbish.

6)_____, there are also many disadvantages to robots entering the workplace. The most significant disadvantage is that many humans would be left unemployed. 7)_____, if a robot was to stop working, this could cause major problems for a company which relied heavily on the technology. A robot which wasn't working properly could also be very dangerous in some cases. The cost of maintaining these robots could also be very expensive.

8)_____, as can be seen from the points made in this essay, there are both advantages and disadvantages to having robots enter the workplace. 9)_____ there are many advantages to this, a significant negative impact would be the loss of jobs for humans. If managed in the right way, 10)_____, I feel that overall the advantages would outweigh the disadvantages.

SCIENCE AND TECHNOLOGY

Lesson 1

Living without Technology

Vocabulary

cutting edge durable state-of-the-art out-of-date become a thing of the past user-friendly handy environmentally-friendly

1 Complete the sentences with the words in the boxes. Use one word from each box in each gap.

biometric driverless iris on raised standalone trending whipped

car concerns data device move scan topic up

1. The company is expected to announce it's first _____ tomorrow, allowing you to drive anywhere just by touching a button.
2. You need to complete an _____ of your eye to open the door.
3. The new watch is a _____ so it doesn't need to be connected to your phone.
4. Many think the government _____ support with tax breaks before the election.
5. Most passports nowadays also store your _____ as well as your signature and photo.
6. The singer's new haircut has become a _____ on social networks today.
7. This mobile bank app is great. I like being able to do my banking _____ the _____.
8. The rise of apps aimed at children has _____ about internet safety.

2 Complete the text with the words below.

controversial experimentation accessible innovation intelligence automation

Our search for knowledge and 1_____ has led to endless 2_____ in the field of artificial 3_____. Scientists continue to push boundaries, creating machines which can emulate the human brain in what has become a very 4_____ subject. Many people are worried that this relentless drive for 5_____ will eventually lead to human beings becoming totally redundant and the technology that will carry out all our tasks will only be 6_____ to an elite few.

Speaking

1. Overall, do you think technology is a force for good in the world? Give examples.
2. How close did we get to Artificial Intelligence?
3. What technological innovations promise to change the third decade of the 21st century?
4. How do regular people influence technological progress?
5. How did cloud technologies change data storing?
6. Can virtual reality substitute for an actual reality?
7. Do you think people are too dependent on technology? Why?/Why not?

Video

BBC News: Technology trends

In this BBC news programme, journalist Rory Cellan-Jones visits the Information Age Gallery at the Science Museum. Famous for its exhibitions of over 200 years of technological innovation, this is the venue where Queen Elizabeth II sent her first 'tweet'. Here, Cellan-Jones talks to technology experts Olivia Solon and Ingrid Lunden about the year's biggest trends in technology.

1 Watch [the programme](#) and answer the questions below.

1. What tech trend began this year, according to the presenter?
2. What two examples of the interconnected world does Ingrid give?
3. Does Olivia think drones will be delivering shopping in the future?
4. What are the concerns about there being lots of drones in the skies?
5. What fact about the way we store data makes it easier for hackers to obtain our information?
6. What personal information does the presenter say millions have already shared?

2 Complete the extracts.

It was the year when 1)_____ technology began to take off with all sorts of devices to give you information on the 2)_____.

They [Apple] were, after all, the company that really pushed the 3)_____ [out] on smartphones, and with their iPhones, so you wonder if their take on the smart watch will be the watch that actually finally breaks 4)_____ from gadget geeks.

The magic of the interconnected world is that everything's going to be 5)_____, so you may be somebody who's driving home from work one day and using the dashboard in your car to turn on your 6)_____ at home.

There are getting to be far more savvy and malicious 7)_____ out there who are looking to tap into your information, to exploit the fact that we have a lot of our 8)_____ in the cloud.

Listening

1 Listen to [an extract](#) from a lecture on game-changing technologies. Complete the table as you listen.

Designer	What is it?	How does it work?
Talib Alhinai		
Solveiga Pakštaitė		
Sam Stranks		

2 Listen again and complete the sentences with the exact words you hear. Use no more than three words.

Talib Alhinai's invention has the potential to quickly create _____ in areas hit by natural disasters.

Long-term, the innovation may also be utilised in the construction process when _____.

Mimica Touch was designed as a response to the creation of mass food waste and has a _____ on those who grow or sell foodstuffs.

Solveiga Pakštaitė's Mimica Touch product may signal significant changes in _____.

Sam Stranks' invention, perovskite, is produced by mixing man-made, low-cost and _____ materials.

As perovskite can be produced in different colours it has an _____ and _____.

3 Match the underlined words from the recording with the definitions a)-f).

3. Working in the field of aerial robotics, he has designed a prototype for a flying robot...
4. ...another layer of plastic with protuberances and a final, smooth layer of plastic.
5. ...reducing the incidence of workplace accidents.
6. He and a team based at MIT have been developing lightweight, efficient and malleable solar conductors...
7. ...when bumps become detectable this indicates that the food product has gone bad.
8. ...areas of the developing world which are currently energy deficient.

- a) able to be shaped without breaking
- b) a rate of occurrence
- c) able to be discovered or noticed
- d) something from which copies are made
- e) not having enough of something
- f) something that sticks out from something else

We live in a time of big challenges, but also of huge opportunities. As emergent technologies continue to improve, a new generation of designers, innovators and pioneers is addressing the pressing issues of the day through game-changing technology. Talib Alhinai is one such pioneer. Working in the field of aerial robotics, he has designed a prototype for a flying robot which can be used to build structures. Given the right development, these autonomous flying robots could have a profound effect on both construction and space travel. The devices, very similar to drones, are capable of printing structures in 3D while in flight. The potential applications for the technology include disaster relief, where drones could work together to 3D print temporary shelters using local materials. Within more standard construction, the drones could be assigned tasks currently deemed too dangerous for human builders, thereby reducing the incidence of workplace accidents. And in the future, the technology may be used to construct habitats when colonising other planets. Conventional wisdom says that the risks of colonising somewhere like Mars are too great, but Alhinai's design could provide a solution which would rewrite the rulebook. Sometimes, the need for innovation can be closer to home. For example, in our kitchens. Approximately one third of the food products produced for mass consumption worldwide, that's 1.3 billion tons, is disposed of without being consumed. One reason is that the expiry date printed on food labels discourages consumers from buying products, and this has a direct economic impact on producers, who end up throwing away 16 percent of their stock before it has actually gone bad. Solveiga Pakštaitė developed Mimica Touch to address that issue. Mimica Touch is a multilayer food label, comprised of a layer of plastic, followed by a layer of gelatin, another layer of plastic with protuberances and a final, smooth layer of plastic. As the food changes in chemical composition, the gelatin reacts. While the label remains smooth to the touch, the food product within is still good, and when bumps become detectable this indicates that the food product has gone bad. This could be a major breakthrough in food sustainability, and mean that the days of throwing out still-fresh produce could be over. Another innovator with an eye on environmental sustainability is materials scientist Sam Stranks. He and a team based at MIT have been developing lightweight, efficient and malleable solar conductors from a man-made, cost-effective substance known as perovskite. The material is made from two cheap and readily abundant salts which are mixed to make an ink that can be pressed into very thin film. Unlike conventional solar panels, the resulting conductors will be so light that they can easily be transported into areas of the developing world which are currently energy deficient. Akin to Alhinai's drones, they can be rapidly deployed to provide aid in disaster zones. Furthermore, perovskite can be tinted to allow this source of renewable energy to have an aesthetic and functional appeal. Future skyscrapers could be coated in varying hues of perovskite, offering an attractive integration of solar cell technology into

architectural projects. It is hoped that this application encourages considerable investment into a substance that could transform our environment for good.

Writing

The advantages of robots doing the basic serving functions in the entertainment, leisure and retail sectors of the economy outweigh the disadvantages. To what extent do you agree with this statement?

Give your opinion. Give reasons for your answer and include any relevant examples from your knowledge or experience. Write 250-350 words.

With the use of robots in manufacturing now a fact of life, we are now moving towards a time in which the retail and service industries are replacing workers with robots as well. Whilst there are some clear benefits for employers, I feel that overall their use would be disadvantageous, particularly for consumers or employees.

At face value it is easy to see why many industries are turning to robots. With today's technology, it is possible to produce machines that can accomplish many of the tasks that humans do. What is more, from an employer's perspective, robots are economically a better proposition in that they do not require wages, they do not get sick and they do not take industrial action against their employers.

However, using robots to build cars is one thing. Using robots in service industries is a very different matter. Whilst it can be argued robots could manage basic service functions, such as selling tickets or even preparing food and drinks, these are not the only service roles performed by entertainment, leisure and retail workers. These industries are all based on making consumers feel looked after, which requires the human touch. Can robots effectively deal with complaints from dissatisfied customers? Would a robot be able to effectively be able to advise a consumer on the product that best suits their sense of style or personality? The answer is probably no to both questions. In addition, the use of service robots would rob many unskilled workers of potential employment, putting a strain on the economy and reducing the overall amount of disposable income for leisure pursuits.

In summary, whilst it is clear that there are some limited advantages to having service industry robots, given that such industries are very much based on providing an enjoyable customer experience, the lack of human interaction would outweigh this in my opinion, and be ultimately detrimental to the service they are offering.

Lesson 2

The world of science

Speaking

1. The influences on the general public's understanding of science and scientists.
2. Do controversies in science make it irrational? Science and progress.

3. What do you think are the main dangers of current scientific advances?
4. How advancements in science improve the quality of life for humans.
5. What areas of scientific research need increased government funding (space, medicine, food production etc.)?

Work in groups and answer the questions.

1. Give an example of a solid, a liquid and a gas.
2. What is the cure for an infection caused by bacteria?
3. Name five things you might find in a laboratory.
4. Name five chemicals in English.
5. Name three types of treatment that a patient might receive in hospital.
6. Name three alternative sources for supplying electricity.
7. What two things can help you recover from flu?

Reading

1 Read the article below. What is the main topic of each of the paragraphs 1-5?
Choose five of the ideas in the box.

an idea for the future an outline of the issue an unsolvable problem
media relations online coverage visual media worldwide publicity

Communicating science

1 One of the major problems for scientists lies in communicating the value of research to the people that matter: policymakers and the general public. In recent years, scientific organisations have come a long way in developing ways to make science more accessible to non-specialist groups.

2 Universities and research institutes now employ press officers to create user-friendly press releases which are intended to communicate new developments effectively, without hype or exaggerated claims. These professionals are able to target specific audiences, and estimate the best time for releasing information to them. They are careful to avoid over-selling a product and make sure that the press release includes information about risk as well as the limitations of a particular study. Occasionally, scientists may address an audience directly to lend weight to a campaign or initiative, but the press officer will assess whether the product will benefit from this or not.

3 The development of blogs has helped substantially in bringing science closer to the public. According to Wikipedia, the *ScienceBlogs* network is now ranked 37th among the most authoritative blogs worldwide, with two of its sections having won weblog awards. In 2008 the network launched a German-language edition, and the following year saw the introduction of *ScienceBlogs* Brazil. Released from editorial restrictions, science bloggers generally focus on areas of science that are both passionate and knowledgeable about. They often write about science in an accessible, lively manner, and it is this that perhaps most attracts members of the public. Ed Young's *Not Exactly Rocket Science*, for instance, is imbued with the writer's enthusiasm and down-to-earth attitude towards the subject. His chatty,

youthful style appeals to a wide range of readers, whereas a formal, two-page article in a science journal might be neglected.

4 Television has also boosted the image of science. Early pioneers such as Jacques Cousteau, whose beautifully filmed documentaries opened up the oceans to millions, quickly realized the potential of TV to make science come alive for viewers. Other science disciplines have eagerly followed suit. Entertaining presenters carry out daring experiments or explore amazing scientific phenomena in order to attract attention. High-profile personalities such as Brian Cox, once famous for playing music in *D:Ream*, have also been instrumental in bringing science into the realm of popular culture. Now working in the field of physics, Brian is presenter of the BBC TV series *Wonders of the Solar System*. His background means that his face is not only well known to younger viewers but is also deemed cool. Other organisations have been utilizing the power of visual media via the internet. For example, *SciVee* offers scientists video services to create online presentations of their research.

5 Nevertheless, despite this progress, communication remains one of science's biggest stumbling blocks. A tendency towards a more old-fashioned academic approach means that scientists often underestimate the importance of becoming media-savvy, leaving them vulnerable to missing out on public and financial support for their research. Perhaps it is time that universities addressed this problem, and thought about adding communications training to the curriculum.

2 Complete the summary of the article with one or two words in each gap. You may need to use different forms of words or phrases that appear in the text.

According to the writer, effective 1)_____ is essential if scientists want to gain support for their research. There are several ways in which this goal is being pursued.

PR experts 2)_____ by numerous scientific organisations to promote and disseminate research. Some scientists write 3)_____, often distinguished by their 4)_____ and accessibility. Science programmes on TV have also boosted the subject's image. Presenters such as Brian Cox, formerly a 5)_____, now a 6)_____, have also helped make science seem 7)_____ geeky. Thanks to companies such as SciVee, scientists can also present their research online in 8)_____.

Some scientists still need to work on improving their media image. The writer suggests that young scientists should be 9)_____ in effective communication skills they are still 10)_____.

3 Choose the correct words.

1. Press officers help scientists *present* / *show* their research to the public.
2. Scientific documentaries can *create* / *inspire* young people to become scientists.
3. Using the latest technology, scientists *estimate* / *guess* the age of the skeleton to be approximately 10,000 years old.

4. Colourful visual images *sense / stimulate* interest and make the topic more appealing.
5. Scientists usually *give / release* information to the public after extensive research.
6. An official visited the research institute to *assess / check* its funding requirements.

Vocabulary

4 Complete the text with the words in the box. There is one extra word.

achievements annual characteristics contributions impact
insight significant teams treatments

Scientific collaboration

There have been many scientific 1)_____ in the last few decades. Today with the internet, experts can collaborate with each other globally in their research, which allows their 2)_____ to make a faster 3)_____ on the world. In the past, scientists used to work alone and rarely shared their work. Today the work of international 4)_____ of scientists offers amazing 5)_____ into what has, up to now, seemed weird and wonderful. For example, growing organs from stem cells, sequencing genomes of cancer tumours mean that successful 6)_____ for people who need transplants or have cancer are ever closer. For most scientists the 7)_____ awards that are given may be seen by many as the main incentive but most of scientist are simply motivated by making 8)_____ discoveries in their specialist fields.

5 Complete the text with the words in the box.

distant surrogate thing explosion signs resurrecting

The idea of 1)_____ extinct species used to be science fiction, but this development may well come true. The science already exists. The recent 2)_____ in genome research tells us that the recipe for making a creature lies in its DNA. Creating animals from a genome sequence is impossible now, but the 3)_____ are it will happen soon. When an animal dies in a dry cave or in ice, we can find intact genome sequences. We then need a surrogate species to give birth to the animal. If we wanted to bring back a mammoth, the 4)_____ would be an elephant. As a result of this development, fears about the extinction of some species could become a 5)_____ memory. As the science gathers pace, conservationists are getting ready; they have begun freezing tissue samples of these animals. The days of campaigns to save the whale and so many other species could be over, as extinction becomes a 6)_____ of the past!

Lesson 3

You and your genes

Reading

1 Read the article and summarise the writer's opinion about DNA testing.

Should you worry about the state of your genes?

Getting your genomic profile read can highlight medical issues, but it's also fraught with complexity and potential confusion, says Dr Phil Hammond.

Have you had your genomic profile read yet? DNA reading from spit samples has been all the rage in America since 2007 and has only recently hit the buffers.

A company called 23andMe (that's the number of paired chromosomes you have) has been at the head of the pack, charging \$499 to identify over half a million code sequences in your DNA. You log into the website, fill in your credit card information and register for a genetic scan. A test tube is then sent to you in the post. You fill it with saliva, then send it back and wait eagerly for the results. After a fortnight, you can click on the website for your profile, which predicts how your genes influence your risk of developing 254 diseases and conditions such as diabetes, cancer and heart disease.

And all without having to go anywhere near a doctor. Having a peek at your genes sounds very empowering if you can afford it. And the theory is that it should allow you to take action to prevent the diseases you're most at risk of. If you have a higher genetic risk of colon cancer, then you might choose to have a colonoscopy early. I like the idea of liberating genetic information for the masses, but as with all medical tests, it can give false results and errors, and create huge anxiety if you can't handle uncertainty and complex data. And researchers are rightly wary that by bypassing proper academic assessment, we don't quite know what we've unleashed on the public.

Some American states have been very concerned that these tests can be ordered without a doctor's instructions. The paternalistic view that patients can't handle this information without a doctor on hand to help interpret it is still prevalent in health systems all over the world. But the bigger issue for me is that we don't yet know what the information means and how reliable it is, so we can't really predict with any accuracy whether the test is worth having yet.

You won't be able to get it from 23andMe at present. The company has always argued that their genetic profiling is not a medical device which is meant to give an accurate diagnosis; rather it says it sells ancestry reports and raw genetic data, without medical diagnosis. The Food and Drug Administration (FDA) in America has now sent 23andMe a warning letter arguing the opposite and claiming the company is offering a diagnostic test without proper approval.

There are lots of other concerns, too. What is the company doing with all this genetic information? Will users become research subjects for something they don't agree

with? And how good is the quality control for the testing, much of which is outsourced?

By Dr Phil Hammond

Vocabulary

2 Complete the sentences with the words in the boxes. Use one word from each box in each gap.

academic complex diagnostic health research test

assessment data subject system test tube

1. The sample is placed in a(n) _____ where the reaction can be observed.
2. It was an interesting theory, but after proper _____, it proved to be false.
3. The initial research threw up a lot of _____ which need to be analysed carefully.
4. Ben agreed to be a(n) _____ in trials of a new medicine.
5. Doctors carried out a(n) _____ to try and find out what was wrong with her.
6. The government was credited with making dramatic improvements to the _____.

3 Match the words in the box with their meanings.

arterial disease biodegradable biomass feedstock landfill
microbe

1. a condition in which a blockage forms in one of the main blood vessels in the body
2. an extremely small living organism, only viewable under a microscope
3. raw material to fuel an industrial process
4. plant and animal matter used to provide energy
5. a place where waste is buried under the ground
6. describes material which can be broken down by natural processes

Video

1 Watch [an interview](#) with professors Richard Kitney and Paul Freemont, Directors of the Centre for Synthetic Biology and Innovation, and answer the questions.

1. What is synthetic biology?
 - a. the modification of man-made substances at cell level
 - b. artificially modifying the DNA and cells of living things
 - c. using patterns found in nature to create synthetic materials
2. Which three processes below are mentioned as applications of synthetic biology?

- a. creating artificial limbs for animals
- b. making something which detects a defect in the body and repairs it
- c. creating microbes to protect artificial alternatives to natural resources
- d. using petroleum and oil to create new substances
- e. creating microbes which turn non-recyclable waste into recyclable waste

2 Watch the interview again and complete the notes.

1. Synthetic biology joins together _____ design and _____ biology.
2. Professor Freemont compares synthetic biology to creating _____ for your _____.
3. The aim of a biosensor is first to find a(n) _____ in the body.
4. _____ is responsible for 30 percent of deaths.
5. A similar device to that which helps unblock arteries could be used for the treatment of _____.
6. At the moment most chemicals and plastics are made from petroleum and _____ ...
7. ... and the problem with this is that it's not _____.
8. At iGEM teams have to design a(n) _____ or machine with a purpose.
9. Last year's team decided to work with something which is a(n) _____-life problem.
10. They wanted to create organisms that _____ landfill waste by breaking it down and producing something new.

Speaking

1. What benefits could each of these applications of synthetic biology have? How important do you think each one is?
 - creating biofuels (fuels created from living matter e.g. oil from sugar cane)
 - making chemicals from agricultural waste
 - making vaccines more efficient
 - cloning plants
 - creating synthetic cells
2. Do you think it's a good idea for humans to genetically modify things? What are the ethical issues which surround synthetic biology?
3. What are the arguments for and against genetic testing?
4. How useful is genetic mapping and sequencing?
5. What are the advantages of DNA testing?
6. What are the problems and concerns about DNA testing?
7. Would you like to have your DNA tested? Why? / Why not?

Lesson 4

Medical breakthroughs

Listening

1 Listen to six doctors and medical researchers predicting what medical developments will take place. Tick the topics which are mentioned.

1 radiation 2 heart attacks 3 knee injuries 4 blindness 5 obesity 6 cancer

Listen again. Match statements a-i with extracts 1-6. There are three extra statements.

- a. People will wear airbag suits to avoid injury to their knees,
- b. Cancer is probably not going to be a problem,
- c. We will have developed the ability to diagnose at birth all known genetic diseases,
- d. Scientists will have created miniature robots capable of performing microsurgery,
- e. X-rays and radiation will still be around,
- f. We probably won't be able to grow a baby completely outside a woman's body,
- g. We will probably find a genetic way to cure the main cause of blindness.
- h. Most medical education will be done at a distance,
- i. We will be able to help people exposed to radiation through research in space.

Speaking

1. Which developments do you think will be the most useful?
2. What are the most exciting recent or current medical breakthroughs?

Reading

1 Read the online article about a current medical breakthrough quickly and note down who or what the following are.

1. Dianne Ashworth
2. The Royal Victorian
3. Bionic Vision Australia
4. Penny Allen

2 Read the article again and decide which three of the following could be subheadings (to attract online readers to read the article).

1. Australian woman was first to receive radical implant.
2. Scientists make blind mice see with radical new implant.

3. Dianne Ashworth has spoken for first time of the ‘little flash’ that signalled the return of her vision.
4. Breakthrough is one of several projects around the world that could restore vision for millions.
5. Researchers hope blind people will be able to move independently.

3 Make notes on the key points in the article. Make sure you cover the following main topics.

- what has just happened
- what the bionic eye is, how it works, who designed it
- future developments and hopes

Vision of the future: The bionic eye that could help millions of blind to see again after woman had some sight restored in pioneering tests Scientists have taken an important step towards helping visually impaired people lead independent lives after a bionic eye gave a blind Australian woman some sight.

Dianne Ashworth, who has severe vision loss due to the inherited condition retinitis pigmentosa, was fitted with a prototype bionic eye in May at the Royal Victorian Eye and Ear Hospital. It was switched on a month later, and today researchers revealed the results.

‘It was really funny when it switched on. I was waiting,’ she said. ‘I had these goggles on and I didn’t know what to expect, and I don’t know if anyone did know what I was going to see. Then, all of a sudden, I went “yep” – I could see a little flash and it was like a little, I suppose, a splinter. There were different shapes and dark black, lines of dark black and white around them and cloud-like images. I can remember when the first bigger image came I just went “Wow”, because I just didn’t expect it at all, but it was amazing.’

The bionic eye, designed, built and tested by Bionic Vision Australia, a group of researchers supported by the Australian government, is equipped with twenty-four electrodes with a small wire that extends from the back of the eye to a receptor attached behind the ear. It is inserted into the space next to the retina within the eye. ‘The device electrically stimulates the retina,’ said Dr Penny Allen, a specialist surgeon who implanted the prototype. Electrical impulses are passed through the device, which then stimulate the retina. Those impulses then pass back to the brain, creating the image. The device restores mild vision, where patients are able to pick up major differences and edges, such as light and dark objects. Researchers hope to develop it so blind patients can walk independently.

‘Di is the first patient of three with this prototype device, the next step is analysing the visual information that we are getting from the stimulation,’ Allen said.

The operation itself was made simple so it can be readily taught to eye surgeons worldwide. ‘We didn’t want to have a device that was too complex in a surgical approach that was very difficult to learn,’ said Allen.

According to the World Health Organization, 39 million people around the world are blind and 246 million have low vision.

Video

1 In her interview, Dr Tina Chowdhury, a scientist at Queen Mary University of London, talks about the topics below. Work with a partner and discuss what you think each one involves.

- 1 Information biology
- 2 Bionics
- 3 Biocompatibility
- 4 Microchip technology
- 5 Tissue engineering

Watch [the interview](#) and match each description below with the topics in Exercise

2a. What other information can you remember about each topic?

- a. How well a device can stay in the body without degrading
- b. The study of why tissues break down and how they can be repaired
- c. Taking something from the human body and growing it in a lab
- d. Devices which improve how the brain works
- e. Building devices which can copy the functions of limbs or organs

2 Are these statements true or false? Watch the interview again to check your answers.

1. The ultimate purpose of bionic devices is to help people continue living their lives after an accident.
2. It is hoped bionic hearts will be used in the future.
3. With neurological problems such as Parkinson's disease the brain is getting bigger.
4. Tina thinks microchips should be used to help healthy people as well as patients.
5. Tissue engineering borrows tools from another area of study.

Speaking

1. Do you agree with Tina, that microchip technology should only be used with patients, not healthy people?
2. What might be some of the positive and negative effects of allowing healthy people to have microchip implants?

Lesson 5

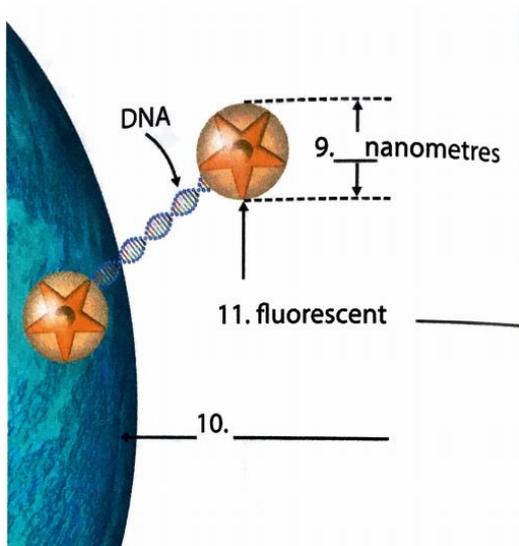
Nanotechnology

Listening

1 Listen to [the lecture](#) on the science of nanotechnology. Complete the summary using NO MORE THAN TWO WORDS AND/OR A NUMBER.

Extremely small objects are created through the use of 1)_____ and 2)_____. Nanotechnology began in the realm of 3)_____ which proved that what was small was in effect, better. The development of 4)_____ after the Second World War meant that electronic circuits could be built in a smaller area, thus saving 5)_____ and 6)_____. In modern transistors, electrons can travel up to 7)_____ nanometres. However, in the future, companies may not carry on 8)_____ nanotechnology if it becomes too unaffordable.

Label the diagram using NO MORE THAN TWO WORDS AND/OR A NUMBER.



Complete the sentences using NO MORE THAN THREE WORDS.

12. An assembler could be used to build a _____.
13. Scientists are worried that these machines _____.

Good afternoon and welcome to this special seminar on what I believe is one of the most exciting ways in which science and technology have merged, namely through what has become known as nanotechnology. While it may be true to say that many inventions in the world of technology have been large-scale, nanotechnology proves that it's possible that what is bigger will not necessarily be best. For nanotechnology involves the science and ability to create something extremely small using computer and electronic technology. If we look back at the past, we see the pocket watch as an example of this. And in its day, this watch was much admired something small, that could fit into a pocket and yet still function as well as a larger-sized watch or clock. Of course, to find a more recognizable starting point for nanotechnology, we need to look at the world of electronics. Certainly, electronics clearly showed that smaller was better. In fact, the smaller the electronic gadget, the more effective and useful it is. Now those of you who attended my lecture on electronics last week will remember that I spoke about how earlier radio technology was quite awkward and

difficult to operate. Then after World War II, the transistor was developed which changed the face of radio. This involved a series of electronic switches that could be placed on a board no bigger than a postage stamp. This meant that an entire electronic circuit could be built in a much smaller area. Naturally, this was not only faster, but it also saved space and more importantly, energy. For those of you who are interested in the transistor, come speak to me afterwards and I'll give you a copy of my handouts from last week.

But moving on with the subject of today's talk, the development of the electronic chip meant that we began to use terms like *microchip* and in doing so place importance on its size being vastly smaller. But as this form of microtechnology developed and literally became smaller, the word micro meaning one millionth, was replaced with the word nano which literally means one billionth. There were pessimists who doubted whether a transistor that small would actually work properly, but they were proved wrong and in a modern transistor, what is known as the gate length, or distance the electrons have to travel, is only about 40 nanometres ... um ... I'm sure you will agree, this is unbelievably tiny and not only that, the electrons can travel incredibly fast. And as scientists continue to develop these transistors, there is every chance that they may become even smaller. Of course one of the problems with developments and designs in technology is that they must not only be practical, but also affordable so it might be that companies will not continue supporting nanotechnology, if it turns out to be too expensive to produce in the long-term.

But one area where there has been major improvements is medicine where nanotechnology is being used to fight life-threatening diseases like cancer. Recently, an American university discovered that nanotechnology can be used to help make systems that supply drugs to the body. A quick way to make sure drugs enter the body is by making artificial molecules. These are in the shape of a star and are small enough to go into cells and release the drugs. In this new system, the molecule is made of two star-shapes, connected by a strand of DNA. Each shape is roughly three to four nanometres long. At one end, the star molecule will enter the diseased cell, while at the other end there is a tracking device, which is fluorescent so that it can light up when it has reached a diseased cell. It is hoped that this will be ... um ... a more effective way to fight diseases. But we must not forget that dangers will always exist in the world of technological changes. One I'd like to focus on is as yet unproven and is still the subject of much speculation. It involves the idea that a molecular machine could be built using something called as assembler. This means one machine would make another machine, but of course, these machines would be operated by people. However, some scientists are concerned that there is a real future possibility these machines could replicate themselves and so no longer be controlled by human beings. But while anything in the world of chemistry is possible, I think it's highly unlikely that we could ever develop a machine capable of replicating itself. Still, if anything, it shows that nanoparticles, like any technology, should be carefully and constantly monitored. Next week I will be looking at nanotechnology and recent developments in the field of molecular biology. I hope that you will be able to join me than.

Lesson 6

The Earth in the Universe

Speaking

1. Should we be investing in more space exploration or is it a waste of resources?
2. Is Mars exploration worth the investment?
3. Why do we explore space for practical or other reasons? Is it a good thing?
4. What technologies does NASA use to explore Mars?
5. Would you join a one-way expedition to establish a human colony on Mars? Why?/Why not?
6. The first ever black hole image was revealed in April 2019. Why do you think astronomers felt this was an important achievement? Why do you think there is such an interest in studying black holes?

Reading

Read the article and choose the best heading for paragraphs A-F. You do not need four of the headings.

1. Characteristics shared with Earth
2. The possibility of life on Mars
3. More thrilling discoveries to come
4. A common history
5. Rethinking our ideas about Mars
6. The view from our spacecraft
7. The method of investigation
8. Early images of the planet
9. What water means for life on Earth
10. Evidence of a different past

Looking for life on Mars

A Since our first close-up picture of Mars in 1965, spacecraft voyages to the Red Planet have revealed a world strangely familiar, yet different enough to challenge our perceptions of what makes a planet work. Every time we feel close to understanding Mars, new discoveries send us straight back to the drawing board to revise existing theories.

B You'd think Mars would be easier to understand. Like Earth, Mars has polar ice caps and clouds in its atmosphere, seasonal weather patterns, volcanoes, canyons and other recognisable features. However, conditions on Mars vary wildly from what we know on our own planet.

C Over the past three decades, spacecraft have shown us that Mars is rocky, cold and sterile beneath its hazy, pinky sky. We've discovered that today's Martian

wasteland hints at a formerly volatile world where volcanoes once raged, meteors ploughed deep craters and flash floods rushed over the land. And Mars continues to throw out new enticements with each landing or orbital pass made by our spacecraft.

D Among our discoveries about Mars, one stands out above all others: the possible presence of liquid water on Mars, either in its ancient past or preserved in the subsurface today. Water is key because almost everywhere we find water on Earth, we find life. If Mars once had liquid water or still does today, it's compelling to ask whether any microscopic life forms could have developed on its surface. Is there any evidence of life in the planet's past? If so, could any of these tiny living creatures still exist today? Imagine how exciting it would be to answer, 'Yes!'

E To discover the possibilities for past or present life on Mars, NASA's Mars Exploration Programme is currently following an exploration strategy known as 'Seek Signs of Life'. This science theme marks a transition in Mars exploration. It reflects a long-term process of discovery on the red planet, built on strategies to understand Mars' potential as a habitat for past or present microbial life. Searching for this answer means delving into the planet's geologic and climate history to find out how, when and why Mars underwent dramatic changes to become the forbidding, yet promising, planet we observe today.

F Even if Mars is devoid of past or present life, however, there's still much excitement on the horizon. We ourselves might become the 'life on Mars' should humans choose to travel there one day. Meanwhile, we still have a lot to learn about this amazing planet and its extreme environments.

Listening

Listen to [three people](#) who are interested in joining a project set up to create a human colony on Mars. Complete both tasks as you listen. Choose one of the options for each gap. You do not need six of the options.

<p>Task 1: Background and skills</p> <p>Speaker 1 ____.</p> <p>Speaker 2 ____.</p> <p>Speaker 3 ____.</p> <p>a is a pilot</p> <p>b has medical skills</p> <p>c is an astronaut</p> <p>d is well travelled</p> <p>e is single</p> <p>f is in good physical condition</p>	<p>Task 2: Views on the Mars project</p> <p>Speaker 1 talks about ____.</p> <p>Speaker 2 talks about ____.</p> <p>Speaker 3 talks about ____.</p> <p>g stages in the colony's development</p> <p>h debris in space</p> <p>i the history of the galaxy</p> <p>j the need for good machinery</p> <p>k the importance of money</p> <p>l driving over rough terrain</p>
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Grammar

Complete the text about the mission to Mars using the words below. There are more words than you need.

that which when whose while before during who

A trip to Mars

Mars One is an organisation 1) _____ is based in the Netherlands. Its aim is to take the first humans to Mars and establish a permanent colony there by 2027. The project is being managed by a Dutch entrepreneur, 2) _____ announced the project to the world in 2012. The crew will be made up of people with a broad variety of skills including scientific knowledge, IT expertise and communication skills. In 2013, 3) _____ the initial application period closed, over 2,500 people had applied to be an astronaut on the programme. The applicants have to complete a series of rigorous tests 4) _____ being accepted onto the project. The applicants 5) _____ are chosen for the mission will then spend seven years training.

Vocabulary

Choose the correct options *in italics* to complete the text.

Forty years ago NASA scientists 1) *proved/suggested/ highlighted* that there would be huge habitats floating around Earth to solve the lack of space on Earth by now but they haven't materialised yet. However, experts 2) *warn/illustration/claim* that it will certainly be possible at some time in the future but 3) *deny/warn/prove* that they know when that will be. These scientists 4) *illustrate/deny/warn* that increasing pollution and a lack of space on Earth is causing devastating problems and 5) *prove/insist/illustrate* that governments should invest more in space exploration.

Writing

Write about the following topic:

Some people believe that space travel is a waste of government money while others believe it is important for human development. Discuss both views and give your opinion.

Give reasons for your answer and include any relevant examples from your own knowledge or experience. Write 250-350 words.

Sample Agree/Disagree Essay

'Space exploration is a total waste of time and money.'

Along with the Earth's oceans, space is one of the last remaining areas which hasn't been much explored by man. Despite the trillions and trillions of dollars that have been spent, we still haven't discovered another planet upon which we could survive. As a result, many criticise the amounts spent, believing that that money could be better used sorting out the problems on Earth.

Those in favour of space exploration believe it is necessary in order to make new discoveries and gather knowledge which would benefit mankind. They are convinced

that much of the technology and many of the products we use every day, such as computers and solar energy, would not have been developed without space exploration. For example, a solar-powered fridge was developed and this has major significance for developing countries where there is no electricity, providing safe storage for food which could otherwise cause illness if left out in the heat of the day. Furthermore, they might find new materials and medicines, ways of cleaning water and growing food to save planet Earth.

However, there is no evidence to prove that these spinoffs would not have been developed independently of a space programme. In fact, the amount spent could have been used to eradicate hunger on the planet and to manage our precious resources here on Earth. The ever-increasing population is causing immense problems on our planet and it is a well-known fact that if there is prosperity, then birth rates decline, so money should be spent on improving living conditions here before being thrown into space.

In addition, there is a strong possibility that one day the astronauts or spaceships may even bring back deadly bacteria from space, which could kill us all. Man's greed and continual search for development could eventually lead to the total destruction of our culture, not to mention the whole human race.

Although there undoubtedly have been good benefits from the space programme, I feel that we have paid too big a price for these developments and that the focus should be on planet Earth before we send more money into space.

Lesson 7

New discoveries

Speaking

1. Which scientific ideas or innovations do you think are the most extraordinary? Why?
2. In which areas do you think we are most likely to see scientific progress over the next 50 years?
3. Scientific innovation is always a positive thing and should be encouraged. To what extent do you agree with this statement?

Vocabulary

Complete the text with the correct verb form of the nouns in brackets: *-se/-yse*, *-ate* or *-ify*.

Citizen science project

Children might contribute to the discovery of future antibiotics thanks to an invention by Vidhi Mehta. Experts 1)_____ (realization) that current antibiotics may not be able to cure infections in future and 2)_____ (estimation) that millions of people will die as a result. Vidhi Mehta is hoping that future research will prevent

this and has asked children to help in a 'citizen science' project. With her simple toolkit, they can test items for possible antibiotic ingredients. Mehta does not 3)_____ (specific) what should be tested, only that it should come from the natural world and suggests they look in their back garden. Mehta hopes the results will 4)_____ (translation) into real research once they have been uploaded and scientists can 5)_____ (analysis) them. Researchers will be able to look for items that have potential and 6)_____ (investigation) them further. At the same time, children who 7)_____ (cooperation) with Mehta's project will experience science first-hand and 8)_____ (education) themselves on the nature of experiments.

Reading

Read the text to get an idea of the argument.

The nature of scientific progress

If "wrong" scientific ideas had not been so widely accepted, might "right" ideas have arrived sooner? Philip Bell argues it is just not that simple.

If you believe in scientific progress, you will agree that the fate of all theories is to be replaced with updated and improved ones. Newton's theory of gravitation was good; Einstein's improved on it; some day we will find another one that is better still, and so on. But does this mean that the best theories are actually impeded by inferior ones?

Some eminent scientists think so. The cosmologist Joe Silk argued that Copernicus's Sun-centred universe was "held back" by Ptolemy's Earth-centric version. According to the physicist Steven Weinberg, meanwhile. Ptolemy himself suffered from similar issues: the ancient astronomer all owed his scientific acuity to be clouded by the "bad theory" of astrology. Weinberg also argues that the 14th - century French polymath Nicole Oresme was on the threshold of discovering heliocentrism before he "finally surrendered" to the misconceived Ptolemaic orthodoxy- the good idea crowded out by a bad one.

Historians of science tend to be much more relaxed about "wrong" ideas. Their task, after all, is not to adjudicate on science but to explain how ideas evolved. This requires them to understand theories in the context of their times: to examine how people thought as they did rather than to decide on the best one. At its worst, however, this position has at times led to the suggestion that there is no right and wrong in the history of science. In this extreme "relativist" view , modern science is no more valid than medieval philosophies, and today's theories have gained acceptance solely because of social and political factors, not because they are objectively any better.

Plenty of scientists and historians have rejected extreme relativism and accepted that science develops ever-more-reliable theories about the world, but I believe the idea that better theories are inhibited by worse ones should be resisted, not so much because it makes for bad history but rather because it denies the realities of how science is done. After all, no-one adheres to a wrong theory In the face of a better one knowing that it is unsound. We do so because we are human and stubborn, attached to our own ideas and also because we are prone to confirmation bias, seing

only what suits our preconceptions. Moreover, we also believe the old theory provides a better account of the situation as it is.

What is more, theories are not only (or even) classed as good because they are eventually proved 'right' but when they offer an adequate account of the reasons for the current situation, without too many arbitrary assumptions. They should be both consistent with and motivated by observations, and ideally they should also have a degree of predictive power. Ptolemy's cosmology largely met those conditions for centuries as did Newton's theory of gravity. In contrast, Max Planck's proposed quantum fell short, at least initially. Taken at face value, quanta undermined the Newtonian physics that was otherwise so successful, without (at that point) any compelling reason to do so.

Whilst we love to deride people who dismissed an idea that proved to be right, sometimes they had good grounds for doing so. There was no widely accepted empirical evidence for quantization as a fundamental property until Einstein's work on the specific heat of solids in 1907. A similar defence can even be made for those who allegedly refused to look through Galileo's telescope to confirm his claims with their own eyes. After all, the telescope was a new invention of unproven reliability and without some practice it was far from simple to use or to interpret what one saw.

So, how can we distinguish "good" theories from "bad" ones? When we are taught the scientific method at school, the answer is usually to do an experiment. Unfortunately, the notion that experiments can be trusted to deliver a clear verdict on the rights and wrongs of theories is simplistic. Defending conclusions against rival interpretations in peer review means that a clean, decisive experimental result quickly becomes a battle against potential confounding factors and alternative explanations. If you have ever experienced that yourself, you will have encountered something called the Quine-Duhem thesis, which says, in essence, that there is always more than one way to read the data. (More strictly, the thesis is that no scientific hypothesis can make predictions independently from other hypotheses). The Quine-Duhem thesis deserves to be much more widely recognised among working scientists; the fantasy that experiments resolve everything looks increasingly threadbare.

Indeed, some famous scientists have explicitly refused to accept experimentation as the ultimate authority. If observations of the 1919 solar eclipse had failed to support general relativity, Einstein averred that he would still have insisted his theory was correct. If a theory were discarded the instant an experimental result seemed to contradict it, progress would be nigh on impossible.

Ultimately, science does appear to be capable of developing ever more dependable, more accurate, more predictive theories. But this in itself does not mean that we should imagine that bad theories or ideas prevent the progress of good ones. To do so is to put the cart before the horse, or to suppose that history has a goal. Instead, further detailed exploration into how science evolves is needed: as David Wootton argues in his book *The Invention of Science*, to understand how reliable knowledge and scientific progress can and do result from a "flawed, profoundly contingent, culturally relative and all-too-human process".

1 Complete each sentence with the correct ending, A-F.

1. The delay in scientific advances has been blamed by some scientists on	A an equal amount of respect irrespective of their intrinsic merit.
2. Science historians view new hypothesis in relation to	B the dangers of fellow scientists attacking a proposal on principle.
3. It is believed by some science historians that all new ideas should be given	C multiple interpretations, depending on how the issue is approached.
4. The Quine-Duhem thesis states that any scientific investigation is open to	D the acceptance of established theories that were faulty.
	E the problems entailed in having to prove a thesis was incorrect.
	F the period in which people live and the way in which society has developed.

2 Do the following statements agree with the view/claims of the writer? Choose YES if the statement agrees with the views/claims of the writer
NO if the statement contradicts the views/claims of the writer
NOT GIVEN if it is impossible to say what the writer thinks about this

People will consciously reject a new theory if it is contrary to their own prejudices and beliefs.

Ptolemy's Earth-centric view of cosmology was an acceptable theory for hundreds of years.

The people responsible for testing Galileo's theory were at fault for refusing to examine his evidence.

Experiments are becoming a less common way of verifying a scientific theory.

An awareness of good science will reveal itself over time.

Writing

Read the essay question and discuss the questions below.

Scientific innovation is always a positive thing and should be encouraged.

To what extent do you agree or disagree with this statement?

Give reasons for your answer and include any relevant examples from your knowledge or experience.

1. What does the question mean?
2. What is your opinion/answer?
3. What might your main points be?

Scientific innovation has always accompanied humanity and received different attitudes at various times. Both the invention of antibiotics and the development of weapons of mass destruction can be attributed to the advancement

of science. Here comes a question whether scientific innovation is a positive thing with no reservations. Although science may be associated with something fundamentally life-improving, it is also possible to blame it for a number of menaces and morally wrong achievements.

It goes without saying that scientific achievements have the world-changing potential and struggle to solve threatening problems. To give an example, scientists have challenged the idea popular in the 1980s that the brain cannot change. This has immensely contributed to neuroscience by finding ways to cure people who have suffered major brain injuries. There have also been established links between physical and emotional signals, which has proved efficient in detecting triggers for mental states and reshaping behavioural patterns. Another example is green chemistry, which focuses on minimized energy utilization. It has been able to replace such environmentally hazardous substance as polystyrene with renewable bioplastic made of corn. Releasing dangerous substances into environment while bleaching paper is slowly becoming a thing of the past as scientists have found the way to substitute hydrogen peroxide for chlorines. As the resources that we rely on are beginning to dwindle, it has become possible to give them up. Furthermore, there have been remarkable breakthroughs in diabetes research, which is ultimately important since this disease is one of the leading causes of mortality worldwide. Scientists have been able to detect a receptor that stimulates cells to produce insulin. This could potentially lead to more effective treatment for diabetes. In addition, a new technique has been developed, which allows transforming stem cells into insulin-producing cells with the further potential of transplanting them into the human body. Diabetes usually leads to serious damage to the heart, blood vessels, eyes, kidneys, and nerves, and finding a medical solution to this problem is the pressing issue of the day. Obviously, scientific innovation has changed and is continuing to change our world for better in a multitude of aspects.

At the same time, some products of scientific innovation are more likely to do significant harm than bring benefits. History is the bright example of how indifferent science can be to humans and international peace. As an illustration, the nuclear bomb was the development of nuclear physics. The idea behind this discovery was that the atom could emit neutrons and produce vast amounts of energy. Physicists worked out that Uranium could be utilized to manufacture a nuclear weapon, which led to the initiation of the bomb projects by the governments involved in World War II. In 1945, the US dropped an atom bomb on the Japanese cities of Hiroshima and Nagasaki, killing more than 200,000 people, which was a deadly realization of the scientific achievement. As a result, the attacks on Japan started a worldwide arms race. Having considered the mistakes of the past, it does make sense to get back to the present. It seems apparent that reproductive biotechnology has gone too far with its invention of the artificial womb. Australian researchers have successfully grown a lamb in an artificial womb. This indicates that such a technology can be effectively applied in reproductive medicine, which poses an inevitable threat to natural pregnancy. There is a clear possibility to do away with human wombs altogether, and this technology brings serious ethical issues. It is the rule of nature that women's bodies are suited to gestation. Meanwhile, artificial gestation seems to

be repugnant and fundamentally against the natural reproductive order. It follows that scientific innovation can be life-threatening and violate the laws of nature, which is a rather alarming issue.

In conclusion, it should be said that scientific innovation is a controversial thing due to the methods it may deploy and the consequences it may lead to. It is unlikely that anyone would deny that advancements in neuroscience, green chemistry, and diabetes treatment have demonstrated the enormous power of science and its huge potential in addressing different sorts of problems. However, scientific experiments and achievements can also mean inventing lethal weapons and developing morally unacceptable techniques. Science has got to the root of a number of issues but it also seems to have contributed to the collective degeneration of humanity.

GLOBALIZATION

Lesson 1

Positive and negative aspects of globalization

Reading and Speaking

1 Read the given below quotations. Choose the key words that in your opinion can characterize the process of globalization. Work in groups and work out your own definition of globalization using the key words you have chosen.

We must take care that globalization does not become something people become afraid of.
Gerhard Schroeder

We must ensure that the global market is embedded in broadly shared values and practices that reflect global social needs, and that all the world's people share the benefits of globalization.
Kofi Annan

Globalization is a policy, not an act of God.
Jimmy Carter

Globalization has changed us into a company that searches the world, not just to sell or to source, but to find intellectual capital - the world's best talents and greatest ideas.
Jack Welch

Globalization, as defined by rich people like us, is a very nice thing... you are talking about the Internet, you are talking about cell phones, you are talking about computers. This doesn't affect two-thirds of the people of the world.
Jimmy Carter

Instead of having a set of policies that are equipping people for the globalization of the economy, we have policies that are accelerating the most destructive trends of the global economy.
Barack Obama

It has been said that arguing against globalization is like arguing against the laws of gravity.
Kofi Annan

If you're totally illiterate and living on one dollar a day, the benefits of globalization never come to you.

Jimmy Carter

Globalization is a bottom-up phenomenon with all actions initiated by millions of individuals, the sum total of which is "globalization." No one is in charge, and no one can anticipate what the sum of all the individual initiatives will be before the result manifest. A global economy can only be the result of "spontaneous order."

John Naisbitt

Contrary to the received wisdom, global markets are not unregulated. They are regulated to produce inequality.

Kevin Watkins

We can no longer allow multi-nationalists to parade as agents of progress and democracy in the newspapers, even as they subvert it at the workplace.

John Sweeney

Globalization is a fact of life. But I believe we have underestimated its fragility.

Kofi Annan

Globalization could be the answer to many of the world's seemingly intractable problems. But this requires strong democratic foundations based on a political will to ensure equity and justice

Sharan Burrow

This is a very exciting time in the world of information. It's not just that the personal computer has come along as a great tool. The whole pace of business is moving faster. Globalization is forcing companies to do things in new ways.

Bill Gates

2 Divide the statements below into 2 groups according to the information from the text above. Sometimes the statements may belong to 2 categories (depending on your attitude to globalization).

Positive Aspects of Globalization

Negative Aspects of Globalization

1. Although different cultures from around the world are able to interact, they begin to meld, and the contours and individuality of each begin to fade.

2. As more money is poured in to developing countries, there is a greater chance for the people in those countries to economically succeed and increase their standard of living.
3. Developing countries are able to reap the benefits of current technology without undergoing many of the growing pains associated with development of these technologies.
4. Global competition encourages creativity and innovation and keeps prices for commodities/services in check.
5. Governments are able to better work together towards common goals now that there is an advantage in cooperation, an improved ability to interact and coordinate, and a global awareness of issues.
6. Large Western-driven organizations such as the International Monetary Fund and the World Bank make it easy for a developing country to obtain a loan. However, a Western-focus is often applied to a non-Western situation, resulting in failed progress.
7. Outsourcing, while it provides jobs to a population in one country, takes away those jobs from another country, leaving many without opportunities.
8. There is a greater access to foreign culture in the form of movies, music, food, clothing, and more. In short, the world has more choices.
9. There is little international regulation, an unfortunate fact that could have dire consequences for the safety of people and the environment.
10. There may be a greater chance of disease spreading worldwide, as well as invasive species that could prove devastating in non-native ecosystems.

3 Work in groups and make up a list of the problems which Ukraine can face due to the influences of globalization.

Lesson 2

Writing a solution to a problem essay

How to Write a Problem Solution Essay: Step by Step Instructions
Problem Solution Essays explain a problem and give a detailed plan for how it can be solved. These essays:

- Describe the problem.
- Convince the reader the problem needs solving.
- Explain the solution proposal.
- Argue that this is the best solution.
- Refute any objections.

Problem Solution Essays are something you will write all the time in your work and in life. If you've thought, "I know how this could be done better!" you have an idea for your problem solution essay.

1. Problem Solution Essay Solution Ideas

(*globalisation influences on education sphere is taken as an example*)

Solution Ideas	How it works	Assumes Cause of Problem is	Example
Add something	Give more money, people, equipment or stuff.	lack of resources	More teachers in schools, more money for fire department
Take away something	Remove source of problem	one thing or person causing problem	fire bad teachers, get rid of poor textbooks
Educate	Give information about the problem and solution.	people don't know what to do	Say "No to Drugs" campaign
Make laws or Rules	Create a new law or rule, or reform existing rules	current rules don't solve problem	School Dress Code revised to require Uniforms
Enforce laws or rules	Provide a way to enforce or else provide more resources (like more police or money for regulators) to enforce existing rules or laws.	Current rules are adequate but aren't enforced enough.	School decides to call parents if students out of dress code.
Change method or procedure	Change the way something is done, or the	something isn't done in the right way.	Change meeting time from Tuesday

Solution Ideas	How it works	Assumes Cause of Problem is	Example
	organization of something.		morning to Saturday to get more people to come.
Motivate	Use advertising or emotional appeals to get people to do something or not do something.	people know what they should do, but don't want to do it	Anti-Smoking ads
Build Something New	Give new facilities or a new organization.	more buildings or a new organization needed because nothing currently existing will solve problem.	Build a new football stadium to encourage fan support.
Work out Compromis	Get sides of argument together to work out a mutual agreement of solution	problem is mostly lack of agreement	Trade agreement talks between countries.
Adapt Solution that Works	Take a solution that worked somewhere else and apply it to this problem	a problem that has been solved elsewhere	Adding taxes on cigarettes decreases smoking, so put a tax on snack foods that are bad for you
Change Leadership	Get rid of current	leader is the problem	Fire college football coach

Solution Ideas	How it works	Assumes Cause of Problem is	Example
	leadership and get someone new in charge		
Change Attitudes	Present information or incentives to change the way people feel about situation.	attitudes are causing problem	Parents give children money to do chores

2. Problem Solution Essay Outline

To be effective, you need to organize your Problem Solution Essay carefully. Your main goal in this essay is to:

- Interest your reader in the problem.
- Convince your reader that the problem is important and needs to be solved.
- Explain your solution clearly.
- Convince the reader that your solution is cost-effective, feasible and workable.
- Convince your reader that your solution is better than other solutions.

3. Introduction to Problem Solution Essay

! State the Problem and Explain Why it Needs to be Solved

- If it is an unknown problem you will need to explain in detail.
- If it is a familiar problem then you need to paint a vivid picture.
- In both situations, you will need to convince the reader that it is an important problem.

Propose a Solution: thesis

1. State your solution clearly in one sentence. Usually this is your thesis sentence which will come at the end of your description of the problem.
2. This thesis sentence usually comes at the end of your description of the problem, however sometimes, if your solution is short and simple, you may end up telling it just at the end.

4. Main Body of Problem Solution Essay

The Body of your paper will be three or more paragraphs. The Body of your paper must:

1. Explain your solution clearly.
2. Give details about how solution will solve the problem.
3. Explain who will be in charge and how it will be funded.
4. Give evidence that your solution will work (expert opinion, examples of when it has worked before, statistics, studies or logical argument)

The Body of your paper will also seek to argue that your solution:

1. Will solve the problem.
2. Is cost effective.
3. Is feasible to implement.
4. Is a reasonable solution to the problem.
5. Can stand up to possible objections.
6. Is better than other solutions.

In order to make a convincing argument, you will need to consider objections to your plan carefully and refute them logically with argument and/or evidence.

5. Conclusion of Problem Solution Essay

Your conclusion will be one or more paragraphs. In your conclusion, you want to clinch your argument and convince your reader that your solution is the best. Here are some effective conclusion ideas:

- Tell what the reader should do
- Give a description of how situation will change if your plan is adopted
- Use the end of the frame story to show how solution is needed or how it will work.
- Give a real-life example or scenario showing adoption of your plan and how it works.
- Give convincing facts, statistics or expert testimony on the solution or the problem.

Effective Problem Solution Essays

Finding Common Ground with Your Audience: In order to formulate an effective argument or proposal, you need to find common ground with your audience. While there is some value in arguments which “preach to the choir” and “rally the troops” to support something they already strongly believe, most arguments are more effective if they seek to persuade an audience which is undecided or not strongly in favor of your position.

Here are some questions that can help you define your audience for your position paper and also find out what common ground you have with them:

1. Who is your audience? What do they believe about your issue?
2. What do you want them to believe/do after reading your paper?
3. What are the warrants (values or strong beliefs) your audience holds about this type of subject?
4. How are your warrants (values or strong beliefs) different or the same as those of your audience?
5. Where do you and your audience have common ground? What basic needs, values and beliefs do you share? Examples of needs and values that motivate most audiences: basic needs, health, financial well being, affection and friendship, respect and esteem of others, self-esteem, new experience, self-actualization, convenience.
6. Which of these needs and values could be effective for you to appeal to in your paper?
7. You have to pay much attention to:

- *Tone*: Tone is important in this sort of paper. You want to have a tone that is reasonable, convincing, and logical.
- *Point of View*: Because you are trying to convince the reader, this is one paper where the 2nd person point of view (“you” or “we”) might be used effectively. However, first person or third is also appropriate.
- *Audience*: Considering the reaction of your reader is very important in writing this paper. You need to address a reader who can actually implement your proposal. You need to think about how you can convince the reader who has the power to act on your suggestions, not just someone who already agrees with you but can’t do anything about the situation.

Both Argument and Problem Solution Essays:

- **Vividly describe a problem or situation.**
- **Have a viewpoint they want to convince the reader to understand.**
- **Want the reader to believe, do or think something.**
- **May want the reader to take action.**

BUT

Problem Solution Essays Give a Detailed Plan: What makes a Problem Solution paper different is that it gives a detailed plan for how the problem needs to be solved and argues for a specific action. The body of a Problem Solution Essay argues for your solution. The Body of a Problem Solution Paper explains:

- What needs to be done.
- How it needs to be done.
- Why it will work.
- Why it is feasible and reasonable as a solution.
- Why it is cost effective.
- Why this solution is better than other solutions.

Writing

1 In groups analyse the given below essays entitled “**How to reduce negative effects of globalization in Ukraine?**” written by students of our University. While analyzing pay attention to the grammar, vocabulary, structure and content presented. Try to be as critical as possible when analyzing and prove all your ideas with as many arguments as possible:

Example A

Globalization is a rather controversial process that nowadays is spread worldwide. Ukraine, as a part of a global community is also involved in globalization with all the positive and negative consequences it brings. Our aim for now is to cut down the amount of negative effects on the country by providing really possible and productive solutions. Perhaps the main problem is the suppression of national business by more powerful multicultural corporations. We can also mention such factor as “brain flow” which takes place in Ukrainian society and cannot but concern modern world. Other contributing factor is global culture, which gradually becomes more valuable and widespread than authentic, native one.

One possible way to reduce impact on business is governmental support of national corporations and increasing taxes for huge multicultural companies. In this way Ukrainian businessmen will have much more favorable conditions for making their business in similar sphere than their colleagues from other countries. It will not only increase the amount of money, which will stay within the country, but also will grow trust and power of national production.

Also government should pay attention to the “brain flow” in order to save powerful intellectual resources in Ukraine, which would help economics in general and welfare of citizens in particular. Proper conditions for intellectual workers, social help, confidence in stable income are likely to stop this process, which result is sustain development of the country.

Another way to overcome the problem of globalization’s influence on Ukrainian culture is rising national pride and in this way to resist global culture. Our rich history and traditions are worth to remember and reproduce in fast-moving world. We should remember those traits, which make us so special and unique and aware of becoming a bad copy of some other country which totally gave up its particularity on pressure of globalization.

All in all, globalization process cannot be stopped, but it’s all up to us what traits we’ll remain to increase its benefit and what traits we should cut down. Clever policy and successful planning are the keys to reduce the negative effects or at least limit them. So now we are to find enough motivation and resources to do so.

Example B

More and more scholars nowadays are talking about the negative effects of the globalization process all over the world. It is told that usually only

developed countries have benefits from this, while the third world countries – conversely suffer. This problem did not bypassed our country, that means we should discover some solutions of how to reduce negative effects of globalization in Ukraine.

One of the worst effects of globalization is that countries lose their own native culture and as a result become very similar to each other. In order to reduce this negative effect we should do our best not to forget our traditions and customs and moreover comply them. This will save the individuality of our country.

The second negative effect is that developed countries built their plants and factories on the territory of our country. This is made because of some reasons like: cheap working power, small taxes and the absence of harm for the ecology of their countries. To fight with this effect our government should ensure that foreign companies follow all the European standards of to working conditions and salaries. That means there will not be an exploitation of one country against another.

The last one negative effect is a great influence of transnational corporations. This influence makes developing countries to be politically and economically dependent on developed countries. Sometimes some conditions of these corporations are not favorable for the state; however they have to submit. To reduce this effect states should be very careful while borrowing money from such corporations, it is better even not to borrow any money at all. Such a policy will decrease the foreign, mainly American influence.

To sum up, there are several negative effects of globalization, like: loosing of individuality of the country, an exploitation of one country against another and great influence of transnational corporations. In order to reduce them we should: do our best not to forget our traditions and customs and moreover comply them and our government gave to ensure that foreign companies follow all the European standards of to working conditions and salaries and be very careful while borrowing money from transnational corporations. Following of these recommendations will help us not to become just a product of globalization.

Example C

People all over the world become closer than ever before. We live in the era of globalization. This socio-political phenomenon affects all spheres of life of all countries. Surely, Ukraine as part of a pervasive global village isn't an exception. And not always the influence of globalization is positive. Thus we should look for ways of diminishing negative effects of this phenomenon in our countries.

Firstly, with an eye to decrease unfavourable impact of globalization in Ukraine it's important to develop our own financial infrastructure. Stable economic institutions will reduce Western influence on the geopolitical course of the country due to the investments in our economy. Thus, Ukraine will

develop independently and not follow the path of modernization, which is dictated by the globalization trends.

Secondly, to reduce negative effects of globalization in Ukraine our government should support the development of our national culture in its distinctive character and uniqueness. Governmental incentives and encouragement of national cultural practice will help to cope with total westernization of culture and preserve our identity. So the state support of the national cultural sphere is vitally important to deal with negative effect of cultural unification caused by globalization.

All in all, negative effects of globalization in Ukraine can be dialed down easily if our government pay attention and concentrate efforts on key spheres of state life. And perhaps the most important areas should be preserved from globalization influence are national economics and culture.

Example D

Globalization is not a new phenomena. There are a lot of debates about the true effects of globalization and if it is really such a good thing. As any other process, it has it's positive and negative sights. However disadvantages of globalization are so strong, that nowadays some countries try to find some ways to reduce negative effects of this process.

One possible way to deal with some cons of globalization would be for developing countries to become more sustained on external sources. I mean that some countries should not be so dependent on other more developed ones when developing countries can satisfy it's requirements for themselves. For example, in Ukraine there are much black earths that are not used in agriculture nowadays, that is way we have to import buckwheat, wheat, some vegetables and fruits, that can be easily grown on our fields. As a result countries will learn to become more independed from the economy of other countries, trying to use its own resources and possibilities. So the process of globalization will not make so much harm on the developing countries if they try to become more economical independed.

Another way to reduce negative effects of globalization would be make people understand their nationalities in the aspect of patriotism, being proud of their own countries, having a conscious life. People should understand their responsibility for their country, their nationality and ethnic group, their families. As a result, the situation will be improved because of raising the process of migration, than is one of the biggest disadvantages of globalization. So, awareness of being national citizens and making people being responsible for themselves and their native land are significant factors in dealing with cons of globalization.

To sum up, there are several measures which could be taken to reduce negative effects of globalization, and everybody should decide whether to put them into practice or not.

2. *Work in groups, choose one of the essays given above and rewrite it, trying to improve it and paying attention to all critical opinions about its vocabulary, grammar, content and structure.*

2 Choose one of the topics given below and write a solution to a problem essay for 200-250 words.

1. How to overcome negative cultural effects of globalization in Ukraine?
2. How to reduce negative effects of globalization in labour market of our country?
3. How to raise the influence of positive effects of globalization in Ukraine?
4. How can Ukraine become an equal member of a global village?

Lesson 3

Consumerism

Reading

1 Read the given below quotations. Choose the key words that in your opinion can characterize key features of consumerism. Work in groups and work out your own definition of consumerism using the key words you have chosen.

Consumerism Quotes

Large department stores, with their luxuriant abundance of canned goods, foods, and clothing, are like the primary landscape and the geometrical locus of affluence. Streets with overcrowded and glittering store windows...the displays of delicacies, and all the scenes of alimentary and vestimentary festivity, stimulate a magical salivation. Accumulation is more than the sum of its products: the conspicuousness of surplus, the final and magical negation of scarcity...mimic a new-found nature of prodigious fecundity.

-Jean Baudrillard

The best things in life aren't things.

-Thomas Carlyle

A consumer is a shopper who is sore about something.

-Harold Coffin

It all depends on whether you have things, or they have you.

-Robert A. Cook

Young people everywhere have been allowed to choose between love and a garbage disposal unit. Everywhere they have chosen the garbage disposal unit.

-Guy Debord

Powerful state and business elites seek to determine the basic framework of modern social goals: maximum economic growth generated by maximized corporate profit, fueled by mass production, fueled by mass consumerism.

-David Edwards

The goals of corporate consumerism require that we accept its values, that we fail to seek better alternatives, that we reject the possibility of finding better alternatives ('psycho-babble'), that we fail even to see the existence of a problem to be solved, that we therefore live according to an entirely inadequate set of values, that we therefore live in complete confusion, that we therefore suffer profound and devastating psychological, physical and environmental disease; that we suffer and, if necessary, die for profit.

-David Edwards

We live in a world of things, and our only connection with them is that we know how to manipulate or to consume them.

-Erich Fromm

The individual serves the industrial system not by supplying it with savings and the resulting capital; he serves it by consuming its products.

-John Kenneth Galbraith

Increase of material comforts, it may be generally laid down, does not in any way whatsoever conduce to moral growth.

-Mahatma Gandhi

We are the slaves of objects around us, and appear little or important according as these contract or give us room to expand.

-Johann von Goethe

Acquisition means life to miserable mortals.

-Hesiod

The happy people are those who are producing something; the bored people are those who are consuming much and producing nothing.

-W. R. [William Ralph] Inge

Most men love money and security more, and creation and construction less, as they get older.

-John Maynard Keynes

The people recognize themselves in their commodities; they find their soul in their automobile, hi-fi set, split-level home, kitchen equipment.

-Herbert Marcuse

It is preoccupation with possessions, more than anything else, that prevents men from living freely and nobly.

-Bertrand Russell

A society in which consumption has to be artificially stimulated in order to keep production going is a society founded on trash and waste, and such a society is a house built upon sand.

-Dorothy L. Sayers

You have no more right to consume happiness without producing it, than you do to consume wealth without producing it.

-George Bernard Shaw

Any so-called material thing that you want is merely a symbol: you want it not for itself, but because it will content your spirit for the moment.

-Mark Twain

Production and consumption are the nipples of modern society. Thus suckled, humanity grows in strength and beauty; rising standard of living, all modern conveniences, distractions of all kinds, culture for all, the comfort of your dreams.

-Raoul Vaneigem

What's great about this country is America started the tradition where the richest consumers buy essentially the same things as the poorest. You can be watching TV and see Coca-Cola, and you can know that the President drinks Coke, Liz Taylor drinks Coke, and just think, you can drink Coke, too. A Coke is a Coke and no amount of money can get you a better Coke than the one the bum on the corner is drinking. All the Cokes are the same and all the Cokes are good.

-Andy Warhol

2 Read the article about the negative effects of consumerism, choose 3 the most worrying aspects of this phenomenon (from your point of view) and substantiate your opinion.

THE NEGATIVE EFFECTS OF CONSUMERISM

It might be argued that we should have the mental strength to resist the influence of an advertisement or our friends, or that consumerism is nothing more than a minor irritant in our everyday lives. But that would be to underestimate its power.

Exposure to one advertisement can be powerful enough to influence someone. Otherwise, why would Coca Cola alone spend \$2 billion per year on advertising? But when we are exposed to thousands of advertisements a day (and have been from childhood), and consumerism is promoted in most of the mental inputs we receive, this can trap us within a consumerist bubble and can mould our entire worldviews – our aspirations, views, lifestyles and many other things. And this trap is very difficult to escape from. Indeed, such is its power, we may not even realise we are caught in a trap. So, the real power of consumerism comes from its cumulative effect - the fact that it has seeped into every aspect of our lives, and that these elements of our culture continually reinforce each other.

Some of the effects of consumerism on us are what one might expect from a culture that promotes consumption. We slip into a cycle of wanting more things – whether it is the new iPod, another holiday abroad or simply a particular type of food – and the pursuit of these things takes up our time, energy, stress and money (sometimes money we do not have – one reason for the spiralling debt of Britons today). We also constantly compare ourselves with other people (both real and fictitious), wanting to be like them or in their position. This leads us into a state of constant dissatisfaction – we are never happy with what we have and are always on edge. And this is just what the logic of consumerism wants, as it makes us more active consumers on a continuous basis. So, consumerism not only affects our behaviour (we spend more time on consumerist activities) but also our thinking (our aspirations, attitudes and worldviews).

Other effects are perhaps less immediately obvious but equally important. For example, consumerism can affect our worldviews and confuse us - especially when we start feeling that our lives are not providing us with what we need to be happy. From the Western perspective, we might have all the elements that constitute a good quality of life – job, car, house and other material possessions. But we might nevertheless feel somehow dissatisfied and empty, feeling that the pursuit of more possessions and the pressure of having to earn more money or sink into further debt to pay for this lifestyle is bringing more costs than benefits to our lives.

This situation can be extremely difficult to escape from, as there are very few dissenting voices on consumerism in modern society – the mainstream idea of what it is to be ‘ethical’ still does not incorporate the idea of escaping the consumerist trap. Any individual struggling with their consumerist lifestyle is therefore unlikely to receive understanding, guidance or support from mainstream society or their friends if they too are immersed within this mainstream society.

There may well be millions of people who feel this sense of dissatisfaction in their lives but are not able to identify its cause or escape from it. Although consumerism is not the only reason why one might feel dissatisfied or stressed, evidence is building among psychologists that “holding a strongly materialist values orientation is, all else being equal, detrimental to psychological well-being”.

There is not necessarily anything morally wrong in buying and selling things, nor even in promoting them (in an honest way and to a certain extent). But the extreme form of consumerism that now dominates the Western world has a number of unpleasant and even potentially dangerous characteristics.

It is intrusive

This is as good a reason as any to dislike it! Advertising, selling and product placement is simply an annoying imposition on one’s peace and personal space. Advertising is everywhere, and spoils many experiences and pleasant views. It is like having a stranger following you and shouting at you for several hours a day.

It is manipulative

Both advertising and consumerism itself try to manipulate us into adopting a particular view of how we should live rather than letting us decide for ourselves.

One might argue that advertisements are simply there to make people aware of the products available to them and serve no purpose other than this. But this is not always the case. Many advertisements and other communications in our consumer society go way beyond this function and attempt to manipulate people into making particular decisions.

Modern advertising is not just about telling people that a product exists – i.e. responding to an existing want or need someone may have. It is now about creating wants and needs that we might not have had before seeing the advertisement. In other words, it creates false desires and needs in us by manipulating us. The advertiser’s ultimate purpose in creating these needs is always to make people want their product.

It does not meet our needs

Some people may believe that consumerism meets all their desires in life. But for an increasing number of people it does not. It creates impossible aspirations – quite simply, the principles it is based on make it a logical impossibility that it will make us happy. If the idea of consumerism is to continually create new needs in people and make them consume more, this will result in us constantly chasing after a carrot on a stick. Although we might reach it sometimes (e.g. by buying a particular product), a new ‘carrot’ (i.e. need) will then appear. A lack of fulfilment is therefore built into the whole idea of consumerism. This is not surprising – if the system is not aimed at meeting human needs and interests, but at generating profit, then it will only be a matter of extreme luck that it ends up doing the former.

The second point follows on from this: consumerism cannot provide many of the things that are important to us. This view is supported by recent

studies in the relatively new discipline of ‘human well-being’ which is gaining increasing interest from politicians and others. It can broadly be described as the study of what makes human beings happy and fulfilled, and the desire to base political and social systems on promoting these things.

The problem is that consumerism often claims that it can provide us with these things. Firstly, advertisers link their products to real human needs. An example of this cited by Reeves is an advertising campaign for Doritos tortilla chips that linked the product to the idea of friends and companionship. Secondly, advertisements will suggest (or at least, strongly imply) that the product can help to fulfil these real human needs. In the Doritos example, the advertisement seems to suggest that “buying their tortilla chips is one way to boost companionship, styling them ‘friendchips’”. So, consumerism pretends to be able to meet our real needs – but it can not. This process of misleading people about critically important human needs represents one of the saddest aspects of consumerism’s manipulative power.

It restricts our choices and lives

Even if consumerism did meet our needs it would not be an acceptable philosophy on which to base our societies because we need to be able to choose the lives we want to lead and it prevents us from doing this.

In its broadest sense, consumerism can be seen as a particular view of the ‘good life’ – a view that says life is better when you have more ‘market goods’ (products, services and activities). It was not originally set up as a specific philosophy or with any particular aim in mind – in fact, it may not have been ‘set up’ at all but may simply have developed as a result of a range of factors, including the desire for growth that is implicit within our global economic system, the need to get economies and societies back on track after the Second World War, the technological developments.

But regardless of its origins, it does now represent a particular view of how we should live. There are, however, many other ways we could live (e.g. simple living or a focus on time and people rather than possessions), some of which people may feel are more appropriate for them.

There will always be some cultural system that forms the basis of society. This will always feature a particular view of ‘the good life’. We need a system that sees choice as a key aspect of the good life. Not the idea of ‘consumer choice’ that is so often presented to us in the modern world but a system that enables people to have real choices about the lives they want to lead, gives them the skills they need to make these choices and encourages them to pursue the lives they really want.

Consumerism is completely inappropriate for this role, as it is a system that actually restricts our ability to see the choices available to us in life, make choices or put them into action. It only promotes its own view of ‘the good life’ – attempting to make people become better consumers - rather than helping people to see the full range of options open to them and helping them to decide for themselves what they want. It pretends that it offers people

choices and freedom beyond its own view of the good life. You know the sort of thing – advertisements saying ‘You’re you. Be you. You can be what you want’ and other such nonsense. But all that this is doing is encouraging you to feel free within the consumerist parameters they are setting for you. And that is not real freedom.

A key reason why it restricts people so effectively is that it has become a massively powerful force, with an influence across most areas of society and our individual lives. And as it is the basic culture of our society, very few people are going to be able to see beyond it.

It therefore becomes very difficult to question or escape from the consumerist worldview, even if one feels strongly that something is wrong with one’s life within it. This is particularly difficult when consumerism claims to be able to meet all our needs, because it leads to self-doubt and confusion about our identity, happiness and life direction which is painful to experience and which, for many people, is never resolved.

It affects our worldviews and characters

Consumerism does not just restrict our choices. It is also a significant influence on our perspectives on the world. For example, if we are spending much of our time and energy seeking the next product or activity to consume then we have less time and enthusiasm to learn about the world or broaden our horizons. Also, consumerism is unlikely to prompt us (or make it easy for us) to question important things such as the availability of the resources that maintain our lifestyles, the capacity of the planet to hold the waste we generate or the vulnerability of the centralized, import-reliant food supply systems we currently use.

Also, consumerism plays a role in moulding our characters – perhaps in ways we would rather it did not. For example, if the whole aim of consumerism is to get us to acquire more, then it might well lead to excessive self interest in the people affected by it. If it includes the pursuit of interests other than human (or value-driven) ones then it seems likely that those following this path will have less time for, or interest in, other people.

It is unsustainable

We live on a planet with a rapidly growing population (6.7 billion people and counting) and a finite set of natural resources for this population to consume. We’ve moved from using around half the planet’s biocapacity in 1961 to over 1.25 times it in 2003. We are already living way beyond the planet’s limits.

Given this worrying situation, it seems obvious that we can’t continue with the ever-increasing levels of consumption demanded by consumerism without major consequences. In fact, what we urgently need is precisely the opposite of consumerism.

3 Work in groups, discuss what you have read. Think of some more negative effects of consumerism.

- ✓ *Natural disasters*
- ✓ *Nuclear issues*
- ✓ *Other pollution issues*
- ✓ *Overpopulation*
- ✓ *Resource depletion*
- ✓ *Soil contamination*
- ✓ *Sustainable communities*
- ✓ *Toxins*
- ✓ *Waste*

2 Read the article about the most wide-spread marketing strategies modern supermarkets use to make people consume more.

MIND GAMES SUPERMARKETS PLAY TO MAKE PEOPLE CONSUME MORE

From supermarkets to department stores, retailers employ clever techniques designed to get you to spend more.

Stores are carefully engineered, and every aspect of the design has a highly specific purpose — from the background music to the interior wall color.

To become more of a savvy shopper — and to cut your bills substantially — start by recognizing these subtle yet common store tricks.

They put a big, bold "sale" sign in the window.

Even if there are a few sales here and there, this is simply bait to get people in the store, where they are likely to buy non-sale items.

There's also a reason they're red: People react faster and more forcefully when they see the color red.

They play the "limited-time offer" card.

Stores not only entice you with sales, but they also use limited-time offers to increase your sense of urgency in making a purchase.

Oftentimes, they're simply creating the illusion of an unbeatable sale. While these items may be tempting to buy on the spot, you're better off putting the item on hold, thinking through the purchase, and making sure it's really worth opening your wallet for.

They greet you with shopping carts.

Once you enter, there are inevitably going to be rows of shopping carts. This invention was designed in the late 1930s to help customers make larger purchases more easily. By greeting you with a nice big cart at your fingertips, the store is encouraging you to fill it.

The larger the cart, the more prone you are to spending more, so opt for the hand basket — or even the old-school armful of purchases — if you can.

Supermarkets put colorful produce at the front.

Encountering splashes of color in the produce aisle upon entering the supermarket will put you in a good mood, make you want to buy more, and ultimately make you think better of that particular store.

They'll get you with baked goods and flowers at the front, too.

Not only are you hit with bright, beautiful produce, but you're immediately exposed to flowers and baked goods. Their appealing smell activates your salivary glands, making you more likely to purchase on impulse.

Supermarkets hide dairy products and other essentials on the back wall.

This forces you to walk through the whole store to reach them, increasing your odds of throwing some items into your cart along the way.

On top of that, they like to change the store layout on you.

As soon as you've got the hang of your local grocery store, the pasta sauce changes aisles and you can't seem to find it. Supermarkets do this on purpose so you end up spending more time in the store looking for certain items: More browsing time equals more opportunities to buy. Plus, once customers start walking through a store's maze of aisles, they are conditioned to walk up and down each one without deviating.

Most stores move customers from right to left.

This, combined with the fact that America drives on the right, makes people more likely to purchase items on the right-hand side of the aisle.

They place the pricier items at eye level.

Anything a store really wants customers to buy is placed at eye level so it's easiest to find, and particularly favored items are highlighted at the end of aisles.

The sample stations and other displays aren't just for show.

This trick not only slows you down and gets you to spend more time in the store, but it exposes you to new products. It also increases the odds that you'll buy that new product, as trying something for free makes you feel more obligated to buy it.

Speaking

Work in groups and discuss the strategies that have surprised you the most. Substantiate your opinion.

Work in groups and think of some other strategies that modern supermarkets use.

Lesson 5

Ethical consumption

Reading

1 Read the article. Work in pairs and answer the question:

“Has Ukraine become a “throw away society”?” Substantiate your opinion. Provide suitable examples to prove your viewpoints.

KEY FEATURES OF THE “THROW AWAY SOCIETY”

Rise of packaging waste

As a consequence of economic growth, we have seen both increased production and increased product waste during the last century. Between the start of New York City [waste collections](#) in 1905 and 2005 there was a tenfold rise in "product [waste](#)" ([packaging](#) and old products), from 92 to 1,242 pounds (42 to 563 kilograms) per person per year. Containers and packaging now represent 32 percent of all [municipal solid waste](#).

Non-durable goods (defined as products in use for less than three years) constitute 27 percent, while durable goods comprise 16 percent.

Food service and disposable food packaging

[Disposable tableware](#) was a key part of the business strategy of chain [fast food](#) restaurants in the US. In order for the business model to work, fast food chains found it economically advantageous to convince consumers through advertising campaigns to carry their own tableware to a waste bins, in order to avoid labor expenses incurred in clearing tables. By establishing a

custom in which customers are encouraged to carry disposables, some of the internal costs of the disposable tableware can be offset.

In 2002, [Taiwan](#) began taking action to reduce the use of [disposable tableware](#) at institutions and businesses, and to reduce the use of [plastic bags](#). Yearly, the nation of 17.7 million people was producing 59,000 tonnes (58,000 long tons; 65,000 short tons) of disposable tableware waste and 105,000 tonnes (103,000 long tons; 116,000 short tons) of waste plastic bags, and increasing measures have been taken in the years since then to reduce the amount of waste. In 2013, Taiwan's Environmental Protection Administration (EPA) banned outright the use of disposable tableware in the nation's 968 schools, government agencies and hospitals. The ban is expected to eliminate 2,600 tonnes (2,600 long tons; 2,900 short tons) of waste like [disposable cups](#) yearly.

In [Germany](#), [Austria](#), and [Switzerland](#), laws banning use of disposable food and drink containers at large-scale events have been enacted. Such a ban has been in place in Munich, Germany since 1991, applying to all city facilities and events. This includes events of all sizes, including very large ones ([Christmas market](#), Auer-Dult Faire, [Oktoberfest](#) and Munich City Marathon). For small events of a few hundred people, the city has arranged for a corporation offer rental of crockery and dishwasher equipment. In part through this regulation, Munich reduced the waste generated by Oktoberfest, which attracts tens of thousands of people, from 11,000 metric tons in 1990 to 550 tons in 1999.

China produces about 57 billion pairs of [single-use chopsticks](#) yearly, of which half are exported. About 45 percent are made from trees – about 3.8 million of them – mainly [cotton wood](#), [birch](#), and [spruce](#), the remainder being made from [bamboo](#). Japan uses about 24 billion pairs of these disposables per year, and globally about 80 billion pairs are thrown away by about 1.4 million people. Reusable chopsticks in restaurants have a lifespan of 130 meals. In Japan, with disposable ones costing about 2 cents and reusable ones costing typically \$1.17, the reusables better the \$2.60 breakeven cost. Campaigns in several countries to reduce this waste are beginning to have some effect.

Waste and socioeconomic status

[Garbage](#) produced because of the rise in [disposable products](#) is often shipped from richer to poorer nations, causing [environmental](#) and social problems for [developing nations](#). Most notable are the large shipments of trash from North America and Western Europe to Africa and Asia due to the relatively low cost of disposal. By the 1990s, over half of all nations in Africa have faced negative externalities from [toxic waste](#) dumped by richer countries.

Waste, both toxic and non-toxic is often dumped without [safety regulations](#). It is thrown in unlined and unregulated [landfills](#) where it [contaminates soil](#) and water, and even [burnt](#), which circulates toxins in the air.

Recently, [electronic waste](#) shipped to [Nigeria](#) has increased due to higher consumption of electronics by North America Europe, with hundreds of shipments of old electronics dropped off at [Lagos](#), Nigeria, every month.

A significantly large percentage of the trash being hazardous waste shipped with the "explicit intent of cheap (and unsafe) disposal". China, also, receives huge amounts of waste, often toxic material, averaging 1.9 million tons per year, because companies find it cheaper to ship garbage away rather than dispose of it themselves.

Food waste

In 2004, a [University of Arizona](#) study indicates that forty to fifty percent of all edible food never gets eaten. Every year [\\$43 billion](#) worth of edible food is estimated to be thrown away.

Planned obsolescence

"[Planned obsolescence](#)" is a manufacturing philosophy developed in the 1920s and 1930s, when [mass production](#) became popular. The goal is to make a product or part that will fail, or become less desirable over time or after a certain amount of use.

Vance Packard, author of [The Waste Makers](#), book published in 1960, called this "the systematic attempt of business to make us wasteful, [debt](#)-ridden, permanently discontented individuals."

Durability of goods

Producers make goods disposable rather than durable so that consumers must continue to repurchase the good, earning the producer a steady supply of customers, rather than a one-time purchase. Profit is maximized for the firm when the usefulness of a good is "uneconomically short", because firms can spend the least amount possible creating a nondurable good, which they sell repeatedly to the customer.

Goods are often replaced even before their usefulness runs out. The perceived durability of a good in a throwaway society is often less than its physical durability. For example, in fast fashion, consumers buy the latest, novelty item because producers market styles that pass with the seasons.

There is pressure on producers to advertise an increased number of "seasons", creating new styles so consumers can update their wardrobes often by buying cheap and flimsy, yet stylish clothes to keep up with current fashion trends. Items that once were considered durable items are now almost exclusively disposable, so it is actually more difficult for consumers who want a durable version to find anywhere selling one. The shift to disposable was ostensibly because of reasons such as convenience or hygiene, even if the

inconvenience of using a durable version is very slight, or there is no proven increase in hygiene.

This can lead to higher costs over time, more waste produced, more resources used, and lesser quality goods.

Not only has there been a movement by manufacturers towards goods that are less durable and not maintainable, producers have also withheld technology that would make common goods more durable, such as in the manufacture of light bulbs.

2 Read the article and define the key features of the ethical consumerism/consumption.

ETHICAL CONSUMPTION

Ethical consumerism (alternatively called ethical consumption, ethical purchasing, moral purchasing, ethical sourcing, ethical shopping or green consumerism) is a type of consumer activism that is based on the concept of dollar voting. It is practiced through 'positive buying' in that ethical products are favoured, or 'moral boycott', that is negative purchasing and company-based purchasing.

The term "ethical consumer", now used generically, was first popularised by the UK magazine Ethical Consumer, first published in 1989. Ethical Consumer magazine's key innovation was to produce 'ratings tables', inspired by the criteria-based approach of the then emerging ethical investment movement.

Ethical Consumer's ratings tables awarded companies negative marks (and from 2005 overall scores) across a range of ethical and environmental categories such as 'animal rights', 'human rights' and 'pollution and toxics', empowering consumers to make ethically informed consumption choices and providing campaigners with reliable information on corporate behaviour.

Such criteria-based ethical and environmental ratings have subsequently become commonplace both in providing consumer information and in business-to-business corporate social responsibility and sustainability ratings such as those provided by Innovest, Calvert Foundation, Domini, IRRC, TIAA-CREF and KLD Analytics. Today, Bloomberg and Reuters provide "environmental, social and governance" ratings direct to the financial data screens of hundreds of thousands of stock market traders.

The not-for-profit Ethical Consumer Research Association continues to publish Ethical Consumer and its associated website, which provides free access to ethical ratings tables.

The term political consumerism first used in a study titled "The Gender Gap Reversed: Political Consumerism as a Women-Friendly Form of Civic and Political Engagement" from authors Dietlind Stolle and Michele Micheletti is identical to idea of ethical consumerism; however in this study, the authors found that political consumerism is a form of social participation

that often goes overlooked at the time of writing and needs to be accounted for in future studies of social participation.

Consumer Groups

In the late 19th and early 20th centuries, people began to have formal consumer movement to ensure that people will get value for their money for the things they purchased in industrialised countries. This kind of movements focused on the unfair labor practices of the companies, labelling requirements of food, cosmetics, drugs and etc. Examples to the consumer movements were Consumer League which was established in New York, USA in 1891, National Consumers League created in USA in 1898, Consumers Council which was established during World War I in Great Britain.

During that time workers were not well-paid, they did not have secure employment with benefit of social protection, working conditions was decent and in this Irish trade union movement focused the ILO policy of campaigning for decent work wherever there is an opportunity for job improvement or job creation.

Global Morality

In *Unequal Freedoms: The Global Market As An Ethical System* (1998), John McMurtry argues that no purchasing decision exists that does not itself imply some moral choice, and that there is no purchasing that is not ultimately moral in nature. This mirrors older arguments, especially by the Anabaptists, e.g. Mennonites, Amish, that one must accept all personal moral and spiritual liability of all harms done at any distance in space or time to anyone by one's own choices.

It is often suggested that Judeo-Christian scriptures further direct followers towards practising good stewardship of the Earth, under an obligation to a God who is believed to have created the planet for us to share with other creatures.

A similar argument presented from a secular humanist point of view is that it is simply better for human beings to acknowledge that the planet supports life only because of a delicate balance of many different factors.

Spending As Morality

Some trust criteria, e.g. creditworthiness or implied warranty, are considered to be part of any purchasing or sourcing decision. However, these terms refer to broader systems of guidance that would, ideally, cause any purchasing decision to disqualify offered products or services based on non-price criteria that affect the moral rather than the functional liabilities of the entire production process. Paul Hawken, a proponent of Natural Capitalism, refers to "comprehensive outcomes" of production services as opposed to the

"culminative outcomes" of using the product of such services. Often, moral criteria are part of a much broader shift away from commodity markets towards a deeper service economy where all activities, from growing to harvesting to processing to delivery, are considered part of the value chain and for which consumers are "responsible".

Andrew Wilson, Director of the UK's Ashridge Centre for Business and Society, argues that "Shopping is more important than voting", and that the disposition of money is the most basic role we play in any system of economics.

Some theorists believe that it is the clearest way that we express our actual moral choices, i.e., if we say we care about something but continue to buy from parties that have a high probability of risk of harm or destruction of that thing, we don't really care about it, we are practising a form of simple hypocrisy.

Task 3

Work in pairs and give 4 suggestions that will help to promote the concept of the ethical consumption in Ukraine. Substantiate your viewpoints.

Lesson 6

Migration

Reading

1 Read an article and summarise causes and types of migration.

Human migration

According to the International Organization for Migration's World Migration Report 2010, the number of international migrants was estimated at 214 million in 2010. If this number continues to grow at the same pace as during the last 20 years, it could reach 405 million by 2050.[2] While some modern migration is a byproduct of wars (for example, emigration from Iraq and Bosnia to the US and UK), political conflicts (for example, some emigration from Zimbabwe to the UK), and natural disasters (for example, emigration from Montserrat to the UK following the eruption of the island's volcano), contemporary migration is predominantly economically motivated. In particular, there are wide disparities in the incomes that can be earned for similar work in different countries of the world. There are also, at any given time, some jobs in some high-wage countries for which there is a shortage of appropriately skilled or qualified citizens. Some countries (e.g., UK and Australia) operate points systems that give some lawful immigration visas to some non-citizens who are qualified for such shortage jobs. Non-citizens, therefore, have an economic incentive to obtain the necessary skills and

qualifications in their own countries and then apply for, and migrate to take up, these job vacancies. International migration similarly motivated by economic disparities and opportunities occurs within the EU, where legal barriers to migration between member countries have been wholly or partially lifted. Countries with higher prevailing wage levels, such as France, Germany, Italy and the UK are net recipients of immigration from lower-wage member countries such as Greece, Hungary, Lithuania, Poland and Romania.

Some contemporary economic migration occurs even where the migrant becomes illegally resident in their destination country and therefore at major disadvantage in the employment market. Illegal immigrants are, for example, known to cross in significant numbers, typically at night, from Mexico into the US, from Mozambique into South Africa, from Bulgaria and Turkey into Greece, and from north Africa into Spain and Italy.

The pressures of human migrations, whether as outright conquest or by slow cultural infiltration and resettlement, have affected the grand epochs in history and in land (for example, the decline of the Roman Empire); under the form of colonization, migration has transformed the world (such as the prehistoric and historic settlements of Australia and the Americas). Population genetics studied in traditionally settled modern populations have opened a window into the historical patterns of migrations, a technique pioneered by Luigi Luca Cavalli-Sforza.

Forced migration has been a means of social control under authoritarian regimes, yet free-initiative migration is a powerful factor in social adjustment and the growth of urban populations.

In December 2003, The Global Commission on International Migration (GCIM) was launched with the support of Secretary-General of the United Nations Kofi Annan and several countries, with an independent 19-member commission, a threefold mandate and a finite lifespan ending December 2005. Its report, based on regional consultation meetings with stakeholders and scientific reports from leading international migration experts, was published and presented to Kofi Annan on 5 October 2005.[3]

International migration challenges at the global level are addressed through the Global Migration Group, established in 2006.

Different types of migration include:

- *Seasonal human migration mainly related to agriculture and tourism*
- *Rural to urban, more common in developing countries as industrialization takes effect (urbanization)*
- *Urban to rural, more common in developed countries due to a higher cost of urban living (suburbanization)*
- *International migration*

2 Look through the article below and suggest the title. Read the article and fill in the missing words.

Never before have there been so many people **1** _____ far away from their native countries. Poor **2** _____ conditions, violence and armed conflicts, environmental **3** _____, a lack of economic perspectives and the growing gap between rich and **4** _____ countries: all these factors play their part. Global mobility and the new media likewise have a great influence on **5** _____ migration trends.

Since man has been **6** _____ earth, ethnic groups have again and again travelled to other regions in the world hoping to find a better basis for existence there. In recent centuries wars have repeatedly **7** _____ mass displacements of refugees.

In recent decades global migration has reached an unknown level. Surveys **8** _____ by international organizations have concluded that currently over 175 million people are living far away from their native countries. 19,2 million people are considered to be "refugees" or "displaced persons".

The term 'migrant' denotes a person living **9** _____ his or her native country. Many leave their homes because there are not enough fertile pastures and arable land, food, water, work or other fundamental requirements. The consequences of environmental **10** _____, such as drought or floods, can also force thousands to leave their native countries. Today roughly two thirds of the world's population live in economically poor countries.

The growing gap between rich and poor is the most significant driving **11** _____ for global migration. In 1960 the income of the richest fifth of the world's population was on average 30 times higher than the poorest fifth. By the year 1990 it was already 60 times higher.

The enormous rate of population growth and the poor perspectives for economic development in some regions give **12** _____ to a tremendous migratory pressure.

Third World and former Soviet Union countries **13** _____ capital and know-how. In some countries, debts absorb a major part of the economic power. Falling raw material prices as well as the customs barriers and import restrictions imposed **14** _____ the industrialized countries prevent the development of viable export industries. Unstable economic policy, a lack of legal stability and widespread corruption discourage investors and concerns from locating their long-term industrial projects in such countries.

The term **15** _____ is used to describe people who are persecuted on account of their race, religion, ethnic group or political conviction. Persons whose freedom or lives are threatened in this

sense have a right to protection by foreign countries on the basis of international conventions.

'Displaced persons' are not fleeing from individual persecution **16**_____ from escalating violence threatening large parts of the population in a certain region or country. Those affected by such conflicts mostly flee in large numbers to safe regions in their native land or in a neighbouring country. In order to prevent unrest, hunger, disease and other problems, they are frequently **17**_____ in refugee camps. The reception and care of large influxes of refugees severely undermine the resources of the states concerned. Refugee camps with tens of thousands of strangers often **18**_____ feelings of insecurity in the host country's population. This can lead to political instability in the country concerned, provoking new conflicts.

Tourism, television and the Internet all **19**_____ the attractiveness of migration. They make the poorest aware of the wealth of the rich. The growth of air travel **20**_____ journeys to far-away industrialized countries. So far only a fraction of those willing to consider migration have actually been able to travel to their preferred destination on other continents. But this could soon change since successful emigrants transfer a considerable share of their income to their relatives at home. As a result, more and more people can afford to travel to distant countries.

In simple terms this means: Migration **21**_____ further migration.

3 List the reasons of migration mentioned in the article. Can you think of any other reasons?

4 Lee's laws divides factors causing migrations into two groups of factors: **push and pull factors**. Push factors are things that are unfavourable about the area that one lives in, and pull factors are things that attract one to another area.

Divide the factors below into 2 groups in accordance with the law above (push and pull factors)

Attractive climates, Better chances of marrying, Better living condition, Better medical care, Bullying, Condemned housing (radon gas, etc.), Death threats, Desertification, Discrimination, Education, Enjoyment, Family links, Famine or drought, Few opportunities, Industry, Job opportunities, Lack of political or religious freedom, Landlord/tenant issues, Loss of wealth, Natural disasters, Not enough jobs, Political and/or religious freedom, Political fear or persecution, Pollution, Poor chances of marrying, Poor housing, Poor medical care, Primitive conditions, Security, Slavery or forced labor, War

Speaking

Work in groups and give suggestions aimed to the reduction of push factors of migration in Ukraine.

Lesson 7

TOPICS FOR PRESENTATIONS

1. Nonverbal communication. How not to become an alien in Ukraine. Substantiate your opinion.
2. Adjusting to a new culture. How to get adjusted to a new culture (any culture)? Substantiate your opinion.
3. What should be done in order to create a positive image of Ukraine in the world? Substantiate your opinion.
4. What factors create cultural stereotypes? Substantiate your opinion.
5. How to fight cultural stereotypes? Substantiate your opinion.
6. What factors create ethnocentrism? Substantiate your opinion.
7. How to fight ethnocentrism? Substantiate your opinion.
8. What factors create prejudice? Substantiate your opinion.
9. How to fight prejudice? Substantiate your opinion.
10. What factors create cultural conflicts? Substantiate your opinion.
11. How to fight cultural conflicts? Substantiate your opinion.
12. What areas of culture create the most serious problems in intercultural communication?
13. How to overcome negative consequences of globalization.
14. How to overcome negative influences of modern internet.
15. How to raise cultural awareness of an average Ukrainian.
16. Causes of migration in modern society.
17. How to overcome negative effects of migration in Ukraine.
18. How to close the health inequality gap in Ukraine?
19. How not to become a “data colony”?
20. How to minimize the risks of the digital dictatorship?
21. How to minimize the negative effects of globalization for Ukraine in the economic sphere?
22. How to minimize the negative effects of globalization for Ukraine in the financial sphere?
23. How to minimize the negative effects of globalization for Ukraine in the economic sphere?
24. How to minimize the negative effects of globalization for Ukraine in the cultural sphere?
25. How to minimize the negative effects of globalization for Ukraine in the environmental sphere?
26. You may suggest any topic to talk about globalization.

ETHICAL VALUES

Lesson 1

Evolution

Reading

Professor Stephen Stearns

Biological evolution has two big ideas. One of them has to do with how the process occurs, and that's called microevolution. It's evolution going on right now. Evolution is going on in your body right now. You've got about 10^{13} bacteria in each gram of your feces, and they have enough mutations in them to cover the entire bacterial genome. Every time you flush the toilet, you flush an entire new set of information on bacterial genomes down the toilets. It's going on all the time.

Now, the other major theme is macroevolution. This process of microevolution has created a history, and the history also constrains the process. The process has been going on for 3.8 billion years. It has created a history that had unique events in it, and things happened in that history that now constrain further microevolution going on today.

It's a deceptively simple idea because the mechanism looks so simple, but the consequences are so wide ranging.

So here's Darwin's idea. If, in a population, there is variation in reproductive success—what does that mean? Variation in reproductive success basically means that different families have different numbers of offspring, or different individuals have different numbers of offspring. Then there has to be a non-zero correlation between reproductive success and some specific trait. There's been some research that shows that taller men have more children. I don't know whether that's just an NBA effect or what that is but it turns out to be true in many societies. So there is a non-zero correlation between the reproductive success and the trait. Then there has to be heritability for the trait. The heritability of height in humans is about 80%.

If you're ever in doubt about whether evolution is operating in a population, go back to these basic conditions. You can always decide whether it's likely to be operating or not. We can turn natural selection off by violating any of these four points. If there's no variation in reproductive success—for example, if there is lifetime monogamy and a one-child policy, there will be zero-variation in reproductive success.

So Natural Selection does not necessarily happen. It only happens under certain conditions. If there's variation in the trait, and there's variation in reproductive success, and there is a correlation between the two, Natural Selection will occur and it will push the trait to the right. If all of these conditions, except the correlation, occur—you have variation in the trait, variation in reproductive success but no correlation—then you get random drift. And these two situations result in radically different things. The first situation produces adaptation, it produces all of the fantastic biology that you're familiar with. It's produced meiosis; it's produced your eye; it's produced your brain. It's extremely powerful.

The random drift situation is what connects microevolution to phylogenetics, and it's what allows us to use variation in DNA sequences to infer history. Further on you will see that we need to have a process of drift in order to generate a kind of large-scale regularity that gives us timing and relationship in macroevolution.

If we have strong selection, we can get pretty amazing things. I could illustrate adaptation a lot of different ways. I could do it say with the leaf cutting ants that were the first farmers; they domesticated a fungus 50 million years ago and have been cultivating it ever since. I could do it with the exquisite morphology of the deep sea glass sponges and how efficient they are at filtering stuff out of the water. I could do it with the design of a shark's body.

I'll do it with bats.

Listening

The Power of Selection and Adaptation [beginning 00:21:25]

Listen to the recording and retell the examples given

Now to a first approximation, whole organism traits are the products of Natural Selection. Maybe not in the immediate past, but usually at some point in the history of life, a whole organism trait will have been under Natural Selection. And to a first approximation, a lot of DNA sequences have been shaped by drift. So we see design in the whole organism and we see noise in the genome—to a rough cut; lots of exceptions.

There are DNA sequences that have clear selective value; in fact, there's a whole literature on this now. There are whole organism traits that have no apparent selective value; for example, the chin. The chin actually is the result of evolution, operating on development, to take a face, which is like that of a gorilla or a chimpanzee, which bulged out, and flatten it out so that we are vertically much flatter than a chimp or a gorilla. As a result of this

being pushed back, something that was there, but kind of covered up, stuck out.

That's where the chin came from. That doesn't mean chins were selective. But certainly the developmental process that originally produced them didn't have to be adaptive. It could just be a byproduct of something that was going on, basically from the mouth up.

So natural selection is driven by variation in reproductive success. The strength of selection is measured by the correlation of variation in a trait with reproductive success. When there's no correlation, there's no systematic change, and then things just drift.

History of Life

Now macroevolution; the big scale process, the big picture. There's one tree of life. Everything on the planet had a common origin. Everything is related to everything else, with the possible exception of the viruses, which are too small for us to decide; their genomes are too small. The branch points in the tree, speciation events—that's when new species were formed.

This history is marked by striking major events. There have been mass extinctions. There have been meteorite impacts. There have been major changes in the organization of the information structure of life. The biological disciplines that you may encounter map onto this timeline. So actually different parts of biology study different parts of this process.

This is the large-scale tree. What you see here are the three kingdoms of life, which are the bacteria, the archaea, and the eukaryotes; the root's at about 3.7 billion years, not million years. At one point a purple bacterium got into the eukaryotes and became a mitochondrion, at another a cyanobacterium got into various plant lineages and became a chloroplast.

You're probably searching around to find out where you, the most important thing in the universe are, and you're way up here, on a little twig. Now if we look at the multi-cellular organisms, they originated around 800 million to a billion years ago. And these are the fungi, the things we call the plants, multi-cellular plants, and then off in this direction we have got a fairly complicated series of branches that end up with us being up here.

For the first two billion years of life most of the action is down in the basal radiation. Going on with bacteria, archaea and eukaryote ancestor, single-celled things, symbiotic events brought mitochondria and chloroplasts into eukaryotic cells.

Already this is telling you something interesting about yourself. You are a community of genomes. You are not a unitary genome. You've got that

mitochondria in you. The main themes are basically that the speciation events that have occurred, particularly over the last billion years or so, have created a tree of life that describes the relationships of everything on the planet.

Systematic biology, phylogenetics, tries to infer the history of life by studying those relationships. And organisms don't come with a barcode on their foreheads telling us who they are related to. We have to try to figure out who they're related to, and when we understand the relationships, then we know the history, because the relationships define the history. So we work with hypotheses about history, and we test these hypotheses against each other and try to come up with the one that's most consistent with the data that we've got. And they give us a historical framework within which we can then interpret what's happened.

There are major events that have happened. Briefly these are they. Life originates about 3.6 to 3.9 billion years ago. And, by the way, it seems to have originated fairly quickly. Within probably about 100 million years—within just a hundred million years, after water could exist on the surface of the planet in liquid form, following the meteorite bombardment, when the surface of the planet cools down enough for water to be liquid—life probably originates pretty quickly. And arguably, within the first hundred generations, the first parasites were around.

Then eukaryotes and meiosis, which is how a biologist refers to organized sex, happened about 1.5 to 2.5 billion years ago; multi-cellularity, which gives us developmental biology, about a billion years ago. All the major body plans for animals appear to have, with the exception perhaps of the jellyfish and a few of their relatives, seem to have originated about 550 million years ago.

There was a near loss of life on the planet in the Permian mass extinction. It seems to have occurred basically by a process of poisoning of the oceans. The flowers radiate about between 65 and 135 million years ago.

Language is important because once language occurs, then we have an independent kind of information transmission from generation to generation; we get cultural transmission. That's probably about 60-100,000 years old; at least with syntax and complicated information storage. Writing is only about 6000 years old. And of course the important stuff is quite recent.

Vocabulary

1 Change the form of the word in brackets to fit the text.

This is a view of life that goes from bacteria to dinosaurs to rock and roll; and that all can be studied with 1_____ (*evolution*) principles. How do the biological 2_____ (*disciplinarian*) map onto this? Well microbiology and biochemistry try to study things that are common to all life. That means that the same 3_____ (*chemistry*) reactions that go on in bacteria go on in the human liver, and that's about one-and-a-half to four billion years old.

Genetics and cell biology study stuff that follows the evolutionary 4_____ (*invented*) of meiosis; to a large degree. There is 5_____ (*bacterium*) genetics, but eukaryotic genetics is studying things that are about 1.5 billion years old. 6_____ (*Develop*) biology and general physiology, those are multi-cellular disciplines; they 7_____ (*dependence*) upon the existence of a multi-cellular organism. That thing didn't come along until about a billion years ago. Neurobiology: you need a complex—you need cephalization—you need to have a complex 8_____ (*nerve*) system. That studies 9_____ (*phenomenon*) that are probably about 500 to 600 million years old. Same for behavior.

10_____ (*Anthropology*) are studying things that probably 11_____ (*origin*) along our branch of the tree, within the last 15 to 20 million years. So there is a temporal 12_____ (*assemble*) of biology, as a discipline, as well as there is of life, on the planet.

2 Choose the correct word from below to fill in the gap.

**within designed history natural principle molecules from
evolutionary selection gene mechanical key applies**

The 1_____ concepts from this lecture are that there are two kinds of explanation in biology. One is the proximate or 2_____ question, which is answered by studying how 3_____ and larger structures work. Those are basically physical and chemical explanations. And then there are the 4_____ questions, which is why does the thing exist; why did it get 5_____ this way? And that could be answered either through 6_____ or through history; or the best way to do it is to use both and combine those explanations.

The thing that distinguishes biology 7_____ physics and chemistry is Natural Selection. This is not a 8_____ that you can find in a physics textbook or in a chemistry textbook. This is something that is a general principle that actually 9_____ to lots of things besides biology, but it's not contained 10_____ physics and chemistry. And there is a pattern in biology that unites biology with geology and astronomy, and that's 11_____. There is an important element of historical thought in

evolutionary biology, as well as the more abstract action of 12_____ selection on designing organisms for reproductive success and shaping changes and 13_____ frequencies.

Reading coherence

3 Fill in the necessary word.

I won't always be 1_____ to tell you something astonishing in every lecture. But this is one of them. We are continuous with non-life.

Here's 2_____ I'm going to convince you of that. Think of your mother. Now think of her mother. Now think of your mother's mother's mother. Now I want you to go 3_____ a process like you've done in math where you do an inductive proof; you just go back. Back you go in time. Speed it up now. We're back at ten million. Now we're at a hundred 4_____. Now we're at a billion years. Now we're at 3.9 billion years. Every step of the 5_____ there has been a parent. 3.9 billion years ago 6_____ extremely interesting happens. You pass through the origin of life, and 7_____ is no parent anymore. 8_____ that point you are connected to abiotic matter.

This means that not only does the tree of life connect you to all the 9_____ things on the planet, 10_____ the origin of life connects you to the entire universe. That's a deep thought. Every element in your body, 11_____ is heavier than iron, and you need a number of them, was synthesized in a supernova. The planet that you're sitting on is a secondary recycling of supernova 12_____, and your bodies are constructed of that stuff, which they use in some of their most important processes.

Writing

Rearrange the jumbled text so that it is coherent

Now by the time that Darwin published his book in 1859, people thought that the world is very, very old; how old they weren't sure. We now know about four-a-half billion, but at that point, based on the rate of erosion of mountains and on the saltiness of the ocean, assuming that the ocean had been accumulating salt continuously, and that it hadn't been getting buried anywhere, which it does, people thought hundreds of millions of years.

They knew that fossils probably represent extinct species. That was Cuvier's contribution. He did it for mammal fossils in the Paris Basin. Geoffrey Saint-Hilaire had had a big debate with Cuvier about homology, and that was in 1830. By the way, it was one that many people throughout Europe followed very closely—this was a very, very key intellectual topic at the time. Basically it was about the idea that Geoffrey Saint-Hillaire had had that if my hand has five fingers then—and a bat's wing has five fingers and the fin

of a porpoise has five fingers—that that indicates that we are related because we had a common ancestor.

Then he goes to the Galapagos, and the thing that Darwin noticed is that the mockingbirds are different on the different islands. He could also see that that the marine iguanas look a bit different, and the land iguanas look different. Interestingly, he didn't notice the differences in the finches, until he got back to England and gave his collection to the British Museum, and the ornithologists at the British Museum came in and said, "Hey Darwin, do you realize that the finches on these islands are different?" And that was when he began to really see how many differences could accumulate, how rapidly, when you take a migrant from Central America and put it on an isolated archipelago.

At that point, if you were to ask a well-educated person living in a Western culture how old the world is, they would say, "Oh thousands of years." And if you were to ask them, "Well, where did all these species on the planet come from?" they would say they were all created just the way they look now and they've never changed. And if you asked them, "Have there ever been any species that went extinct?" they would say, "No, everything that was created is still alive and can be found somewhere on the planet."

And we now know that organisms are in competition really essentially not just over food resources, they are in competition over anything that will get their genes into the next generation. That can be competition for mates, for nesting sites, for food. So the idea of natural selection comes to him in 1838; it's in his notebooks in 1838.

They thought that adaptations were produced by divine intervention. They did not think that there was a natural process that could produce anything that was so exquisitely designed as your eye. We now know that your eye is in fact very badly designed - it's got a blind spot, and the nerves and the blood vessels are in front of the retina. The light has to go through the nerves and the blood vessels, to get to the retina. The octopus has a much better eye.

Then of course we have the idea that adaptations are produced by natural selection; and we owe that to Darwin. This is one of the most important ideas about the nature of life, and therefore about the human condition, that's ever been published, and I strongly recommend, if you have a chance, to read *The Origin of Species*. Darwin actually was quite a good writer. It's Victorian prose, so it's a little bit like reading Dickens.

Where did this idea of evolution come from? Well, there are always ideas. You can go back to Aristotle and find elements of evolutionary thought in Aristotle. But really it's a nineteenth century idea, and in order to see how it

developed let's go back to about 1790 or 1800 at the end of the Century of the Enlightenment.

Now the stimulus that he has is in part from Charles Lyell, the geologist, who had discovered deep time, and that convinced Darwin that there would've been enough time. He stops in Argentina. In the banks of a river in Argentina he can see giant fossil armadillos, and then right on top of that same bank he can see the current armadillos walking around, up on top of the bank. There they are; the live ones are right above the fossil ones. They look similar—but they're not the same. So there's some connection there.

How did he come to it? Well Darwin was a med school dropout. Went to Edinburgh, didn't like med school; loved beetles and became passionate enough as a naturalist to become known as a guy who might be a good fellow to have on an expedition. The British Admiralty was sending Fitzroy around the world to do nautical charts and Darwin got on the ship. So Darwin sets off. He's 22 years old. He's set a clear goal. The goal is to solve one of the most pressing problems that biology has at that time: where do species come from?

He gets on a horse in Chile and he rides up into the Andes and he sees marine fossils lifted thousands of feet above sea level; clearly some dynamic process is going on that had lifted those marine fossils up. He doesn't know about continental drift yet—but there the fossils are.

He reads the Reverend Malthus's book on population growth, which came out in 1798. Malthus said basically that populations grow exponentially but agriculture grows linearly. Therefore, populations will always outstrip their resource base. This convinced Darwin that all organisms are in a competitive struggle for resources.

When Alexander von Humboldt, who was certainly a creature of The Enlightenment, sets out to explore South America, he thinks that he might encounter some of those strange fossils, that the French have been turning up in the Paris Basin, on top of Tepuis in Venezuela. He really thought that there was a lost world. Of course, Arthur Conan Doyle later wrote a novel about that. But these guys actually thought, "Hey, I go to Venezuela or I go to the Congo, I might meet a brontosaurus."

Lesson 2

Values and Opinions on Belief

Speaking

1. Is religion genetic?
2. Do beliefs determine our conduct, or our conduct shapes our beliefs?
3. Religions give simple answers to difficult questions.
4. Religion is the form of social discipline and transfer of experience.

Reading

Religion and Human Behavior

Does life have meaning? What gives it meaning? Why do we act the way we do? What is the best way to live? How can we be happy? How can we find peace?

These are questions that people have **struggled with** throughout history. Philosophers, psychologists, sociologists, and physicists are among the many thinkers who have tried to give us answers. We look for answers within ourselves, but few are satisfactory. In the end, it is religion that gives most of the world answers to these questions.

Hundreds of religions exist in the world, yet all religions try to answer the same questions. Every religion teaches basic ideas that help humans understand their nature and their behavior. Every religion describes two sides of human nature—the **animal and the divine**. It is these **opposing sides** that cause conflicts. Every religion gives people a method that they can follow to resolve the conflicts. All religions have a goal, which is in one form or another, the transformation of humans from the animal to the divine. This transformation to inner peace is **common to** all religions, though it has many names: **nirvana, heaven, salvation**.

All cultures in the world have **religious beliefs**. For that reason, every part of life is affected by religions, whose teachings offer guidelines on ways to live.

Listening

As you listen, fill in the gaps:

Religion is very important _____ world's people. Almost everyone believes in a religion. There are _____ religions. The biggest ones are Buddhism, Christianity, Islam and Hinduism. There are _____, like Sikhism and Judaism. I think there are two kinds of religion. _____ that believe in God, and _____ in different gods. Some religions worship animals or godlike figures that look like elephants. _____ I don't understand about religion. They all tell us to respect people and that the _____ is to kill another person, but most wars in history have been _____ religion. What do religious people say about that?

Religion in the UK

Read the text; make sure you know the translation of the words in italics.

The vast majority of people in Britain do not regularly *attend religious services*. Many do so only a few times in their lives. Most people's everyday language is no longer, as it was in previous centuries, enriched by their knowledge of *the Bible* and the English Book of Common *Prayer*. It is significant that the most familiar and well loved English translation of the Bible, known as the King James Bible, was written in the early XVII century and that no later translation has achieved similar status.

It therefore seems that most people in Britain cannot strictly be described as *religious*. However, this does not mean that they have no *religious or spiritual beliefs* or inclinations. Surveys have suggested that nearly three-quarters of the population believe in God and between a third and a half believe in *concepts* such as *life after death, heaven and hell* (and that half or more of the population believe in *astrology, parapsychology, ghosts and clairvoyance*). In addition, a majority approve of the fact that *religious instruction* at state schools is compulsory. Furthermore, almost nobody objects to the fact that the Queen is queen "*by the grace of God,*" or the fact that she, like all previous British monarchs, was crowned by a religious figure (the *Archbishop of Canterbury*) in a church (Westminster Abbey) and that the British national anthem (God Save Our Queen) *invokes God's help* in protecting her.

The general picture, as with so many aspects of British life, is of a general tolerance and passive approval of the status quo. The majority attitude towards *organized religion* is rather similar to that towards the monarchy. Just as there is no serious republican movement in the country, so there is no widespread *anti-clericalism*. And just as there is no royalist movement either, so most people are not active participants in organized religion, but they seem to be glad it is there!

Find the words from the text to fit the definitions:

1. an idea, a theory
2. special ceremonies in church
3. a person devoted to a religion
4. a movement against religion
5. a petition to God
6. extrasensory sight or perception
7. teaching religion
8. the God allowed it
9. churches and established denominations

Text cohesion. Reading exercise.

Find below the correct sentence to fill the gap. Gap 1) is done for you as an example.

THE PROBLEM WITH NEUROTHEOLOGY
IS THAT IT CONFUSES SPIRITUAL EXPERIENCES – WHICH FEW BELIEVERS ACTUALLY HAVE — WITH RELIGION. HOWEVER ONE

MYSTERY UNLIKELY EVER TO BE RESOLVED IS WHETHER OUR
BRAIN WIRING CREATES THE IDEA OF GOD OR WHETHER GOD
CREATES OUR BRAIN WIRING

BY KENNETH L. WOODWARD

Brain scans of people lost in prayer or deep in meditation have revealed the neurological underpinnings of religious states such as transcendence, visions, enlightenment and feelings of awe.

Cosmic unity – parietal lobe

When the parietal lobes quiet down, a person can feel at one with the universe

Response to religious words – at the juncture of three lobes: parietal, frontal and temporal. This region governs reaction to language

Sacred images –temporal lobe

The lower temporal lobe is involved in the process by which images, such as candles or crosses, facilitate prayer and meditation

Religious emotions – temporal lobe

The middle temporal lobe is linked to emotional aspects of religious experience, such as joy and awe

Skeptics used to argue that anyone with half a brain should realize there is no God. Now scientists are telling us that one half of the brain, or a portion thereof, is “wired” for religious experiences. 1)

a) _____ It tells us new things about the circuits of the brain, perhaps, but nothing new about God. The chief mistake these neurotheologians make is to identify religion with specific experiences and feelings. Losing one's self in prayer may feel good or uplifting, but these emotions have nothing to do with how well we communicate with God. In fact, many people pray best when feeling shame or sorrow, and the sense that God is absent is no less valid than the experience of divine presence. The sheer struggle to pray may be more authentic than the occasional feeling that God is close by, hearing every word. Very few believers have experienced what Christian theology calls mystical union with God. 2)

Neurotheologians also confuse spirituality with religion. But doing the will of God— or following the dharma— involves much more than prayer and meditation. To see Christ in the person of an AIDS victim or to really

love one's enemy does not necessitate a special alteration in the circuits of the brain. Nor does the efficacy of a eucharistic celebration depend on the collective brain waves of the congregation. In short, religion comprehends a whole range of acts and insights that acknowledge a transcendent order without requiring a transcendent experience.

3) _____ But such peak moments need not be religious. William Wordsworth found release from self in nature, where his spirit "Rolled round in earth's diurnal course/With rocks and stones and trees." A very different poet, Walt Whitman, escaped his individual self by merging imaginatively with the whole of democratic America— and everybody in it. What else is a rock concert but an assault on all the senses so that individual identities can dissolve into a collective high?

According to neurotheologians, evolution has programmed the brain to find pleasure in escaping the confines of the self. Some religious practices bear this out. The Bible, for instance, recommends contemplative prayer: "Be still and know that I am Lord." 4)

_____ Here, it seems, religious discipline involves a rewiring of the brain so that pain *and* pleasure can be transcended.

In every spiritual tradition, getting free of the self is primarily an ethical imperative. To "love your neighbor as yourself" as Jesus commanded, requires an extraordinary effort of self-transcendence. Indeed, most nonneurological theologians would argue that it can't become a habit of the heart without the assistance of divine grace. Great Christian mystics like Teresa of Avila regarded their raptures as special gifts of God. But they also understood that such experiences could become occasions for pride and spiritual self-indulgence. That's why the mystics taught that love of neighbor must always take precedence over even the most intimate communion with God in prayer. To this day, in fact, Catholic candidates for sainthood are measured by their charity, not their mystical experiences. 5) _____

Science, of course, does not deal with the immaterial (though aspects of modern physics come pretty close). The most that neurobiologists can do is correlate certain experiences with certain brain activity. To suggest that the brain is the only source of our experiences would be reductionist, ignoring the influence of other important factors, such as the will, the external environment, not to mention the operation of divine grace. 6)

_____ Like Saint Augustine, who lived 15 centuries before we discovered that the brain makes waves, the religious mind intuits that "Thou has made us for Thyself, O Lord, and our hearts are restless till they rest in Thee."

But when sensory information is restricted, as happens during meditation or prayer, people are "more likely to misattribute internally generated thoughts to an external source," suggests psychologist Richard Bentall of the University of Manchester in England in the book "Varieties of Anomalous Experience."

Stress and emotional arousal can also interfere with the brain's ability to find the source of a voice, Bentall adds. In a 1998 study, researchers found that one particular brain region, called the right anterior cingulate, turned on when people heard something in the environment—a voice or a sound—and also when they hallucinated hearing something. But it stayed quiet when they imagined hearing something and thus were sure it came from their own brain. This region, says Bentall, "may contain the neural circuits responsible for tagging events as originating from the external world." 7) _____

Even people who describe themselves as nonspiritual can be moved by religious ceremonies and liturgy. 8) _____

_____ Drumming, dancing, incantations—all rivet attention on a single, intense source of sensory stimulation, including the body's own movements. They also evoke powerful emotional responses. That combination-focused attention that excludes other sensory stimuli, plus heightened emotion—is key. Together, they seem to send the brain's arousal system into hyperdrive, much as intense fear does. When this happens, explains Newberg, one of the brain structures responsible for maintaining equilibrium—the hippocampus—puts on the brakes. It inhibits the flow of signals between neurons, like a traffic cop preventing any more cars from entering the on-ramp to a tied-up highway.

9) _____ One such deprived region seems to be the orientation area, the same spot that goes quiet during meditation and prayer. As in those states, without sensory input the orientation area cannot do its job of maintaining a sense of where the self leaves off and the world begins. 10) _____ Slow chanting, elegiac liturgical melodies and whispered ritualistic prayer all seem to work their magic in much the same way: they turn on the hippocampus directly and block neuronal traffic to some brain regions. The result again is "blurring the edges of the brain's sense of self, opening the door to the unitary states that are the primary goal of religious ritual," says Newberg.

Researchers' newfound interest in neurotheology reflects more than the availability of cool new toys to peer inside the working brain. Psychology and neuroscience have long neglected religion.

11) _____ When one psychologist, a practicing Christian, tried to discuss in his introductory psych book the role of faith in people's lives, his publisher edited out most of it—for fear of offending readers. The rise of neurotheology represents a radical shift in that attitude. And whatever light science is shedding on spirituality, spirituality is returning the favor: mystical experiences, says Forman, may tell us something about consciousness, arguably the greatest mystery in neuroscience. "In mystical experiences, the content of the mind fades, sensory awareness drops out, so you are left only with pure consciousness," says Forman. "This tells

you that consciousness does not need an object, and is not a mere byproduct of sensory action."

12) _____ They may trace a sense of transcendence to *this* bulge in our gray matter. And they may trace a feeling of the divine to *that* one. But it is likely that they will never resolve the greatest question of all—namely, whether our brain wiring creates God, or whether God created our brain wiring. Which you believe is, in the end, a matter of faith.

With ANN F. UNDERWOOD

a) *But whether this evolving “neurotheology” is theology at all is doubtful.*

b) *When it is inappropriately switched on, we are fooled into thinking the voice we hear comes from outside us.*

c) *For all the tentative successes that scientists are scoring in their search for the biological bases of religious, spiritual and mystical experience, one mystery will surely lie forever beyond their grasp.*

d) *Despite its centrality to the mental lives of so many people, religion has been met by what David Wulff calls “indifference or even apathy” on the part of science.*

e) *Nor, for that matter, have many Buddhists experienced the “emptiness” that the Buddha identified as the realization of “no-self.”*

f) *The result is that certain regions of the brain are deprived of neuronal input.*

g) *On the other hand, most of us have at one time or another experienced the dissolution of the boundaries of the self— and a corresponding sense of being at one with the cosmos.*

h) *Similarly, Buddhist bodhisattvas are distinguished by their compassion, not their spiritual athleticism.*

i) *Even so, it is hard to imagine a believer in the midst of mystical transport telling herself that it is just her neural circuits acting up.*

j) *But in the yogic traditions of India, where overcoming the boundaries of the self is central to spirituality, severe ascetic practices like fasting for weeks and mortifying the flesh are far from pleasurable.*

k) *That's why ritual and liturgy can bring on what Newberg calls a "softening of the boundaries of the self"—and the sense of oneness and spiritual unity.*

l) *Hence the power of the ritual.*

WHY DO WE MAKE RULES?

Speaking

Think about your society, and look at the following questions:

a) *Discuss any 'unwritten rules' that apply to the contexts below.*

work / business

public transport / cars

restaurants / food

homes / domestic life

social / leisure time

shopping / street life

b) *What happens when people break the rules?*

Are there any written, or explicitly spoken, rules concerning social behaviour? e.g. train companies ask passengers to let people get off a train before boarding.

Are there any rules that should be written to improve social behaviour?

Reading

Answer the questions:

What are the main claims made in paragraphs 1 and 2?

Do you agree with them?

In paragraphs 3 and 4, which three phrases describe the types of rules under investigation?

Which definitions of the word rule do these examples match?

The human species is addicted to rule making. Every human activity, without exception, is hedged about with complex sets of rules and regulations, stating precisely when, where, with whom and in what manner the activity may be performed. Animals just do these things; human beings make an almighty song and dance about it. This is known as 'civilisation'.

If you think about it, we all use difference in rules as a principal means of distinguishing one culture from another. The first thing we notice when we go on holiday or business abroad is that other cultures have 'different ways of doing things', by which we usually mean that they have rules about, say, food, mealtimes, dress, greetings, hygiene, hospitality, joking, status-differentiation, etc. which are different from our own rules about these practices.

The object of my observational research was to identify the dissimilarities in rules governing English behaviour, the unofficial codes of conduct that cut across class, age, sex, region, sub-cultures and other racial boundaries.

Most people obey the unwritten rules of their society instinctively, without being conscious of doing so. For example, you automatically get dressed in the morning without consciously reminding yourself there is an unspoken rule of etiquette that prohibits going to work in your underwear.

Vocabulary

1 Complete the gaps in the statements with the words from below. In groups, discuss your opinion of each statement.

staus culture economic laws policy public

1. _____ develops men and causes great social and cultural change.
2. People's friends and relationships are determined by their social_____.
3. Government_____directly reflects social attitudes.
4. _____ protest is futile as it never achieves its aims.
5. Youth_____has little impact on mainstream society.
6. Relatively few_____affect the public's general social behaviour.

3a Match 1-9 with a-i to make complete verb phrases.

- | | |
|------------|--------------------------|
| 1 to feel | a) sth for granted |
| 2 to mind | b) attention to yourself |
| 3 to make | c) sth is amiss |
| 4 to draw | d) your own business |
| 5 to wash | e) sth to a halt |
| 6 to take | f) sth inside out |
| 7 to bring | g) your dirty linen |
| 8 to know | h) your responsibilities |
| 9 to shirk | i) a scene |

3b. Choose the best verb phrases for the situations below.

1. She keeps asking me where I got the money from, I wish she would just_____.
2. If you decide to become team captain, you can't be lazy and _____.
3. I know you're angry, but please don't_____, not here in the library.
4. You have to work at a relationship; you can't just_____love_____.
5. I_____, but I'm not sure exactly what. Let's ask Sarah if she knows about any problems.

Lesson 3

The problem of evil

Questions for discussion:

- Is there an Evil inbuilt in the structure of the world?
- Is science a menace to morality?
- If there isn't evil, how do we know what's good?
- Does the concept of Hell agree with modern ethical values?

Reading

Read the text, translate and memorise the words in bold

What if Hell Doesn't Exist?

As part of a series on peacemaking, in late 2007, Pastor Rob Bell's Mars Hill Bible Church put on an art exhibit about the search for peace in a broken world. An artist in the show had included a quotation from Mohandas Gandhi. Hardly a **controversial** touch, one would have thought. But one would have been wrong.

A visitor to the exhibit had stuck a note next to the Gandhi quotation: "Reality check: He's in hell."

Bell was struck.

/Really?/ he recalls thinking.

/Gandhi's in hell?/

/He is?/

/We have confirmation of this?/

/Somebody knows this?/

/Without a doubt?/

/And that somebody decided to take on the responsibility of letting the rest of us know?/

So begins Bell's **controversial** new best seller, /Love Wins: A Book About Heaven, Hell, and the Fate of Every Person Who Ever Lived./ Works by Evangelical Christian **pastors** tend to be **pious** or at least on **theological** message. The standard Christian view of **salvation** through the death and **resurrection** of **Jesus of Nazareth** is summed up in the **Gospel** of John, which promises "eternal life" to "whosoever believeth in Him." Traditionally, the key is the acknowledgment that Jesus is the Son of God, who, in the words of the **ancient creed**, "for us and for our salvation came down from heaven ... and was made man." In the

Evangelical ethos, one either accepts this and goes to heaven or refuses and goes to hell.

The **traditionalist** reaction is understandable, for Bell's arguments about heaven and hell raise doubts about the core of the Evangelical **worldview**, changing the common understanding of salvation so much that Christianity becomes more of an ethical habit of mind than a **faith** based on **divine revelation**. "When you adopt universalism and erase the distinction between the church and the world," says Mohler, "then you don't need the church, and you don't need Christ, and you don't need the cross. This is the tragedy of **nonjudgmental** mainline liberalism, and it's Rob Bell's tragedy in this book too."

Particularly galling to **conservative** Christian critics is that /Love Wins/ is not an attack from outside the walls of the Evangelical city but a **mutiny** from within — a **rebellion** led by a **charismatic**, popular and savvy pastor with a **following**. His style of **doctrine and worship** is clearly playing a larger role in religious life, and the ferocity of the reaction suggests that he is a force **to be reckoned with**.

Bell insists he is only raising the possibility that theological rigidity — and thus a faith of exclusion — is a dangerous thing. He believes in Jesus' **atonement**; he says he is just unclear on whether the **redemption** promised in Christian tradition is limited to those who meet the tests of the church. It is a case for living with mystery rather than demanding certitude.

From a traditionalist perspective, though, to take away hell is to leave the church without its most powerful sanction. If heaven, however defined, is everyone's ultimate destination in any event, then what's the incentive to **confess** Jesus as Lord in this life? If, in other words, Gandhi is in heaven, then why bother with accepting Christ? If you say the Bible doesn't really say what a lot of people have said it says, then where does that stop? If the verses about hell and judgment aren't **literal**, what about the ones on adultery, say, or homosexuality? Taken to their logical conclusions, such questions could undermine much of conservative Christianity.

What the Hell?

From the **Apostle** Paul to John Paul II, from Augustine to Calvin, Christians have debated atonement and **judgment** for nearly 2,000 years. Early in the 20th century, Harry Emerson Fosdick came to represent theological liberalism, arguing against the literal truth of the Bible and the existence of hell. It was time, progressives argued, for the faith to surrender its **supernatural** claims.

Bell is more at home with this expansive liberal tradition than he is with the old-time **believers** of /Inherit the Wind./ He believes that Jesus, the

Son of God, **was sacrificed** for the **sins** of humanity and that the prospect of a place of **eternal torment** seems **irreconcilable** with the God of love. Belief in Jesus, he says, should lead human beings **to work for the good** of this world. What comes next has to wait. “When we get to what happens when we die, we don’t have any video footage,” says Bell. “So let’s at least be honest that we are **speculating**, because we are.” He is quick to note, though, that his own speculation, while unconventional, is not unprecedented. “At the center of the Christian tradition since the first church,” Bell writes, “have been a number who insist that history is not tragic, hell is not forever, and love, in the end, wins and all will be reconciled to God.”

It is also true that the Christian tradition since the first church has insisted that history is tragic for those who do not believe in Jesus; that hell is, for them, forever; and that love, in the end, will envelop those who profess Jesus as Lord, and they — and they alone — will be reconciled to God. Such views cannot **be dismissed** because they are inconvenient or uncomfortable: they are based on the same Bible that liberals use to make the opposite case.

Still, the dominant view of the **righteous in heaven and the damned in hell** owes more to the artistic legacy of the West, from Michelangelo to Dante to Blake, than it does to history or to unambiguous **biblical teaching**. Neither **pagan** nor **Jewish** tradition offered a truly equivalent vision of a place of eternal torment; the Greek and Roman **underworlds** tended to be morally neutral, as did much of the **Hebraic** tradition concerning Sheol, **the realm of the dead**.

Like the Bible — a document that often contradicts itself and from which one can construct sharply different arguments — theology is the product of human hands and hearts. What many believers in the 21st century accept as immutable doctrine was first formulated in the fog and confusion of the 1st century, a time when the followers of Jesus were baffled and overwhelmed by their experience of losing their Lord; many had expected their **Messiah** to be a Davidic military leader, not an **atoning human sacrifice**.

When Jesus spoke of the “kingdom of heaven,” he was most likely referring not to a place apart from earth, one of clouds and harps and an eternity with your grandmother, but to what he elsewhere called the “kingdom of God,” a world redeemed and renewed in ways beyond human imagination. To 1st century ears in ancient Judea, Jesus’ talk of the kingdom was centered on the imminent arrival of a new order marked by the defeat of evil, the restoration of Israel and a general

resurrection of the dead — all, in the words of the prayer he taught his disciples, “on earth.” (See pictures of spiritual healing around the world.)

There is, however, no escaping the fact that Jesus speaks in the **Bible** of a hell for the “**condemned**.” He sometimes uses the word /**Gehenna**,/ which was a valley near Jerusalem associated with the sacrifice of children by fire to the Phoenician god Moloch; elsewhere in the **New Testament**, writers (especially Paul and John **the Divine**) tell of a **fiery pit** (**Tartarus or Hades**) in which **the damned** will spend eternity.

And yet there is a contrary **scriptural** trend that suggests, as Jesus puts it, that the gates of hell shall not finally prevail, that God will wipe away every tear — not just the tears of Evangelical Christians but the tears of all. In Colossians, Paul writes that “God was pleased to ... reconcile to himself all things, whether things on earth or things in heaven.” So is it heaven for Christians who say they are Christians and hell for everybody else? What about babies, or people who die without ever hearing the **Gospel** through no fault of their own? Who knows? Such tangles have consumed Christianity for millennia and likely will for millennia to come.

What gives the debate over Bell new significance is that his message is part of an intriguing scholarly trend unfolding simultaneously with the cultural, generational and demographic shifts made manifest at Mars Hill. For these new thinkers, heaven can mean different things. In some biblical contexts it is a synonym for God. In others it signifies life in the New Jerusalem, which, properly understood, is the reality that will result when God brings together the heavens and the earth. In yet others it seems to suggest moments of intense **human communion** and **compassion** that are, in theological terms, glimpses of the **divine love** that one might expect in the world to come. One thing heaven is not is an exclusive place removed from earth. This line of thinking has implications for the life of **religious communities** in our own time. If the earth is, in a way, to be our eternal home, then its care, and the care of all its creatures, takes on fresh urgency.

The history of Evangelism is in part the history of media and methods: Billy Sunday mastered the radio, Billy Graham television; now churches like Bell’s are at work in the digital vineyards of downloads and social media. Demography is also working in Bell’s favor. “For me, **Hindus** and **Muslims** were the people we sent **missionaries** off to in places we called ‘Arabia,’” Mouw says. “Now that diversity is part of **the fabric of daily life**. It makes a difference. My generation wanted truth — these

are folks who want authenticity. The whole **judgmentalism** and harshness is something they want to avoid.”

Fair enough, but let’s be honest: religion **heals**, but it also kills. Why support a **supernatural belief system** that, for instance, **contributed to** that minister in Florida’s burning of a **Koran**, which led to the deaths of innocent U.N. workers in Afghanistan?

Reading comprehension

Choose the correct variant:

- Rob Bell is
- a) Catholic priest
 - b) Evangelical pastor
 - c) Anglican vicar

The standard Christian view of salvation is summed up in the

- a) Gospel of John
- b) 10 Commandments
- c) Book of Revelation

The words “it is not an attack from outside the walls of the Evangelical city” mean the dissention was born inside

- a) Protestantism
- b) it issued from Vatican
- c) civil war

The doctrine of atonement and judgement

- a) has been accepted unanimously
- b) has different meaning for different Christian denominations
- c) has long been controversial

The dominant view of the righteous in heaven and the damned in hell was established mainly due to

- a) Biblical tradition
- b) tradition of Greek and Roman antiquity
- c) Western European concept

For new thinkers heaven may mean many things, but it is definitely not:

- a) New Jerusalem
- b) an exclusive place removed from earth
- c) the kingdom of God

When the author says “now churches like Bell’s are at work in the digital vineyards” he means:

- a) they use Internet as the main means to spread their message
- b) they use radio, television and computers
- c) they preach on social networks

Answer the questions:

1. Why does Bell say that “the faith of exclusion is a dangerous thing?”
2. What dangers do traditionalists see in the new reading of the Bible?
3. Why does Bell find the concept of hell irreconcilable with Christ?
4. Why is the name Gehenna used as a synonym to hell?
5. What, according to the author, was manifested at Mars Hill?

The Problem of Evil

The problem of evil (or argument from evil) is the problem of reconciling the existence of the evil in the world with the existence of an omniscient (all-knowing), omnipotent (all-powerful) and perfectly good God.

Christianity claims both that God created the world and that he sustains it.

Christianity claims that God knows all things and is capable of all feats.

Christianity claims that God is perfectly good, and wants only the best for his Creation. If each of these claims is true, though, then it is difficult to see why God allows the evil in the world to persist. The evil in the world thus appears to be strong and perhaps even conclusive evidence that at least one of these central claims of Christianity is false.

Each of the four arguments from evil begins with the claim that if God existed then the world would reach a certain standard. The standard anticipated differs between the different forms of the evil named in its title “imperfection, natural evil, moral evil and unbelief” respectively would not exist in a world created and sustained by God.

In each of the arguments this claim is supported by an appeal to God’s nature (omniscient, omnipotent and benevolent). As such, it is suggested, God would know how to bring it about that the world met the anticipated standard, would be able to and would want to bring it about that the universe met the anticipated standard. If God knew how to, were able to, and wanted to do a thing, though, then surely he would do that thing.

The next step is the claim that the world does indeed contain the evil named, that the world does not reach the standard that it would reach if God existed.

The four arguments thus claim respectively that the universe is imperfect, that it contains natural evil, that it contains moral evil, and that it contains unbelief. Each argument concludes from its respective claim that God does not exist.

1 Derivatives

Complete the text by changing the word in capitals at the end of the line into a suitable form to fill the gap.

The Argument from Imperfection

The first task for an advocate of the argument from imperfection

is to establish that if God 1_____ the world then the world would
CREATION

be perfect. This at least appears 2_____ from God's perfection.
FOLLOWER

The 3_____ of a creator is proportional to the goodness of that
GOOD

which he creates. A carpenter who makes a 4_____ table with uneven
FRAGILITY

legs is a bad carpenter.

Against this line of thought, 5_____ argue that there is no best
OBJECT

possible world, that every possible world could be improved in some
respect, and so that the idea that a perfect Creator would 6_____
NECESSITY

create a perfect world is false.

The second task for an advocate of the argument from imperfection
is to establish that the world is not perfect. This 7_____, of course, is
CLAIMANT

8_____ plausible; there are many ways in which it might be thought
HIGH

that the world might have been better. The world might, for example,
have contained fewer wars, or fewer 9_____ diseases, or

PLEASE

10_____ volcanic eruptions. The world, the advocate of the argument
DESTROY

from imperfection will maintain, contains multiple defects, each of which
establishes at least the imperfection of its Creator, and probably
the non-existence of God.

2 Choose the correct variant:

The Argument from Unbelief

The argument from unbelief (or nonbelief) is a specific form of the argument from evil developed by Theodore Drange. If God exists and is as Christianity takes him to be, the argument from unbelief suggests, then he wants us all to believe both in his existence and in the **1 manuscript/ gospel/ psalm**. For Christianity holds that God cares deeply for each of us, and that it is of vital importance that we so believe; according to Christianity, our **2 immortal/ perennial/ eternal** fate depends on whether or not we believe in God and trust in the cross for **3 propitiation/ salvation/ prophesy**. Further, the argument continues, if the Christian God exists then he knows how to bring it about that we all have these beliefs. For Christianity holds

that God is **4 omniscient/ omnipotent/ omnipresent**, and so knows for each of us what evidence it would take to convince us of these things.

Finally, advocates of the argument note, if the Christian God is omnipotent; whatever evidence it would take to convince us of these things, Christianity says, God can give us.

According to Christian **5 monotheism/ polytheism/ theism**, then, God wants to, knows how to, and is able to cause everyone to believe in his existence and in the gospel. There are people, however, who believe in neither of these things. God's failure to make himself known, it seems, can only be explained by the hypothesis that he does not exist.

A natural response to this argument appeals to the importance of **6 faith/ belief/ creed**, and to the necessity of uncertainty for faith. Faith is traditionally seen by Christianity as a **7 good/ goodness/ virtue**. Arguably, though faith is only possible if the evidence for God's existence leaves room for doubt.

There are several different ways of understanding the relationship between faith and **8 mind/ intellect/ reason**, but on the traditional Thomist **9 perception/ conception/ declaration** of faith, irresistible evidence makes faith impossible. This is because, on this view, faith can only result when we choose to believe. If our evidence is utterly convincing, then choice is impossible; we are **10 compelled/ persuaded/ ordered** to believe. God therefore has reason to give us only imperfect evidence of his existence, to remain at least partially hidden from us. If our evidence for God's existence is resistible, though, then it is possible, even likely, that some will resist it, that there will be unbelievers.

The Argument from Natural Evil

3 Choose the proper word to fill the gaps:

**benevolence earthquakes abuse St Augustine evil demonic deceit
will fault angels tsunamis justified murder fires theft sin
assumptions retribution**

There are two kinds of evil in the world: moral and natural; both appear to exist in abundance. Moral evils are those evils that are freely inflicted upon humankind by humankind: 1_____, 2_____, 3_____, etc.; they result from the choices of free agents. Natural evils are those evils that occur as the result of natural processes: 4_____, forest 5_____, 6_____, etc. The problem of natural 7_____ is thus the problem of explaining why God allows this latter kind of evil to occur.

The most common response to the problem of evil "the free 8_____ defence" holds that God rightly chose to create humankind free, and that evil is the result of our 9_____ of that freedom. Evil is not God's 10_____; it is ours. This defence applies only to moral evil; natural evil does not result

from the choices of free agents, and so cannot be 11_____ in this way. Natural evil therefore poses a greater threat to belief in God than moral evil.

Two generic responses to the problem of evil question its fundamental 12_____. The first denies that God is morally good, the second denies that evil exists. There is, however, an alternative response to the problem of natural evil, associated with 13_____, that grants that evil exists but denies that any of it is natural.

The defence works by suggesting that so-called “natural evils” earthquakes, epidemics, etc.” are the work of 14_____ forces, fallen 15_____. They are, it is suggested, no less the result of free will than evils normally classified as moral. This defence thus effectively denies the existence of natural evils, holding that all evils result from the choices of free agents, and so that all evils are moral.

Another attempt to solve the problem of natural evil sees such evil as a just punishment for 16_____ inflicted upon us by God. We cannot complain about natural evils, on this view, because we deserve all that we get. Natural evil, unpleasant though it may be, belongs in the world; it makes the world more just.

The chief difficulty with this view is that nature is a crude instrument of 17_____; it often smites hardest those that have sinned least. The argument may succeed in casting some doubt on the supposition that a good God would eliminate all suffering; God’s 18_____ and his justice may exist in tension, and a benevolent God may sometimes will just punishment.

4 Open the brackets, use infinitive or ing-form:

Good Cannot Exist Without Evil

Perhaps a more robust approach to 1_____ (resolve) the problem of natural evil is that which holds that it is necessary for the universe 2_____ (contain) some evil in order 3_____ (it, contain) some good. Good and evil, according to this position, are relative terms; one cannot have one unless one has both. If this is correct, if it is impossible for one 4_____ (exist) without the other, then perhaps God was justified in 5_____ (create) a world containing evil because it was only by 6_____ (do) so that he could create a world containing good.

Evil Makes Higher-Order Goods Possible

Even if the previous suggestion is resisted, a similar argument might 7_____ (propose), holding that evil is necessary in order for certain types

of good 8_____ (exist). Specifically, the existence of evil allows for goods that oppose evil, 9_____ (open) up possibilities for bravery, for compassion, and for mutual dependence, for example. These higher-order goods could 10_____ (exist, not) otherwise. A world without suffering would lack such goods as these, and would therefore be inferior.

5 Use the necessary preposition in the gap:

The Argument from Moral Evil

Moral evil is evil that is wilfully inflicted 1_____ the world by free moral agents. The problem of moral evil is the problem of reconciling the existence of such evil 2_____ the existence of an omniscient, omnipotent and benevolent God. Surely if such a God existed, it is argued, he would prevent such evil 3_____ occurring.

By far the most common response 4_____ the argument from moral evil is the free-will defence. The free-will defence is the argument that as moral evil results 5_____ the choices of free moral agents its existence is consistent 6_____ the existence of God. The argument works in two ways. First, it holds that as moral evil is caused by the choices of free moral agents, God is not responsible 7_____ moral evil. Second, it holds that as it is more important that free moral agents do exist than it is that moral evil does not exist, God did well in creating such agents even though he knew that they might choose to abuse their freedom.

A second counter to the argument from moral evil makes use 8_____ some of the principles of the moral argument for God's existence. If God does not exist, this counter goes, then there would be no moral standards; everything would be permitted. If that were the case, though, then there could be no moral evil, for there would be no moral laws that could be violated.

The fact that moral evil exists, then, far 9_____ disproving the existence of God, actually proves it. Just as the theist faces the problem of reconciling the existence of evil with the existence of God, so the atheist is faced 10_____ the problem of reconciling the existence of morality with the non-existence of God.

Lesson 4-5

Ethical choices the science faces

Cloning and stem-cell research

Listening

Decide whether the following statements are True or False:

1. American research on stem cells is slowed down by political and religious

- controversies.
2. Chinese researchers don't work with human stem cells.
 3. In the USA it is much easier to get access to foetus tissues.
 4. China is going to be a dominant force in the field of stem cell research.
 5. A new genetic engineering centre in China gets 30% funding from the government and 70% from private investors.
 6. China's regulations on stem cell research are too lax.
 7. Patients who weren't cured in the USA come to China.
 8. Confucian culture views using human foetus tissue for stem cell treatment as unethical.
 9. The Chinese hope to get a Nobel peace prize for their research.
 10. Regenerative medicine includes stem cell treatment.

Reading

1 Read the text carefully and decide which sentence (A—F) best fits each gap (1-5). There is one sentence that you do not need.

\$150,000 for a pet dog, just like your last one

Snuppy: the first cloned dog in the world

A Californian dog-lover has agreed to pay 5150,000 to have her dead pit bull recreated in the world's first commercial pet cloning project. **1**_____ South Korean scientists will now use the tissue to attempt to create an exact replica of the pet.

RNL Bio, based in Seoul, said it is already working on the order. The work will be carried out by a team of Seoul National University (SNU) scientists under the direction of professor Lee Byeong-chun, a key member of the research team headed by disgraced stem cell scientist Hwang Woo-suk.

2_____ But the SNU team was successful in creating the world's first dog clone, an Afghan hound named 'Snuppy'.

Bernann McKunney is the American woman who really misses her dead dog. **3**_____ Specific breeds of pit bull are banned or restricted in several countries including the UK, New Zealand and Canada, but not in the USA. Cho Seong-ryul, RNL's marketing director, said the company's success rate for producing dogs by cloning was high with around one out of every four surrogate mother dogs producing cloned puppies. **4**_____ The scientists and Mrs McKunney are hoping that at least one of these will develop into a healthy puppy.

If successful, this will mark the first time that a dog has been cloned in a commercial contract,' Cho said.' But it won't be the last. Cloning is fast becoming an industry .''

5_____ RNL Bio plans eventually to focus on cloning not only pets, but also special dogs like those trained to sniff out bombs

A She is thought to have become especially attached to it after the pit bull saved her life when another dog attacked her.

B The latter achieved notoriety last year when his well- publicised breakthroughs in cloning human stem cells were discovered to be fake.

C Increasing demand means the cost for cloning a dog may come down to less than \$50,000.

D The dog, named Booger, died a year and a half ago but his owner kept part of the dog's ear in cold storage.

E Nevertheless, some people are worried that human cloning is an inevitable development.

F In this case, cells have been extracted from Booger's ear tissue and inserted into the eggs of living dogs.

2 Complete the text. Write one word only in each gap.

Many people regard the possibility of human clones _____ horror and see it as a sign that scientific progress is spiralling_____ of control. Although this initial revulsion is understandable, it is perhaps taking things on extreme. After all, human clones already exist in nature: they're called identical twins, and though some people find identical twins unnerving, few are actually disgusted by the very idea of them.

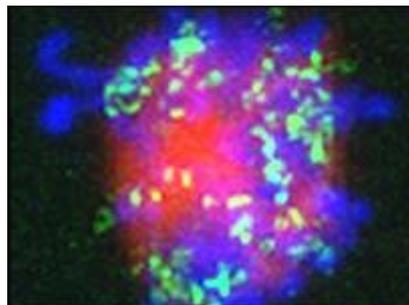
It's all _____ easy to dismiss cloning _____ the work of mad scientists trying to create Frankenstein-like monsters. This image has very little to _____ with the truth. _____ reality, the aim of scientists is to find new ways to combat disease and repair the human body. Some scientists have suggested that by cloning our own cells, we could halt or maybe reverse the ageing process. The ultimate prize would be a kind of immortality. _____ it would be a good thing in practice is another question.

3 Read the following statement. Do you agree or disagree with it? Write a short essay with two arguments for or counter-arguments.

Human cloning 'flawed'

Human cloning may never be possible because of a quirk of biology.

Scientists in the United States say hundreds of attempts to clone monkeys have ended in failure.



Something goes wrong as the cell divides (*Science*)

They think the biological make-up of the eggs of primates, including humans, makes cloning almost impossible.

Cloning has been successful in several mammals, including sheep, mice and cattle, but there is increasing evidence that it does not work in all species.

The research, reported in the journal *Science*, casts further doubt on efforts by a handful of mavericks to clone humans.

Clonaid, a company created by a UFO cult known as the Raelians, claims to have already cloned several babies. It has produced no evidence to substantiate these claims.

Meanwhile, controversial reproductive scientist Panayiotis Zavos has published a picture of what he claims is "the first human cloned embryo for reproductive purposes".

Grammar

Use gerunds, participles or infinitives in the gaps:

Misguided science

The majority of scientists agree that attempts 1_____ (clone) a human baby are dangerous and misguided.

Many cloned animals have been born ill or 2_____ (deform) and successful births are few and far between.

Researchers at the University of Pittsburgh School of Medicine used the method pioneered on Dolly the sheep 3_____ (try) 4_____ (clone) rhesus macaque monkeys.

They were unable 5_____ (establish) a single pregnancy after hundreds of attempts. Other groups have also tried and failed 6_____ (clone) monkeys.

The obstacle appears 7_____ (be) something 8_____ (do) with the way genetic material is

parcelled up as a cell splits into two during embryonic development. Cells end up with too much, or too little DNA 9 _____ (survive).

It suggests that attempts 10 _____ (clone) other primates, even humans, may 11 _____ (doom) to failure.

"This reinforces the fact that the charlatans who claim 12 _____ (clone) humans have never understood enough cell or developmental biology 1 _____ (succeed)," team leader Dr Gerald Schatten told the journal Science.

Derivatives

Use the right form of the word in CAPITALS in the gap:

Why stem cells?

Many diseases are 1 _____ to treat. As the researchers put it
POSSIBILITY

they "cannot be cured, they can only be cared for".

Stem cells are one of the great hopes of 2 _____ because they
MEDICAL

can turn into any other type of cell - nerve, heart, bone, skin, liver etc.

Create heart cells and it might be possible 3 _____ the damage
REPAIRS

from a heart attack. Insulin-4 _____ cells are destroyed in
PRODUCT

patients with type 1 diabetes, but stem cells could one day be used to grow more.

There are already 5 _____ trials taking place. The first embryonic
CLINIC

stem cell trial in Europe, testing a 6 _____ for progressive sight
TREAT

loss, has started in London.

However this does not use the 7 _____ own cells. Immunosuppressant PATIENT

drugs are likely to be 8 _____ to prevent rejection. This is why NEED
9 _____ stem cells from the body's own cells is seen as such MAKE
a gold standard of medicine.

Cryonics

The year is 1967. A British secret agent has been "frozen," awaiting the day when his arch nemesis will return from his own deep freeze to once again threaten the world. That day finally arrives in 1997. The agent is revived after 30 years on ice, and he saves the world from imminent destruction.

You'll probably recognize this scenario from the hit movie, "[Austin Powers: International Man of Mystery](#)" (1997). Cryonics also shows up in films like "[Vanilla Sky](#)" (2001), "[Sleeper](#)" (1973) and "[2001: A Space Odyssey](#)" (1968). But is it pure Hollywood fiction, or can people really be frozen and then thawed to live on years later?

*The science behind the idea does exist. It's called **cryogenics** -- the study of what happens to materials at really low temperatures. **Cryonics** -- the technique used to store human bodies at extremely low temperatures with the hope of one day reviving them -- is being performed today, but the technology is still in its infancy.*

Read the text, translate the words in bold.

Identify the author's attitude toward cryonics. Are there points for it? Against it? Do you share the author's doubts?

Would you die of boredom if you lived for ever?

Lined up in neat rows, their stainless steel sides gleaming, the huge metal cylinders **stored** in a **nondescript** office building **give** little **clue** as **to** their gruesome contents. On each vessel there is a sticker bearing the name and logo of a company called Alcor. Only the small print beneath **hints at** what its work might be 'Life Extension Foundation Since 1972/ it reads, offering a website address for those visitors who join the twice-weekly tours of Alcor's **headquarters** in Scottsdale, Arizona, and who might want to **find out** more about its highly unusual services.

Alcor is in the business of **cryonics**. For a \$135,000 fee, it will dispatch a **trained response team** when you die to drain your blood and **deep freeze** your body in one of those huge vacuum flasks of **liquid nitrogen**. The

theory is that the firm's employees will **thaw you out** and **revive you at some point in the future** when science has advanced enough **to cure you of** whatever it was you died of. And although the total number of people across the world who have **signed up for** freezing is still little more than 1,000, Alcor says its membership has increased rapidly recently.

This may be explained by the growing **conviction** among scientists that mankind is closer than ever to achieving what until now has seemed **the stuff of our wildest dreams** or worst nightmares, depending on your perspective. They think it may well be possible **to extend human life way beyond its current span** - enabling us to live many hundreds of years and perhaps even for ever.

The problem with all attempts to find the secret to longer life over the centuries has been that the human body somehow seems programmed to die. Although we generally **enjoy** much longer lives than our **forebears**, we accept that even if we avoid accident or illness, our bodies will **wear out** and we will **eventually die of** 'old age'. However, humans don't have a 'death gene' which **triggers** the ageing process; the process is the result of **malfunctioning cell reproduction**. From the immortalists' point of view, instead of being an inevitable part of human biological destiny, death is something which can be avoided if we can only **find cures for** the illnesses which threaten our lives. **Given** that we are talking about diseases such as cancer, this is a very big 'if' - but medicine's success in **eradicating** polio in the twentieth century shows how quickly today's **incurable illness** can become tomorrow's medical success story. Already, **advances in technology** are raising previously unimaginable possibilities in medical science. For example, scientists at the Wake Forest University Medical School in America are working to grow twenty different **tissues and organs**, including blood vessels and hearts, in the laboratory using **human cells**. This procedure could, one day, help **combat diseases** such as cancer, by simply replacing the diseased organs with 'spares' supplied by the **recipients'** own cells, with therefore no risk of **rejection**. In this way, humans might become much like cars - with every part replaceable and immortality guaranteed. Perhaps the real question is not **whether** eternal life will one day be possible, but whether the **quest** itself is **misdirected**. In his short story, *The Immortal*, the Argentinean writer Jorge Luis Borges writes of a man who goes in search of a river which cleanses people of death. The immortal people whom he finds there are inert and apparently miserable. Since they will live for an **infinite** number of years, they reason that everything that can happen to them will do at some point. As a result they can hardly bring themselves to move. 'I remember one who I never saw stand up,' says Borges' narrator. 'A bird had nested on his breast.'

This raises the question: what **incentive** would there be to do anything if we knew that we had an endless number of days ahead of us in which to accomplish all our goals? Indeed, would our lives have any meaning at all? As humans, we only seem able to understand our feelings when they are

balanced against opposing emotions. When we feel happy, it is in contrast to being sad; when we feel at peace, it is a respite from being anxious. How then could we feel glad to be alive, to **savour** our existence day to day, if there was no possibility that it might one day be **snatched from us**? All our emotions would become immaterial.

Open the brackets, use infinitive or –ing-form

What is Cryonics?

Cryonics is the practice of 1(preserve) human bodies in extremely cold temperatures with the hope of 2(revive) them sometime in the future. The idea is that, if someone has "died" from a **disease** that is **incurable** today, he or she can 3("frozen") and then revived in the future when a **cure** has been discovered. A person preserved this way is said 4(be) in **cryonic suspension**.

5(understand) the technology behind cryonics, think about the news stories you've heard of people who have fallen into an icy lake and have been submerged for up to an hour in the frigid water before 6(rescue). The ones who survived did so because the icy water put their body into a sort of suspended animation, 7(slow down) their **metabolism** and brain function **to the point** where they needed almost no oxygen.

Cryonics is a bit different from 8(resuscitate) after falling into an icy lake, though. First of all, it's illegal 9(perform) cryonic suspension on someone who is still alive. People who **undergo** this procedure must first be pronounced **legally dead** -- that is, their heart must 10(stop) beating. But if they're dead, how can they ever be revived? According to scientists who



perform cryonics, "legally dead" is not the same as "**totally dead.**" Total death, they say, is the point at which all brain function ceases. Legal death occurs when the heart has stopped beating, but some **cellular brain function** remains. Cryonics preserves the little cell function that remains so that, theoretically, the person can be resuscitated in the future.

Open the brackets, use infinitive or –ing form:
How is Cryonics Performed?

If you decide 11(have) yourself (place) in cryonic suspension, what happens to you? Well, first, you have 12(join) a cryonics facility and pay an annual membership fee (in the area of \$400 a year). Then, when your heart stops 13(beat) and you are pronounced "legally dead," an emergency response team from the facility **springs into action**. The team stabilizes your body, 14(supply) your brain with enough oxygen and blood 15(preserve) minimal function until you can be transported to the suspension facility. Your body is packed in ice and **injected with** heparin (an **anticoagulant**) 16(prevent) **your blood from** 17(clot) during the trip. A medical team awaits the arrival of your body at the cryonics facility.

Once you are transported to the cryonics facility, the actual "freezing" begins. Cryonics facilities can't simply put their patients into a vat of **liquid nitrogen**, because the water inside their cells would freeze. When water freezes, it **expands** -- this would cause the cells (simply **18shatter**). The cryonics team must first remove the water from your cells and replace it with a glycerol-based chemical mixture 19(call) a **cryoprotectant** -- a sort of human antifreeze. The goal is 20(protect) **the organs and tissues from forming ice crystals** at extremely low temperatures. This process, called vitrification (deep cooling without freezing), puts the cells into a state of suspended animation.

Fill in the gaps with transitional words given below:

so once that if the next step who

1 _____ the water in your body is replaced with the cryoprotectant, your body is cooled on a bed of dry ice until it reaches -130 C (-202 F), **completing** the vitrification process. 2 _____ is **to insert** your body into an individual container 3 _____ is then placed into a large metal tank **filled** with liquid nitrogen at a temperature of around -196 degrees Celsius (-320 degrees Fahrenheit). Your body is stored head down, 4 _____ if there were ever a leak in the tank, your brain would stay **immersed in** the freezing liquid.

Cryonics isn't cheap -- it can cost up to \$150,000 **to have your whole body preserved**. But for the more frugal futurists, a mere \$50,000 will preserve your brain for perpetuity -- an option **known as neurosuspension**. Hopefully for those 5 _____ have been preserved this way, technology will **come up with** a way **to clone** or **regenerate** the rest of the body.



6 _____ you **opt for** cryonic suspension, expect to have some company. Several bodies and/or heads **are often stored** together in the same liquid-nitrogen-filled tank.

Has Anyone Been Preserved Using Cryonics?

Fill in ONE missing word:

Critics say companies 1 _____ perform cryonics are simply bilking people out of their money with the promise of an 2 _____ they cannot deliver. Even scientists who perform cryonics say they 3 _____ successfully revived anyone -- and don't expect 4 _____ be able to do so in the near future. One of the problems is that, if the warming process isn't done at exactly the right

speed, the cells 5 _____ turn to ice and shatter.

Even 6 _____ people in cryonic suspension haven't yet been revived, living organisms can be -- and have been -- brought back from a dead or near-dead 7 _____. Defibrillators and CPR bring accident and heart attack victims 8 _____ from the dead on an almost daily basis. Neurosurgeons often cool patients' bodies 9 _____ they can operate on aneurysms -- enlarged blood vessels in the brain -- without 10 _____ or rupturing them. Human embryos that are frozen in fertility clinics, defrosted and implanted in a mother's uterus grow into perfectly normal human beings.

Cryobiologists are hopeful that a new technology 11 _____ nanotechnology will make revival a reality 12 _____. Nanotechnology uses microscopic machines to manipulate single atoms -- the tiniest units of an organism -- to build or repair virtually anything, including human 13 _____ and tissues. The hope is that, one day, nanotechnology will repair 14 _____ only the cellular damage caused by the freezing process, but also 15 _____ damage caused by aging and disease. Some cryobiologists predict that the first cryonic revival might occur somewhere around the year 2040.

Lesson 6

Conflict resolution

Questions for discussion

- Is conflict always bad?

- Should all conflicts be resolved peacefully?
- Can we say that conflicts on the social level are more harmful than personal conflicts?

Listening

Listen to some work colleagues trying to resolve a dispute. While you listen, choose the best answer from the choices below.

1. What is the dispute the people are resolving?	About a special project. About pay and conditions. About personal problems
2. How far do they reach an agreement?	Not at all. To a certain extent. Completely
3. How successful is the moderator?	A total failure. Reasonably successful. Completely successful

Listen and fill in the correct word

1. I'd like to try and _____ some problems between you right now.
2. I had a very positive attitude, I was _____ about it.
3. Gavin, can you tell me why you think this situation may _____?
4. Perhaps it's just my style - I'm very positive, _____ and _____, while everyone else here seems to be half-asleep.
5. I don't think that personal, _____ comments like that help.
6. Can we just _____ facts rather than opinions?
7. I could see right away that some changes needed making here, so I _____ making those changes.
8. Job _____! That's all I ever hear round here...
9. Can we _____ from personal comments here, and stick to talking about the workplace.
10. He doesn't respect the limits of what he's _____ to do.

Understanding and Managing Conflict

It has been said that the Chinese symbol for conflict is a combination of the symbols for "opportunity" and "danger." This suggests that, at least in the Chinese culture, conflict includes the opportunity for resolution, and carries significant consequences if it is not resolved. Conflict generally falls into one of three levels:

Level 1. Can't We Just Get Along

Level 2: I Intend to Win.

Level 3: I Will Make You Hurt.

Identifying the right third-party intervener, whether an attorney, a mediator or an arbitrator, is the most critical part for success in a conflict resolution process. By understanding the basics of conflict resolution, and by

implementing the strategies appropriate to the situation, a person in conflict can find ways to successfully resolve the conflict and take the “danger” out, leaving an “opportunity” for growth and learning.

Conflict Resolution

Conflict can be viewed as a difference in perspectives: what you see, think, feel, and believe may be different from what I see, think, feel, and believe. While conflict can be a positive influence, it is not necessarily something that people want to face every day. As the saying goes, too much of a good thing is, well, too much! Conflict should therefore be resolved keeping in view “win-win” strategy which involves collaboration and negotiation. It is based on interests rather than positions. One way that people grow is through overcoming challenges and developing good problem-solving skills. And if work environments support new ideas and encourage constructive criticism in an open, blame-free setting, problem-solving skills are encouraged and nurtured.

A given conflict may be defined in terms of the issues that caused it, the strategies used to address it, or the outcomes or consequences that follow from it. Conflict resolution refers specifically to strategies of diffusion developed during the second half of the twentieth century as alternatives to traditional litigation models of settling disputes. Based on the idea that it is better to expose and resolve conflict before it damages people’s relationships or escalates into violence, methods of conflict resolution were developed in business management and gradually adopted in the fields of international relations, legal settings, and, during the 1980s, educational settings.

Conflict resolution is an umbrella terms that covers may different methods that can be used to resolve the conflict. While everything a person does toward ending the conflict, no matter how unfortunate, is technically a form of conflict resolution, conflict resolution is also commonly called ADR which stands for Alternative Dispute Resolution. Common Types of Conflict Resolution are: Negotiation, Mediation, Arbitration.

Conflict Negotiation Strategies

One of the most important skills a negotiator will learn in training is formulating a clear objective of what to expect from the process of negotiating. You can also achieve a successful conflict negotiation by first beginning to reach an agreement on some small issues. Once you have some agreement, begin to build on this. By doing so, it may help you to achieve the ultimate resolution that you desire.

Two Common Mistakes in Negotiation

Many people make two mistakes regarding their thinking about negotiation. One is the belief that negotiation is a formal event, such as a meeting at a conference table. This blinds them to the fact that they are negotiating all the time. Another is that they associate negotiations with money.

The truth is most negotiations don't concern money. Negotiations are about relationships and decisions. At a personal level, at work, or between countries, specifics may vary, but negotiation is about improving the quality of life.

Negotiation Conflict Styles

“Conflict situations” occur when the needs of two or more negotiators appear to be incompatible or opposite. There are five models of resolving conflicts. All five profiles of dealing with conflict are useful in different situations. Although we're capable of using all five, most of us tend to have one or two preferred negotiation conflict styles that we use unconsciously in most conflict situations.

Compete (I win – You lose)

Accommodate (I Lose – You Win)

Avoid (I Lose – You Lose)

Compromise (I Lose / Win Some – You Lose / Win Some)

Collaborate (I Win – You Win)

Summary Conflict Negotiation: Psychological Dynamics

Conflict in negotiation may have a psychological basis that doesn't fully show itself at the negotiation table. There are many reasons why people respond defensively, or with some measure of hostility. We have to engage in communication to better understand the underlying reason behind this behaviour. A cooperative atmosphere can only be engendered when both parties think cooperatively, and believe that the other party will abide by any agreement they reach. It always takes one party to act first by being collaborative. Negotiators must always strive to fully understand the real interests that lay behind the position.

What Is Win-Win Negotiation?

We need to appreciate that not just any agreement leads to a win-win scenario or outcome in our negotiations. In reality, very few negotiations reach this inspirational and theoretical ideal. Time constraints all too often straight-jacket how long and far we can explore. Attitudes, positions and skills set invisible boundaries that constrain what we see as possible. Win-win deals are more likely when set up correctly through effective use of framing, research and building relationships at the right levels. If a win-win approach is appropriate, it's essential that we remember to pursue a win-win agreement for both parties.

Conflict and Cooperation In The Workplace – Is Conflict Bad?

Many of us think that conflict is always bad. That's not true. There are actually two kinds of conflict that occur, and learning which is which will help you handle each type better. Ideally, to resolve conflict you should clearly understand how it works, how to avoid it, and how to deal with it when it occurs.

In the workplace (and almost any setting), you are likely to find two forms of conflict. The first is conflict about decisions, ideas, directions and actions. We will call this "substantive conflict" since it deals with disagreements about the substance of issues. The second form, "personalized conflict" is often called a personality conflict. In this form, the two parties simply "don't like each other much".

Solution Strategies:

Identification

Move To Substantive Issues

Work To Prevent Personalization

How to Negotiate a Win-Win Conflict Resolution

Once co-workers get stuck in the points of disagreement, progress is stalled, and the team suffers. In these situations, teams need a step-by-step framework for conflict resolution, to move them from breakdown to breakthrough, these steps include:

Determine the real problem,

Identify goals,

Generate other options,

Examine the options and select one,

Set a review date.

Methods of Conflict Resolution

There are a number of different conflict resolution methods and tools that are available for people who are dealing with conflict. Conflict resolution methods usually involve talking the problem through and making sacrifices and compromises rather than inciting violence and fighting over the problem.

Conflict Resolution Methods and Principles

Think Before You React

Actively Listen

Promise a Fair Process

Strive to Attack the Problem

Take Responsibility

Communicate Directly

Find True Interests

Be Future-Focused

Explore Options for Mutual Advancement

Conflict Resolution Tips

Although conflict is something that is unavoidable in our lives, conflict is quite full of opportunities. Still, conflict resolution is stressful and often frustrating without the right conflict resolution tips. If you want to commit yourself to conflict resolution, consider the conflict resolution tips:

Be Respectful

Control your Emotions

Use a Structured Process for Hot Topic Interactions

Understand Willingly

Communicate Openly and Honestly

Exercises:

1 Fill in a necessary word:

1. Identifying the right third-party _____ is the most critical part for success in a conflict resolution process.
2. While conflict can be a positive influence, it is not necessarily something that people want to _____ every day.
3. One way that people grow is through overcoming _____.
4. In an open, blame-free setting, problem-solving skills are encouraged and _____.
5. Conflict resolution refers specifically to strategies of _____ developed during the second half of the twentieth century as alternatives to traditional litigation models of _____ disputes.
6. It is better to expose and resolve conflict before it damages people's relationships or _____ into violence
7. One of the most important skills a _____ will learn in training is formulating a clear objective of what to expect from the process of negotiating.
8. Conflict situations occur when the needs of two or more negotiators appear to be _____.
9. There are many reasons why people respond _____, or with some measure of hostility.
10. We have to _____ in communication to better understand the underlying reason behind someone's behaviour.
11. A cooperative atmosphere can only be engendered when both parties think _____, and believe that the other party will _____ by any agreement they reach.
12. Time _____ all too often straight-jacket how long and far we can explore.
13. Win-win deals are more likely when _____ correctly through effective use of framing, research and building relationships.

2 Complete the text by filling in any necessary word:

Conflict generally is caused 1_____ to: rigidity of rules and regulations, inflexibility of the parties, lack of 2_____ and understanding between the conflicting parties or due to the varied behaviour.

A conflict is a normal situation to 3_____ as it is the human nature which is so varied and dynamic 4_____ persons with same perception about one thing may end 5_____ in a conflict over the other and participants in conflicts tend to respond on the basis of 6_____ perceptions of the situation. People generally base their perceptions on their values, 7_____, beliefs, information, experience, gender, and other variables. Conflicts, 8_____ a large extent, are predictable and expectable situations that naturally 9_____ as we go on managing the complex projects in 10_____ we have significantly invested. If we are able to develop procedures for identifying conflicts which are likely to arise, as well as systems through which we can constructively manage those conflicts, we may be able to find out new opportunities that can transform our conflict into a productive result.

Derivatives

3 Complete the text by changing the word in capitals at the end of the line into a suitable form to fill the gap. Remember to ask yourself first what part of speech the word should be.

Most experts today view conflicts as a useful aspect of an organization. It is claimed that the conflict helps in 1_____ the stagnation and provide new ideas and 2_____ to various issues; it also stimulates interest and curiosity. But a conflict is 3_____ to a level where it is 4_____ and can be resolved easily, therefore, it is necessary to keep a proper control of conflict. Conflict acts as a 5_____ for change in the systems.

PREVENTIVE

SOLVE

HELP

MINIMUM

STIMULATE

Conflict sometimes may lead to innovation and creativity as in a 6_____ environment people tend to put forward 7_____ suggestions to solve the problems.

CONFLICT

IMAGINE

Conflict can be used as a source of reducing the tension as people express their 8_____ by means of conflict. It helps to bring people back to their normal situation.

FRUSTRATED

While the positives of a conflict are few and 9_____, its negatives are abundant and may

LIMIT

be severe. These destructive effects of conflict are also known as 10 _____ aspects of conflict. But it is believed by certain scholars that conflict itself does not create a problem, it is the 11 _____ of a conflict that can lead to a problem.

FUNCTION

MANAGE

Lesson 7

Before you change the world, you have to change yourself

ARE YOU THE PERON YOU'D LIKE TO BE?

Read the text, translate the words in bold:

Why Nice Guys Should Finish First — but Don't

Historian Barbara Taylor and psychoanalyst Adam Phillips examine the evolution of attitudes toward kindness to find out why no one's a good Samaritan anymore.

Historian Barbara Taylor and psychoanalyst Adam Phillips don't believe that nice people finish last. In their new book, */On Kindness/*, the authors employ history, social theory and psychoanalysis to chart how kindness has become a pejorative word over the years. Taylor spoke with TIME from her home in London about how success doesn't require cruelty, why people distrust **generous gestures** and how President Obama might be bringing the virtue back.

In the book you use history and psychoanalysis to explain what kindness means today and how it has evolved. Why take that route?

Taylor: I had **got fed up with** seeing stuff in the media about people suddenly discovering that being **nice to** others made them happier than being **self-interested or greedy**. How is it that people don't know this? In order to understand what's happened to kindness in contemporary society, it's important to understand how we got here.

There seems to be this idea that during difficult economic times like this one, people are more inclined to be kind to one another. What's your take on that notion?

When Adam and I set out to write the book, of course, we had absolutely no idea that we were going to be publishing it in the middle of a global financial meltdown. Pushing the book out into the current situation has been fascinating because there's clearly a great deal of **moral questioning** going on and a lot of anxiety about the mentalities that have been encouraged over the last quarter-century: this whole "greed is good" and "me first" and the kind of triumphalism that has accompanied capitalism.

*Do you think kindness might sometimes **hinder** the pursuit of success or achievement?*

I don't think there is an **incompatibility between** kindness and leading a life that gives you satisfaction and pleasure. The core argument of the book, in a sense, is that one almost requires the other. Kindness is a huge source of pleasure for people. There's nothing wrong with that. It doesn't make it a selfish emotion.

Why do you think people are suspicious of kindness?

There is a kind of **folk wisdom** these days that human beings are basically **grasping, selfish, nasty** creatures. That's how we look at people. That's what we suspect we're really like ourselves. So we're very **wary about** displays of kindness. The word "nice" kind of captures that suspicion. It doesn't have much meaning. "Niceness" could just be a masquerade, **a piece of fakery**. People think that a lot because that's the **ethos** of our age. I think people would gratefully give up that wariness given half a chance.

*People are very **vulnerable** creatures. We need each other. **Kindness** opens us up to other people in such a way that we really acutely experience our own vulnerability. If you **close yourself off**, if you neither give nor accept **sympathy** and **fellow-feeling**, then a defensive [or cruel] position can feel like the safest thing. Kindness is really seen as a sign of weakness.*

I think there's a proper set of anxieties about kindness. **Opening yourself up** to other people does entail risk. We can make it less risky if we don't organize society in such a way that only the most **ruthless and rapacious** get to the top.

*Do you think President Obama's rhetoric, and his emphasis on **empathy** in difficult times, might trickle down to **engender** the sort of kindness you stress in the book?*

Hard times don't necessarily make people nicer to each other. I think that's a myth. When people feel really anxious and fearful for themselves and their families, that doesn't necessarily **foster kindly feelings**. It can create a really **bunkerist mentality**.

*Some have blamed the sharp **increase in** cases of depression and other mental illnesses on our increased social isolation. Do you think the **lack of** kindness you describe may have **contributed to** this?*

It's this question of what it means for people to need each other and just how profound and deep this need runs. But it's often quite difficult to **translate** this need **into action** in one's life. The last few decades have seen a huge increase in the numbers of people who are living outside any kind of **family framework**. And it's not like people can replace that with **warm, neighbourly relationships**, because there's been an erosion of that kind of community life too.

At the same time, there's been a huge increase in the value placed on **independence**. It's like being an independent person is the most important thing, and an acknowledged sense of need and dependence on others unless

you're very, very young or ill -is **reprehensible**. So people find themselves in a terrible double bind. Why are you advocating for kindness?

Kindness is an orientation toward life and other people. It doesn't depend upon **getting back** exactly what you might hope for in each case. People who take pleasure in their own existences -who take pleasure in being alive - have a sense of **vitality** and are able to orient themselves toward the well-being of others. As human beings, we're made through our relationships with other people. They're absolutely fundamental to who we are and how we understand ourselves. No one is an island. We are our relationships with others.

As a historian, you have **insight into** how kindness has evolved over time. With that knowledge, how do you think it will evolve in the future?

One thing we can safely guess is that a society in which inequalities are less grotesque would encourage much higher levels of kindness. It would be wonderful to imagine that we might be **heading in that direction**, but we've sure got a long way to go.

Exercises to the text:

1. Decide whether the following statements are True or False

1. Modern media highlights stories of greed and self-interest.
2. Today many people question the popular mentality of "greed is good".
3. There is an incompatibility between kindness and social success.
4. People are often suspicious at displays of kindness.
5. Modern society is built in such way that opening up to people can be dangerous.
6. During difficult economic times people are more inclined to be kind to each other.
7. The display of any kind of dependence on others is not approved in the modern society.
8. If the society changes toward more competition, the level of kindness may improve.

2. Use the words from the text instead of italicised ones:

1. He is *tired and bored* by your constant complaints.
2. Kindness and social success *cannot co-exist*.
3. You shouldn't *limit your communication*, on the contrary, try to *communicate* and empathise.
4. Some *think that* social isolation is *answerable for* increase in depressions.
5. Why are you *defending* him?
6. We think the criminal *is going in the direction of* the border.

Exercises.

1 Read the text below and decide which answer A, B, C or D best fits each space.

Are you the person you'd like to be?

Have you ever regretted doing something you shouldn't have done or something you didn't do which you should have? At one (0) C or another we probably all have. There's no (1) _____ in getting depressed about it now - it's no (2) _____ crying over spilt milk. However, there may be some

(3) _____ in thinking about exactly what happened and why because we might be able to (4) _____ some conclusions for the future. One thing we all do now and again is to lose our (5) _____ with a friend or close (6) _____. The odd thing is that we more often display great anger (7) _____ someone we're (8) _____ of than towards strangers. The explanation may be that we see friends and relatives as a kind of safety net, an opportunity to let off a bit of steam in a safe (9) _____, whereas the (10) _____ of insulting a stranger or a (11) _____ at work could be far more serious.

Being honest is usually (12) _____ of as a virtue and undoubtedly this is the (13) _____. On the other hand, we have all experienced occasions when we have spoken our minds to someone, (14) _____ them exactly what we feel, and then have found ourselves (15) _____ with feelings of guilt and remorse. Perhaps we should have kept our mouths shut?

- | | | | |
|----------------|----------------|----------------|---------------|
| A occasion | B hour | C time | D day |
| A reason | B purpose | C point | D advantage |
| A use | B point | C value | D benefit |
| A gain | B profit | C goodness | D worth |
| A draw | B make | C do | D take |
| A temper | B mind | C anger | D head |
| A relationship | B member | C familiar | D relative |
| A at | B with | C towards | D about |
| A keen | B fond | C friendly | D familiar |
| A circle | B area | C surroundings | D environment |
| A effect | B consequences | C conclusion | D punishment |

A staff	B mate	C professional	D colleague
A thought	B considered	C regarded	D believed
A true	B case	C event	D fact
A telling	B saying	C speaking	D describing
A full	B heavy	C sad	D overcome

2 Read the text below and think of the word which best fits each space. Use only one word in each space. After each space you are given a clue to the kind of word that is missing.

Regrets

Most of us (0) are (auxiliary verb) always forgetting important dates, apart (1) _____ (preposition) the lucky few (2) _____ (relative pronoun) are blessed with a good memory or the ability to organize (3) _____ (reflexive pronoun) so they don't forget important obligations. How many times (4) _____ (auxiliary verb) we all said, 'I wish I had remembered!' How (5) _____ (adverb of frequency) have we offended people by failing to remember (6) _____ (pronoun) birthdays or name days? (7) _____ (conjunction) they say it doesn't matter, we know, deep down, that we (8) _____ (auxiliary verb) hurt their feelings. We can always try to make it (9) _____ (preposition) to them next time but unfortunately the damage has (10) _____ (auxiliary verb) done and our relationship with that person (11) _____ (modal verb, future) never quite be the same again. On the other hand, we sometimes do (12) _____ (*very* or *too*?) much for someone else because we want to please them and then feel we have damaged (13) _____ (pronoun) own interests in so doing. When friends (14) _____ (auxiliary verb) involved we may find it difficult to say 'no' when they ask us to (15) _____ (*do* or *make*?) them a favour, but true friendship should mean that we can say 'no' without risk to the relationship.

3 Read the text below and look carefully at each line. Some of the lines are correct. If a line has a word which should not be there, write the word.

Positive thinking

to 0 Positive thinking does not mean you to have to find every
 00 idea absolutely wonderful. It does mean you have to be
 1 ready to explore an idea and to try and bring out whatever
 2 good features it may has. The next step might be to find ,
 3 the weaknesses in case the idea and to try and strengthen
 4 them, rather than for using them simply as an excuse for
 5 rejecting the whole idea. Finally, the idea, after it has
 6 been explored, may not be used up because there is a
 7 better one or because, good though it is, it is not the suitable.
 8 There is nothing wrong with being positive about an idea
 9 at first and then rejecting it later, when you can see that
 10 it won't to work. It is easy to be negative and critical and
 11 it is time we had showed less respect for this kind of
 12 destructive thinking and emphasized on creative thinking
 13 more. We should first make ourselves list the positive things
 14 about an idea before we criticize it. Too much talent is wasted
 15 in the negative thinking. So remember - think positive!

How to be good

Reading

Before you read

Discuss the questions:

- How helpful are people generally in your country towards those in need assistance? Give reasons.
- Do you think people today are more or less altruistic than they were in the past? What makes you think this?

1 Identify the writer's views/claims

Get an idea of the passage's content and structure. Is the passage mainly factual, argumentative or descriptive?

a Look at these phrases from the passage. Which ones express a fact (F) and which an opinion (O)?

1. Against the odds, both survived.
2. Autreys good deed could be interpreted as heroic.
3. ... it might lead us to draw quite the opposite conclusion...
4. Various theories have been proposed ...
5. Wilson maintains that this view is now generally accepted ...
6. Wilson is dismissive of such speculation, maintaining that...
7. Pfaff... is convinced that...
8. All of which suggests to Pfaff that...
9. Some of the extra neurons gained are most likely...
10. According to Pfaff,...
11. Wilson has also conducted research,...
- 12.... their evidence suggests that...
13. The encouraging message is...

b Underline the words which indicate that they are opinions (e.g. could be interpreted).

c Which of the opinions are NOT those of the writer?

2 Are words below from the passage adjectives or nouns? Are they generally considered to be positive (+), negative (-) or both, depending on the context (+/-)?

cohesive co-operative coward daring dismissive empathy
exceptional heroic indifference influential ordinary plausible
ruthless sceptic selfishness selflessness self-sacrificing spontaneous

Do the following statements agree with the views/claims of the writer?

Write:

YES if the statement agrees with the views/claims of the writer

NO if the statement contradicts the views/claims of the writer

NOT GIVEN if it is impossible to say what the writer thinks about this

1. What Autrey did was representative of how most humans would react.
2. The importance of altruism for human survival is widely acknowledged.
3. Most biologists are cynical about the existence of genuine altruism.
4. Pfaff's neuroscientific explanation for altruism is credible.
5. Humans have the potential to show altruism if they feel supported.

How to be good

Scientists offer different answers on how to help altruism flourish.

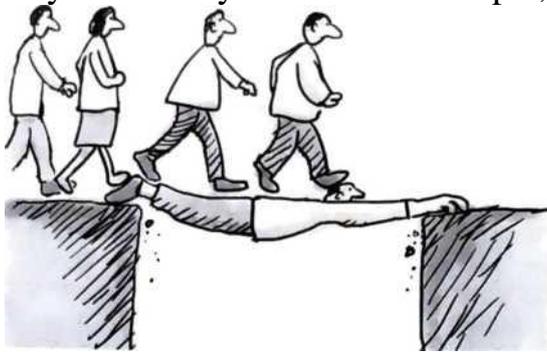
One day, an ordinary New Yorker jumped in front of an approaching train to rescue a young man who had had a seizure and fallen on to the subway tracks. This ordinary New Yorker, Wesley Autrey, rolled them both into a drainage ditch and covered the stranger with his body as the train passed over them. Against the odds, both survived.

Autrey, who has been feted round the world as a hero, showed a selflessness which should restore our faith in human nature. However, although Autrey's good deed could be interpreted as heroic, it might lead us to draw quite the opposite conclusion about the behaviour of human beings. It is not because his action was ordinary that Autrey has since been proclaimed as one of the most influential men of the year by Time magazine, but rather because it was so exceptional. Amid the grim-faced indifference of city life, his self-sacrifice is striking. His case simultaneously draws attention to the possibility of genuine altruism and highlights its everyday absence. Indeed, how we might have evolved to be self-sacrificing has long been a challenge for Darwinism since those who renounce their lives to save their community do not transmit their genes. Even less extreme acts of kindness, such as

sharing food with a sick friend, could disadvantage someone in the ruthless race to survive.

Various theories have been proposed to resolve this Puzzle. David Sloan Wilson, Professor of Biology and Anthropology and author of *Does Altruism Exist?* has long been an advocate of one particular theory which is called group selection. The reasoning behind this theory is that groups of altruistic individuals can flourish because they outperform groups of cowards, competition within a group, he asserts, tends to make selfish individualists, whereas competition between groups turns us into co-operative, self-sacrificing team players. However, although Wilson maintains that this view is now generally accepted, it is a claim which many biologists would disagree with. In any case, a sceptic could argue that supporting others on the assumption that this will improve our collective strength would imply we were not truly altruistic. Nonetheless, Wilson is dismissive of such speculation, maintaining that the beliefs or thoughts are immaterial; the resulting actions should be sufficient.

In contrast, neuroscientist Donald Pfaff, in *The Altruistic Brain: How We Are Naturally Good*, is convinced that our altruistic deeds are as selfless as they seem: they are not for example, simply careful cost-benefit analyses



couched in moral language. He points to studies which confirm that helpful instincts emerge naturally in even very young children and to the spontaneous nature of many altruistic acts. Heroic feats of bravery are often split-second decisions or indeed barely decisions at all, but more like impulses because there is often little time to weigh the pros and cons before acting. All of which suggests to Pfaff that the wiring of our brains makes such actions natural. This is a plausible hypothesis since the human brain increased in size very rapidly at a time in our evolutionary history when the benefits of cooperation were becoming evident.

Consequently, some of the extra neurons gained are most likely dedicated to making us better team players. According to Pfaff, the process begins when we visualize someone and then link this image with our own self-image in our minds. Having identified with the person, we are much more inclined to try and save him. In other words, we are hard-wired to act on empathy. Both Wilson and Pfaff feel certain that a better understanding of the science of altruism will help us to foster it. Though they have faith in our moral instincts, they are not oblivious to the fact that these instincts frequently founder. Pfaff maintains that many human interactions are concerned with

trust and we need to assume that other people are not intent on exploiting us. Where trust fails, relationships and ultimately whole communities disintegrate. If, on the other hand, people become aware that everyone is fundamentally altruistic, a basis will be provided on which trust can be established. Wilson has also conducted research supporting this idea. Having acquired data on the level of altruistic inclination of high-school students in Binghamton, he overlaid this on a map of the town. What this revealed was that where residents were surrounded by caring neighbours, they professed themselves willing to help, whereas selfish neighbours bred selfishness. Like Pfaff, Wilson therefore advocates grass roots schemes to improve neighbourhoods and support social networks in order to maximise people's potential.

Wilson and Pfaff are right in that we are more likely to promote goodwill through careful study of the conditions that foster it and their evidence suggests that people are more altruistic when they are part of cohesive, flourishing environments. The encouraging message is that we do have the resources to be better, as long as we believe in the kindness of others. Therefore, reading these powerful new books on the existence of altruism could be the first step to making the world a much more pleasant place.

LYING

Before you read

This text, *On lying* by Bagehot from the Economist on 30 June 2009, is about politics but it contains ideas which are also important for anyone who works in business. Bagehot is not the real name of the author, it is a pen name. It refers to Walter Bagehot (1826-1877), a famous writer about constitutions.

In order to understand the text, you may need some extra information about the people he mentions and some parliamentary procedures. At the time: Gordon Brown is the Prime Minister and leader of the Labour Party. David Cameron is the leader of the Conservative Party and the Leader of the Opposition in parliament. Tony Blair was the Prime Minister before Gordon Brown. Ed Balls is one of the Ministers in the Gordon Brown Government. PMQs refers to Prime Minister's Questions, a regular weekly event in the House of Commons, when members of parliament can ask questions for the Prime Minister to answer.

The words 'lie' and 'liar' cannot be used in the House of Commons because they are considered impolite.

Discuss

People in business tell a lot of lies when talking to their colleagues, competitors, suppliers and customers. Lies are often used in business but are they acceptable? A lot of success in business is based on trust. If people

discover you are telling lies, will they continue to trust you and your company?

On lying

THE WORD "lie" means something very specific. It doesn't mean a misleading statement, or an exaggeration, or a half-truth: it is a falsehood advanced intentionally and knowingly. That is why, in my column last week, I wrote that probably only Tony Blair and his crew could know whether they "lied" about Iraq's weapons of mass destruction. Only they can know what was in their heads, and how far their public utterances diverged from their inner convictions. For that reason the question of lying over Iraq seems to me a bit of a red herring and distraction. What can be proved about their sloppiness and embellishments, and has been, is bad enough.

Lying is back in the news this week. Gordon Brown stands accused by various newspapers and columnists of deliberately misleading the public about the government's fiscal position. Ditto Ed Balls, the prime minister's henchman, who evidently doesn't take kindly to having his integrity impugned in this way. David Cameron is a bit more periphrastic, knowing that in political parlance the "I" word is a nuclear accusation; but he came pretty close to it yesterday with his talk of "a thread of dishonesty" running through Mr Brown's premiership.

There are (at least) two big questions provoked by this revived interest in lying. First and most obviously, are Mr Brown, Mr Balls and others really and indisputably liars? Do the fiscal figures they cite and twist in any way support the interpretation they put on them—at least enough to make it credible that they believe what they are saying, even if no-one else does? If so, they may not be lying. They may be over-optimistic, incompetent or deluded. But they are not obviously liars.

Second, if he thinks it, should Mr Cameron say it? Why beat around the bush? On the first: I agree that the government's selective use of figures, fondness for comparing like with unlike, switching between cash and real-terms numbers for spending, etc, are dodgy and dishonourable. That is bad enough. But are the ministers lying? It seems to me that one potential reason to think they are not is their own self-perception. Just as medieval peasants in France could not imagine a universe without god—such an idea was not within their range of thinkable thoughts—it is possible that Mr Brown and others simply cannot countenance the scale of the hole they have helped to dig, and in particular find it hard to accept that, in the unlikely event they win the election, they will have to impose the sort of public-spending cuts they have spent their entire political careers berating. (I am trying to be charitable.) Alternatively, there may be a plan for big tax rises, as yet unannounced, that will help to substantiate their claims on spending. That would be a form of deception too, but a different one.

On the second question: On the one hand, if Mr Cameron thinks it, he should say it. But on the other, he has to take Mr Brown on (at PMQs, on the

television, in adverts) for almost another year. If he levels one of the gravest charges possible at him now, where does he go afterwards? The risk is that he will look like an actor who comes on ranting in the first act and then has no higher range to work through in the subsequent ones. There is also the danger that he comes across as bullying and downright rude.

Comprehension

A Read the first paragraph carefully and complete the sentences.

1 You are lying if you ...

say something which is incorrect.

say something which is incorrect, even when you know it is incorrect.

say something which is incorrect, when you believe it is correct.

2 The writer believes that ...

Tony Blair lied about weapons of mass destruction in Iraq.

Tony Blair believed what he said about weapons of mass destruction in Iraq.

Only Tony Blair can say whether he lied or not.

3 The writer believes that Tony Blair tried to make the public believe ...

something which he did not believe.

exactly what he, himself, believed.

something which was eventually proved to be untrue.

B Read the second paragraph carefully and complete the sentences.

1 Gordon Brown has been accused of lying about the government's fiscal position ...

by Ed Balls.

by David Cameron.

by the media.

2 Ed Balls ...

works for the Prime Minister.

supports David Cameron.

supports Tony Blair.

3 Ed Balls ...

says Gordon Brown is lying.

is angry that people say he is lying.

is unkind to Gordon Brown.

4 David Cameron ...

has accused Gordon Brown of lying.

has not accused Gordon Brown of lying.

has accused Ed Balls of lying to Gordon Brown

C In the next two paragraphs Bagehot presents two questions. Read the questions below. What are the two questions which Bagehot asks.

- Are Mr Brown and Mr Balls trying to mislead the public in their interpretation of fiscal data?
- Is the fiscal data published by the government really true?

- Would it be sensible for Mr Cameron to speak clearly and say Mr Brown is a liar?
- Why do many people think Mr Brown is lying even if he believes what he is saying?
- Should Mr Brown change his fiscal policy?

D Read the rest of the article. Which of the following statements are true?

1. The government have used data selectively in a dishonourable way.
2. Medieval peasants in France could not believe in a world in which God did not exist.
3. It is possible that the government believe their own lies.
4. The government are likely to win the next election.
5. The government may be planning to cut taxes after the next election.
6. The government may be planning to cut public spending after the next election.
7. If Mr Cameron says Mr Brown is lying he might appear to be an impolite bully.

Vocabulary

E Look at the words in the box below. Some of the words are connected with lying, some are connected with believing. Some of the words are not connected with lying or believing. Make two lists under the headings LIE and BELIEVE.

r	dece	per	ac	ch	dodgy
d	inco	cre	tw	dis	embel
s	exag	hal	fal	kn	convi
a	slop	sel	int	mi	uttera

F Look carefully at the words in italics. Complete the sentences.

- 1 If you **mislead** someone, you ...
try to make them believe something which is not true.
accuse them of lying.
suggest they cannot do their job.
- 2 If you **exaggerate** something, you ...
tell them something which is not true.
suggest that something is more important than it really is.
try to distract them.
- 3 If someone **attacks your integrity**, they ...
accuse you of telling a lie.
suggest you are incompetent.
suggest that you are dishonest
- 4 If you **twist** some data, you ...
suggest the data can be interpreted in a different way.
change the numbers to match your interpretation.
suggest the data is unreliable.
- 5 If you **beat around the bush**, you ...
speak in a rude and impolite way.
tell people things which you know are untrue.

do not say what you really believe.

6 If someone **accuses you of sloppiness**, they suggest ...

you do not work carefully.

you are dishonest.

you are not charitable.

7 If you **are deluded**, you ...

believe things which are not true.

do not believe what people tell you.

depressed and pessimistic.

8 A **half-truth** is ...

an embellishment.

information which is partly true and partly untrue.

information which is unbelievable.

9 If you are **periphrastic**, you ...

always talk about side issues avoiding the key question.

always believe people are trying to cheat you.

always speak clearly and directly.

10 If you think a piece of data is **dodgy**, you think it ...

can be interpreted in different ways.

it is incorrect.

is unreliable.

G Write a sentence about your life which...

1. Exaggerates the truth.
2. Describes one of your convictions.
3. Describes something which you perceive.
4. Tells a half-truth.
5. Twists the facts.
6. Is specific.
7. Is charitable about someone else.
8. Is a complete lie.
9. Is designed to mislead the reader.
10. Demonstrates your integrity.

THE PERFECT SOCIETY?

Listening

B 1 You'll hear four short talks about these 'perfect societies':

Plato's *Republic* (360 BC)

H.G. Wells's *A Modern Utopia* (1905)

Thomas More's *Utopia* (1516)

James Hilton's *Shangri-La* (1933)

Match the features below to each 'perfect society' by writing **P** for Plato, **M** for Thomas More, **W** for H.G. Wells or **H** for James Hilton in the box beside each feature.

- | | |
|--|--------------------------|
| 1 Politicians are not elected by the people. | <input type="checkbox"/> |
| 2 There is no money. | <input type="checkbox"/> |
| 3 Everyone lives for a long time. | <input type="checkbox"/> |
| 4 Menial work is done by machines. | <input type="checkbox"/> |
| 5 Menial work is done by slaves. | <input type="checkbox"/> |
| 6 There is an army of well-educated men. | <input type="checkbox"/> |
| 7 Nobody does any work. | <input type="checkbox"/> |
| 8 The men can choose their occupation. | <input type="checkbox"/> |
| 9 Only suitable people are allowed to have children. | <input type="checkbox"/> |
| 10 Tests determine each person's future career. | <input type="checkbox"/> |
| 11 The king is chosen by the people. | <input type="checkbox"/> |
| 12 Children are not raised by their own parents. | <input type="checkbox"/> |
| 13 Unsuitable babies are killed. | <input type="checkbox"/> |

Reading

I Read this article and MAKE NOTES on what you think are the most desirable and least

desirable features of Aldous Huxley's Pala (GOOD and BAD POINTS).

Island...

the book that spelled out the ingredients for Utopia

LONG BEFORE JOGGING in Central Park became the fashion, intellectuals on the tropical island of Pala used to put in a couple of hours hard digging every day. They weren't obliged to. But the Palanese were very advanced in matters of health: they didn't separate minds from bodies, venerating brains at the expense of the whole human organism. In economic matters too, Palanese thinking was very advanced. Export crops were discouraged: the islanders were fed first. Money was wasted neither on status symbols nor on weapons. The government bought no armaments: there was no army.

Where was this Utopia? Only unfortunately, between the covers of *Island*, Aldous Huxley's final novel. In it he detailed his prescription for a sane society - especially for Third World countries short on money but rich in human resources. Huxley showed how colonialism had carved out a false channel for most developing countries, draining them of their wealth and their culture. He advocated a siege economy, to stop the leakage. Pala was closed to the outside world, especially out of bounds to merchants, missionaries and media-men, the usual links between the developing world and the West.

Within the walls of the island fortress, radical changes were brought about. For example, wealth was shared more equally - the richest Palanese earning not more than four or five times as much as the poorest. And jobs didn't define personal worth, since the Palanese swapped jobs regularly. Being a doctor for six months and then a farmer for the rest of the year not only made a Palanese a more rounded

person, but also made sure he didn't consider himself superior to people who got their hands dirty. The personal and social integration achieved were, for the Palanese, worth more than the time and money spent on making the changeover.

Huxley takes, one at a time, every important social ingredient that he can squeeze into a 300 page novel - schools, newspapers, politicians, religious and scientific beliefs, ideas about family life — and examines it to find its value. What, for example, is there worth saving in family life? And what is constraining about it? Huxley doesn't polarise the issue into pro-family or anti-family camps. He concocts his own variation of a family that accommodates both the closeness and security that come from a two-parent set-up as well as the variety and freedom that come from a child having several homes to choose from. Palanese society, therefore, is an amalgam of the best in every society that Huxley knows.

First published in 1962, *Island* had a powerful influence on the young idealists of the day. Many of the ideas were so advanced that they are only now being widely recognised - like Huxley's insistence that Western medicine and holistic health care techniques should be allies, not enemies.

But there is one huge snag. Pala is fiction. Huxley is the God of Pala. How are real people in real countries to shift to this paradisaic willingness to live cooperatively? For instance, it might not help a real country to adopt a siege economy: who would stop the big bad unequal world outside the fortress walls from being reproduced within the walls as a small bad unequal world?

Huxley's answer leads him out of the political realm into the realm of spiritual values. His islanders have evolved inwardly. They have all experienced a transpersonal dimension where they are part of a universal oneness; when they return to the material world, they remain inspired by the glimpse of the ideal.

Dangerous waters. Perhaps to forestall critics tempted to dismiss Huxley as a dreamy 1960 mysticism-junkie, he included among his cast of characters a group of spiritual fakes, charismatic guru figures who use their followers' gullibility to gain political power and line their pockets. Huxley sets these vigorously apart from the genuinely spiritual, whose spirituality is infused matter-of-factly into their everyday lives, in everything they do - eating dinner, making love, coping with an injury. It is their constant awareness of the here and now - a phrase popularised more by *Island*, surely, than by any other book - that does the trick.

In Huxley's *Brave New World*, everything from muzak to mechanical sex was used to blot out consciousness and turn people into manipulable zombies. The result was a hell on earth. In *Island*, everything, including sex and drugs, is partaken of consciously to heighten individual consciousness still further. The result is Pala, Huxley's heaven on earth.

Work as a team to design your own Utopia. Decide on these aspects:

- the physical environment • food and drink
- government • work and employment
- possessions and wealth • science and technology
- public and private transport • family structures
- education system • law and order

Write a description of your own idea of Utopia as an article for a student magazine

Vocabulary and reading

1 Read the text and decide which answer (A, B, C or D) best fits each space.

Top Ten fears

Ask most people for their Top Ten fears, and you'll be sure to find being burgled fairly high on the (1)____. An informal survey I (2)_____ among friends at a party last week revealed that eight of them had had their homes broken into more than twice, and two had been burgled five times. To put the record (3)_____, none of my friends owns valuable paintings or a sideboard full of family silverware. Three of them are students, (4)_____. The most typical burglary, it seems, (5)_____ the theft of easily transportable items – the television, the video, even food from the freezer. This may have something to do with the fact that the (6)_____ burglar is in his (or her) late teens, and probably wouldn't know what to do with a Picasso, (7)_____ selling a walkman or a vacuum cleaner is a much easier (8)_____. They are perhaps not so much professional criminals, as hard-up young people who need a few pounds and some excitement. Not that this makes having your house (9)_____ upside down and your favourite things stolen any easier to (10)_____. In most (11)_____, the police have no luck (12)_____ any of the stolen goods. Unless there is definite evidence, they are probably unable to do anything at all. And alarms or special locks don't (13)_____ to help either. The only advice my friends could (14)_____ was 'Never live on the ground floor' and 'Keep two or three very fierce dogs', which reminded me of a case I read about, where the burglars' (15)_____ included the family's pet poodle.

- 1) A rank B rating C grade D list
- 2) A called up B held with C set about D carried out
- 3) A straight B right C correct D steady
- 4) A as well B however C in fact D at any rate
- 5) A means B involves C affects D covers
- 6) A common B medium C average D middle
- 7) A whereas B as yet C much as D as soon as
- 8) A concern B event C situation D matter
- 9) A put B turned C stood D pulled

- 10) A submit B receive C accept D admit
- 11) A examples B cases C items D occasions
- 12) A taking B making C tracking D recovering
- 13) A sound B look C show D seem
- 14) A come up with B make do with C go through with D get off with
- 15) A takings B profit C loot D receipts

2 Complete each space in the text with a word formed from the word in capitals.

One of the most (1) crime statistics in Europe is the rise in juvenile crime. Often the root cause is (2) to drugs, an expensive habit which often leads young (3) into a life of petty crime.

WORRY
ADDICT
OFFENCE

Some parents, unable to cope with their children's addiction have thrown them out of home, forcing them to live the lives of(4). 'Kate' (not her real name) is one such person.

BEG

(5) since she was 18, Kate has had various brushes with the law, most recently for

HOME

(6) , in order to raise cash to fuel a heroin habit. As a result of that transgression, Kate spent two months in prison, rubbing shoulders with (7) criminals and murderers. Kate accepts that she acted (8)

SHOP

in stealing computer equipment, and doesn't bear any grudges towards the police. 'It's their job to (9) the

HARD
LEGAL

law, I understand that. And I'm trying to come to terms with my addiction.' Kate has come good. Helped by the social services, she hasn't touched any drugs for the best part of a year. But, sadly, for every Kate there are ten young people for whom prison is no (10) DETER at all.

FORCE

3 Decide which prepositions collocate in the following sentences.

- a) The new law on dropping litter comes ... force next month.
- b) Ann was released from prison and now she is ... probation.
- c) Local students have been banned ... taking part in the demonstration.
- d) Local people have called for an investigation ... the causes of the fire.
- e) Football fans went ... the rampage in the centre of Norwich last night.
- f) She claimed that the selling of habit-forming drugs was getting ... control.
- g) The car left the road and crashed ... a tree.
- h) Several guests at the hotel were robbed ... jewellery and money.
- i) David, 19, has been sleeping ... a park bench for the past six months.
- j) The police have charged her ... driving without due care and attention.

NATURE AND ECOLOGY

Lesson 1

Geohazards

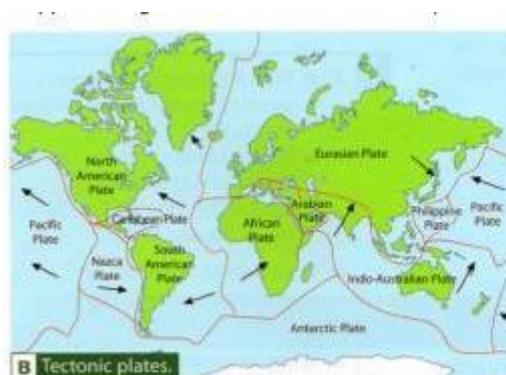
1. Volcanoes



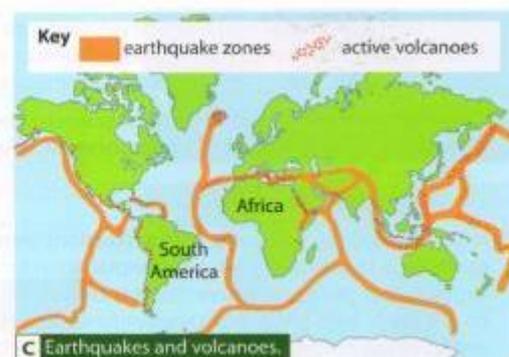
Lava from the Eldfell eruption destroyed houses on the island of Heimaey.

Volcanoes and earthquakes are produced by enormous releases of energy, and they can cause massive destruction and loss of life. They are often referred to as geohazards. Records of these disasters show that they are most likely to happen along the boundaries of tectonic plates.

active volcanoes



Tectonic plates.



Earthquakes and volcanoes.

In a volcanic eruption, magma builds up in a chamber beneath the volcano. The pressure builds up until magma is forced out through cracks or vents in the volcano. If the magma is runny, bubbles of gas trapped within it can escape from the magma as it ascends, and when it reaches the surface it flows (as lava) down the mountain. However, some magma is more viscous and the gas bubbles cannot escape. The pressure from the gas builds up until

the volcano erupts explosively, often shooting solidified bits of lava, ash and dust high into the air. Magma from the mantle in spreading regions tends to be less viscous than magma formed by melting part of a descending plate.

It is not just lava that can kill people. A pyroclastic flow is made up of a fast-moving cloud of hot gases, ash, dust and rock. An eruption often covers the surrounding land with thick layers of ash. If there is also heavy rainfall, or if a lake or river bursts its banks, the water and ash can form a swift mudflow, called a lahar. This can kill people and destroy farmland and property.



Scientists cannot stop volcanoes from erupting. However, they can help to reduce the damage by trying to predict when a volcano will erupt. Public authorities in areas near active volcanoes have plans to evacuate people when an eruption is predicted. Buildings can be strengthened to cope with ash falling on them.

Speaking:

- Why are volcanoes and earthquakes most likely to happen near the edges of tectonic plates?
- Is an eruption of viscous magma more or less dangerous than one of runny magma? Explain your answer.
- Explain which kinds of eruptions you would expect in:
a Iceland b the Andes.
- What can scientists do to try to reduce the damage caused by volcanoes?

Vocabulary:

Which is the odd one out: lava, magma, pyroclastic flow, lahar? Explain your answers.

1 Complete the information with words from the box. One word is extra

abandon ancestors dawn disastrous holy monitor

Many legends (stories passed down from 1 _____) involve volcanoes. According to *The Legend of Popo*, the two volcanoes of Popocatepetl and Iztaccihuatl tell the story of a princess and a soldier named Popocatepetl, who fell in love, but with 2 _____ consequences. In one version, Iztaccihuatl dies of grief after she is told by her father that Popocatepetl has been killed in battle. When Popocatepetl returns from war to find her dead, he carries her body to the top of a nearby volcano. He refuses to 3 _____ her body and he wants to die. Eventually, snow covers them both and they become two mountains.

It is said that the gods were touched by Popocatepetl's sacrifice of refusing to leave Iztaccihuatl's body until he died. Today smoke can often still be seen at 4 _____ rising from the summit of the volcano, which many people regard as a mysterious and 5 _____ place. According to legend, this is the torch of Popocatepetl, who still stands guard over his beloved's body.

2 According to Hawaiian legend, Pele, the goddess of fire and volcanoes, lives in the top crater of Mt. Kilauea. The formations made by cooling lava were given names like Pele's Tears and Pele's Hair.

Complete the information with words from the box.

disaster displace expand inevitable monitor witness

The islands of Hawaii rose out of the sea as a result of volcanic activity on the ocean floor. One of the islands' volcanoes, Mt. Kilauea, is currently the most active volcano on Earth, and Hawaiians have 1 _____ its evolving shape over hundreds of years. Often, sections of earth are 2 _____ by a sudden jolt, or pressure builds up under the surface as the hot molten rock 3 _____ causing an eruption. Nowadays, the shape of the volcano is closely 4 _____ by scientists. They know that a future eruption is 5 _____, but they hope they can prevent it from being a 6 _____ for the people who live nearby.

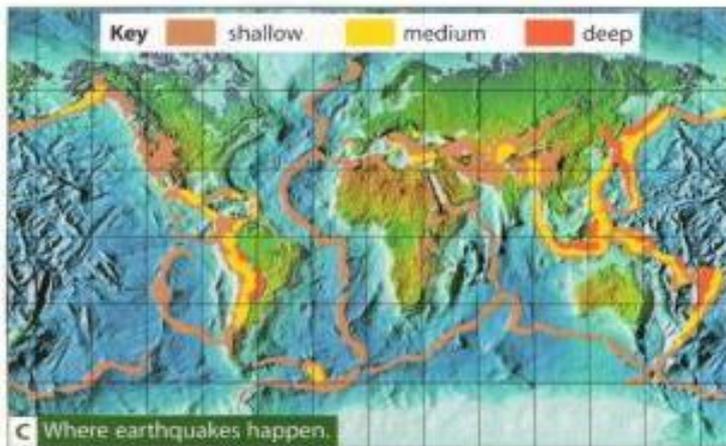
2 Earthquakes



1 San Franciscans know that earthquakes are inevitable. This is because the city is built near the San Andreas Fault zone, which lies on a conservative plate boundary where two tectonic plates are trying to slide past each other.

Friction between the massive blocks of rock stops them moving smoothly. Force builds up until eventually something breaks and the rocks move suddenly. This sudden movement causes seismic waves to spread out.

The place where an earthquake happens is called the focus, and the place on the surface immediately above is called the epicentre.



Predicting earthquakes can be more difficult than predicting volcanic eruptions. Scientists can try to predict when the next earthquake will happen based on what has happened in the past, and on measurements of forces and small movements in the ground. However, there is often no warning.

2 Is prediction possible?

Never before have so many people packed into cities - places such as Los Angeles, Istanbul, Tokyo, and Lima - that are regularly affected by earthquakes. Located near the edge of Earth's huge, shifting plates, these cities face the risk of death and economic disaster from large quakes - and from the tsunamis, fires, and other destruction they often cause.

We understand earthquakes better than we did a century ago. Now scientists would like to predict them, but is it possible?



The waves of an earthquake come in two forms. P-waves (yellow) arrive and compress and punch the rock. S-waves (red) are slower but more destructive. They move from side to side to shake and destroy buildings. Look at the caption. Choose the correct answer for each question.

1 What is the main cause of buildings moving from side to side?

- a P-waves
- b S-waves

2 What effect can a building's deep foundations have?

- a protect the building from earthquakes
- b make a building more likely to be damaged by earthquakes

Today, some of the simplest questions about earthquakes are still difficult to answer: Why do they start? What makes them stop? Perhaps the most important question scientists need to answer is this: Are there clear patterns in earthquakes, or are they basically random and impossible to predict?

“Earthquakes follow a pattern; they have 25 observable signs,” says Koshun Yamaoica, a scientist at the Earthquake Research Institute at the University of Tokyo. In fact, Japan has already predicted where its next great earthquake will be: Tokai, a region along the Pacific coast about 160 kilometers (100 miles) southwest of Tokyo. Here, two plate boundaries have generated huge earthquakes every 100 to 150 years. The section along

Tokai hasn't had a major quake since 1854. The theory is that strain is building up in this region, and that it's time for this zone to reduce its stress.

The desire for a precise prediction of time and place has led to another theory: the idea of "pre-slip." Naoyuo Kato, a scientist at the Earthquake Research Institute, says his laboratory experiments show that before a fault in the Earth's crust finally breaks and causes an earthquake, it slips just a little, if we can detect these early slips taking place deep in the Earth's crust, we may be able to predict the next big quake.

Clues in the Desert

Scientists working in Parkfield, California, in the U.S. are also trying to see if predicting earthquakes is possible. They've chosen Parkfield not only because the San Andreas Fault runs through it, but because it's known for having earthquakes quite regularly - approximately every 22 years. In the late 1980s, scientists in Parkfield decided to study the fault to see if there were any warning signs prior to a quake. To do this, they drilled deep into the fault and set up equipment to register activity.

When a quake did finally hit on September 28, 2004, it was years off schedule, but most disappointing was the lack of warning signs. Scientists reviewed the data but could find no evidence of anything unusual preceding the September 28th quake. It led many to believe that perhaps earthquakes really are random events. Instead of giving up, though, scientists in Parkfield dug deeper into the ground. By late summer 2005, they had reached the fault's final depth of three 75 kilometers (two miles), where they continued collecting data, hoping to find a clue.

And then they found something, in an article published in the July 2008 journal *Nature*, the researchers in Parkfield claimed to have detected 80 small changes in the fault shortly before an earthquake hit. What had they noticed? Just before a quake, the cracks in the fault had widened slightly. Scientists registered the first changes ten hours before an 8.5 earthquake of 3.0 on the Richter scale hit: they identified identical signs two hours before a 1.0 quake-demonstrating that perhaps the "pre-slip" theory is correct. In other words, it may in fact be possible to predict an earthquake.

Although there is still a long way to go, it appears from the research being done all over the world that earthquakes are not entirely random. If this is so, in the future we may be able to track the Earth's movements and design early-warning systems that allow us to predict when a quake will happen and, in doing so, prevent the loss of life.

Reading Comprehension

Choose the best answer for each question.

1 What is the reading mainly about?

- a. earthquake prediction failures
- b. the Japanese government's work on earthquakes
- c. efforts to predict when an earthquake will happen
- d. the Parkfield investigations

2 Which of the following is closest in meaning to the reading's first sentence, beginning *Never before have... ?*

- a. Many people who live in big cities have experienced earthquakes.
- b. Cities crowded with people are more likely to have serious earthquakes.
- c. Some of the biggest cities in the world suffer damage from earthquakes.
- d. More people than ever live in cities that are affected by earthquakes.

3 In line *To do this, they drilled deep into the fault and set up equipment to register activity* what does do **this** refer to?

- a. wait for an earthquake
- b. study the fault
- c. predict an earthquake
- d. set up equipment

4 In line *Scientists reviewed the data but could find no evidence of anything unusual preceding the September 28th quake* the word **reviewed** could be replaced with:

- a. recorded
- b. deleted
- c. saw
- d. studied

5 Which of the following statements is NOT true?

- a. A major earthquake occurs in Tokai every 100-150 years.
- b. Scientists believe that the "pre-slip" theory could help predict earthquakes.
- c. Data supporting the "pre-slip" theory was found in Parkfield.
- d. There was a major earthquake in Parkfield, in late summer 2005.

6 According to Parkfield scientists, how did cracks in the fault change before an earthquake hit?

- a. They became much wider,
- b. They became slightly narrower,
- c. They became slightly wider,
- d. They became much narrower.

7 What is the main idea of the last paragraph?

- a. Further research will help us avoid loss of life in the future.
- b. Earthquake research has had a long and successful history.
- c. Early-warning systems are being designed to predict earthquakes.

d. It is unlikely we will ever be able to predict the Earth's movement accurately.

Speaking

- How can buildings in earthquake zones be made safer?
- Look at the part of the map in diagram C that shows South America. Some earthquakes start deeper within the Earth than others. Suggest why the deep earthquakes are further from the coast than the shallow ones.
- Look at diagram C. Suggest why the map shows more earthquake locations than volcanoes.
- Tsunamis can cause death and destruction in coastal areas. What causes them?
- Why can an earthquake cause damage some distance from the epicentre?
- Explain why earthquakes occur mainly in certain areas of the world - Central Africa and Australia do not experience large earthquakes. Suggest a reason for this.

Vocabulary

Useful expressions:

schedule

(adj.) busy schedule, regular schedule; (n.) change of schedule, work schedule, train schedule; (prep) according to schedule, ahead of schedule, behind schedule, on schedule.

1 Complete the information with words from the box.

drill massive random schedule track zone

1 Scientists _____ holes into the ground near earthquake fault areas to learn what is happening under the surface.

2 One reason earthquakes are so hard to predict is that they don't seem to follow any regular pattern or _____ ; they appear to occur almost at _____.

3 Scientists who _____ the movements of the Earth's crust believe that a _____ earthquake, known as "the Big One," will eventually occur in southern California.

4. Research after the 2004 Asian tsunami found only two dead buffaloes in a large wildlife conservation _____ in Sri Lanka. This led to renewed belief that animals are sensitive to the near arrival of earthquakes.

2 Complete the information with words from the box. One word is extra.

data detect laboratory precise schedule

Researchers collecting 1. _____ from experiments in a 2. _____ , as well as those observing animals in the real world, suggest that animals are much

more aware of the world around them than we human beings. For example, some scientists believe that dogs can be used to predict earthquakes. Mitsuaki Ota of Azabu University, Japan, claims that dogs can 3. _____ big earthquakes about three hours before they happen. Some scientists are confident that with the help of dogs, one day more 4. _____ predictions could be possible.

3 What disaster is being described in each of these sentences?

earthquake/ hurricane/ volcanic eruption/ flood/ drought

1. It lifted a car about ten feet off the ground, and then we saw it disappear down the street.
2. It was about two metres deep and we watched as most of our furniture just floated away.
3. The grass turned yellow and most of the crops died.
4. The walls began to move visibly, and large cracks opened up in the ground.
5. We could see the lava slowly advancing towards the town just ten miles away.

4 Both options make sense. Underline the one which forms a common collocation.

1. Many small houses and huts were *flooded away/washed away* when the river burst its banks.
2. Poor farming methods are responsible for soil *devaluation/erosion* in many areas of sub-Saharan Africa.
3. During the earthquake, many people were *buried/covered* alive.
4. The forest fire left a wide area of the mountainside blackened and *ablaze/smouldering*.
5. Villagers are hoping for rain this month after nearly a year of dry *weather/drought*.
6. Before the hurricane struck, many people were *evacuated/shifted* to higher ground.
7. Thousands of children in the famine-stricken area are suffering from *malnutrition/undernourishment*.
8. Heavy snow has fallen in the mountains and many villages have been *blocked out/cut off* for the past two days.
9. The Aids *epidemic/plague* is having serious effects in some countries.
10. Many small islands in the Indian Ocean are threatened by rising sea *waters/levels*.

Writing

Understanding Cause and Effect Relationships



When writers explain a process, they often describe an action's cause and/or its effect. Words that indicate cause and effect relationships include: **caused, as a result, result in, because, so, therefore, and the reason why.**

As you read the text, make connections between events using the proper linkers.

The San Francisco earthquake of 1906 left about 225,000 people homeless. 1_____, more property was destroyed by fire than by the earthquake itself. Fires broke out in many parts of town 2_____ natural gas pipes broke. Other fires were accidentally started 3_____ firefighters, trying to create firebreaks, used explosives to destroy buildings. This 4_____ in the destruction of many buildings that might otherwise have survived the earthquake.

Lesson 2

Ecological Responsibility

Reading

The living planet

PLANET EARTH IS 4.6 MLN YEARS OLD

If we condense this inconceivable time-span into an understandable concept, we can liken Earth to a person of 46 years of age.

Nothing is known about the first 7 years of this person's life, and whilst only scattered information exists about the middle span, we know that only at the age of 42 did the Earth begin to flower.

Dinosaurs and the great reptiles did not appear until one year ago, when the planet was 45. Mammals arrived only 8 months ago; in the middle of last week manlike apes evolved into ape-like men, and at the weekend the last ice age enveloped the Earth.

Modern man has been around for 4 hours. During the last hour Man discovered agriculture. The industrial revolution began a minute ago.

During those sixty seconds of biological time, Modern Man has made a rubbish tip of Paradise.

He has multiplied his numbers to plague proportions, caused the extinction of 500 species of animals, ransacked the planet for fuels and now stands like a brutish infant, gloating over this meteoric rise to ascendancy, on the brink

of a war to end all wars and of effectively destroying this oasis of life in the solar system.

The natural world is under violent assault from man.

Fill in the necessary word:

The seas and rivers are being 1)_____by radioactive wastes, by chemical discharges and by the dumping of dangerous toxins and raw sewage. The air we 2)_____is polluted by smoke and fumes from factories and motor vehicles; even the rain is poisoned.

It's little wonder forests and lakes are being destroyed and everywhere 3) _____ is disappearing. Yet the destruction continues.

Governments and industries throughout the world are intensifying their efforts to extract the earth's mineral riches and to plunder its living resources.

The great rain forests and the frozen continents alike are seriously threatened.

And this despite the 4)_____of the scientific community and the deep concern of millions of ordinary people.

5)___ the fact, too, that we can create environmentally-clean industries, harness the power of the sun, wind and waves for our energy needs and manage the finite resources of the 6)_____in a way that will safeguard our future and protect all the rich variety of life-forms which share this planet with us.

But there is still hope. The forces of destruction are being challenged across the globe - and at the spearhead of this challenge is Greenpeace.

Wherever the 7) _____ is in danger, Greenpeace has made a stand. Its scientific presentations and peaceful direct actions at sea and on 8)_____have shocked governments and industries into an awareness that Greenpeace will not allow the 9)_____ world to be destroyed. Those actions, too, have won the admiration and support of millions.

Now you can strengthen the thin green line; you can make your voice heard in defence of the living world by joining 10)_____ today.

Listening

Before you listen to the recording, look at the summary below and see how many of the gaps you can already fill from your own knowledge of the subject. Listen to the recording and fill the gaps in this summary.

1. According to Sam Fuller, Europeans are becoming dissatisfied with the existing political parties and the Greens represent a _____
2. Helen Summerfield makes a distinction between the Green_____ and the Green_____
3. The three main non-political environmental pressure groups in the UK are: _____, _____ and _____.
4. These organisations have been working to raise _____ and raise _____ of environmental issues.
5. One of their campaigns encourages people to use _____ and persuades local governments to provide _____

6. According to Sam Fuller, the Greens don't only raise objections, they try to propose alternative _____, _____ or _____. These alternatives are less _____ and often less _____.
7. As it becomes more _____ for people to care about the environment, the public will choose to buy _____ products.
8. Governments will be expected to implement 'green' policies because, in the eyes of the voters, actions _____.

Vocabulary

1. Choose the proper word to fill the gap from the choice given below

1. Smoke, dirt and noise are all types of _____.
2. Elephants are in danger of _____ due to hunting.
3. Every day rubbish and chemicals are taken out to sea and _____.
4. When Chernobyl reactor exploded, large areas of surrounding countryside were _____ and there was _____ all over Europe.
5. Fifty hectares of jungle are going to be _____ during the next minute.
6. Toxic wastes will _____ in the oceans more and more in the future.
7. Every hour one _____ is disappearing from the surface of the Earth.
8. Large areas of important natural _____ have already been lost, including 70% of the forests in Greece.
9. Trade in animals and animal products can have disastrous effects on _____ populations.

Species, extinction, effluent, wildlife, dump, accumulate, poach, habitat, devastate, pollution, contaminate, harness, fallout

1. Fill the gap with the word from below:

1. Wild animals should be approachedas they might be dangerous.
2. When the last animal of certain species dies, that species become.....
3. Many animals find it more and more difficult to survive as their naturalis destroyed.
4. A new group has been..... to protect rare European birds.
5.groups try to protect animals and the places where they live.
6. Animals for zoos have to beby experts as they must not be injured in any way.
7. Pollution is the lives of many animals.
8. It is hoped that education programmes willan understanding of the earth's environmental problems.
9. Several environmental groups are working to the world's rain forests from being destroyed.
10. The earth's areas are in danger of disappearing completely.

1. habitat 4. conservation 7. captured 10. forested
 2. prevent 5. threatening 8. established
 3. extinct 6. cautiously 9. create

2. You are going to read a text about environmental change.

Read the introductory paragraph below and fill in the gaps with words from the box.

ecology resources environment destruction habitats

We have come to the end of a millennium of relentless and accelerating (1) of the world around us. While human creativity and technology have blossomed, we have steadily been destroying the (2) of the planet on which we depend for our survival. The sad fact is that every day the diversity of life on Earth gets poorer because of our overuse of (3) and our disregard for the riches of nature.

Ecologically, our natural (4) provide services without which life on the planet would become impossible. When we tamper with the (5), it is not just nature which suffers. Our own way of life is under threat.

Read the next part and identify the key environmental issues being described. Then use words and phrases from the box to fill in the gaps

acid rain gases ozone layer fossil fuels pollution leak changes in climate greenhouse effect toxic wastes

Since the industrial revolution, man has burned ever large quantities of (6), first coal and then oil, with the result that the composition of the atmosphere has started to change. Burning these fuels produces (7) such as carbon dioxide, which act in the atmosphere like glass in a greenhouse and trap the heat of the sun - this is known as the (8). The overall global temperature has already begun to rise. Global warming is expected to lead to extreme (9), with more frequent floods, droughts and heat waves. No person, animal, bug or bird will be unaffected.

In addition to greenhouse gases, industrial processes produce poisonous substances which can be virtually impossible to dispose of safely. If these (10) are buried in underground storage sites, there is the danger that they may (11) into lakes and rivers, with serious long-term effects on living organisms. Emissions from industrial plants, such as sulphur, can also enter the atmosphere, where they can cause damage to the (12) around the planet. They may also fall back to Earth as (13) and destroy plants and trees. All these are examples of types of (14) that could be prevented.

Now read the continuation of the text. Fill in the gaps with words from the box below.

We drain (15) _____ near rivers and coastal areas to create land for building. Through (16) _____, the large-scale cutting down of trees, the (17) _____ that allow species to survive are changed and the amount of land available for (18) _____ decreases. Some species are so reduced in number that they are in danger of (19) _____. At this stage they are known as an (20) _____ and are only one step away from total (21) _____.

We are now beginning to manipulate nature in new ways, without thought for the possible consequences. Technology now allows us to create (22) _____ of plants which are resistant to diseases and which can survive extremes of temperature or salinity (salt content). The danger of this process of (23) _____ is that producing new plants or other (24) _____ like bacteria may bring disaster as well as apparent advantages, as experience has already shown.

So, with the new millennium, we need a new beginning, a fresh start. We need to reverse the major threats to our environment. Above all, we need to understand that we cannot go on consuming and polluting with no thought for tomorrow.

deforest ation	wildlife
ecosyste ms	endangered species
extincti on	genetic engineering
living organis ms	dying out
wetland s	strains

3. Join these sentences using the words in brackets. Make any changes necessary. Then check your answers by referring back to the text you have read.

1. Every day the diversity of life on Earth gets poorer. We are overusing resources and disregarding the riches of nature. (*because of*)
2. Man has burned ever larger quantities of fossil fuels, first coal and then oil. The composition of the atmosphere has started to change. (*result*)
3. Some species are very reduced in number. They are in danger of dying out. (*so ... that*)

4. Now rewrite the following sentences beginning with the words given, making any changes necessary.

- 1 The number of private cars has increased enormously, and this is a key factor in global warming.

A major cause of global warming is the...

2 The Earth's temperature is rising and, as a result, the polar ice caps are melting.

The polar ice caps are melting as a result of...

3 As sea levels rise, there is an increased incidence of flooding.

One effect of the...

4 Sea levels may rise even more and cause whole countries to disappear.

Sea levels may rise to such an extent...

5 Toxic waste is being dumped in the sea with the result that many fish and sea mammals have died. Many fish ... due to ...

6 The spread of deserts is linked to deforestation and farming methods such as irrigation and excessive grazing.

... have led to ...

5. Fill in the correct word(s) from the list below:

Aerosol, exhaust, ozone-friendly, recycling center, public transport, boycott, waste, dispose, unleaded, influence.

Pollution is getting worse, and it is up to us, the public, to solve the problem. You can start by taking your unwanted 1) _____ to a(n) 2) _____, instead of just throwing it away. You also need to properly 3) _____ of any rubbish which cannot be recycled. A good way to

4).....big companies is to 5).....any products which are harmful to the environment.

This forces the companies to change their method of production. If you buy a(n) 6) _____ spray, for example, always make sure it is a(n) 7)....one. Also, if you do drive a car, try and get one which takes 8) petrol because the 9)..... fumes given off are less harmful

to the environment. If you are travelling in the city, don't use the car, but take 10).....

instead. It is much more environmentally friendly, and often faster as well.

2. Choose the correct phrase

1. Most young people want to _____ more about environmental problems.

a) look up b) find out c) deal with d) make out

2. Everyone knows about pollution problems, but not many people have _____ any solutions.

a) thought over b) got round to c) looked into d) come up with

3. Many factories break the anti-pollution laws and _____.

a) put up with it b) take it over c) get away with it d) come round to it

4. Disposing of waste and rubbish is a hard problem to _____.
a) carry out b) put up c) get away d) deal with
5. More people in cities should _____ cycling instead of using cars.
a) rely on b) take up c) set up d) get around to
6. Most governments seem to just _____ dealing with environmental problems.
a) put off b) make up for c) do without d) take after
7. In some countries environmental organisations have been _____ to inform people and gain their support.
a) set off b) make up c) set out d) set up
8. Unless we _____ the problem, many animals could become extinct.
a) face up to b) look up to c) turn up to d) get up to
9. Quite soon, the world is going to _____ energy resources.
a) run out of b) get into c) keep up with d) come up against
10. The important thing is to believe that problems can be solved, and not to _____.
a) make up b) look up c) give up d) put up

Speaking

Choose an environmental issue that you think is particularly relevant to your country. Answer the following questions.

- What are the specific effects of the problem on your country? Give examples.
- What is being done to improve matters? Is it enough, or should more be done? What?
- What is likely to happen if nothing is done?

Writing (Nexus)

1 Combine these sentences about wildlife conservation to form one sentence, using the words and expressions which are given, in the order in which they are given.

Publicity is given to the continuing slaughter of African wildlife.

Little is being done to stop it.

The Governments of the countries concerned simply don't have the resources.

In some cases they don't have the will.

The resources and the will are needed to act effectively.

In spite of because or which

2 a) Combine these sentences about deforestation to form the topic sentence of a paragraph, using the words and expressions which are given, in the order in which they are given, and making any changes to the wording of the sentences which become necessary.

Some of the disadvantages of destroying the tropical forests are obvious. One example of these disadvantages is the loss of valuable commercial resources.

Another example is the loss of an area of great biological importance.

But there are also the effects on the world's climate.

These are only now beginning to be understood.

Apart from such as and also which

b) Combine the following two groups of sentences in the same way to continue the paragraph.

1 One of these effects is the Greenhouse Effect.

The Greenhouse Effect is the result of changes in the Earth's atmosphere.

The changes in the atmosphere are partly the result of the burning of trees.

One caused which due

2 One inevitable effect of this phenomenon is hotter weather worldwide.

This may have the effect of melting the polar icecaps.

A rise in sea-level would be the result of the melting of the polar icecaps.

The consequence of a rise in sea-level would be the loss of much coastal land.

This phenomenon lead and the possible in turn result in and the consequent

3 Put each of the following fragments about pollution into three different contexts, using three of the words and expressions listed beneath it. The connecting expression may appear before, after, or in the middle of the fragment. You may add as many words or sentences as you like.

1 ... it is almost impossible to dispose of nuclear waste safely ...

whereas moreover for example because in spite of as a result it is often thought

2 ... nowadays, Western European governments are beginning to take measures to protect the natural environment ...

however unlike for example because owing to whereas on the other hand nevertheless consequently

Lesson 3 A Warmer Earth

Listening

Friends of the Earth

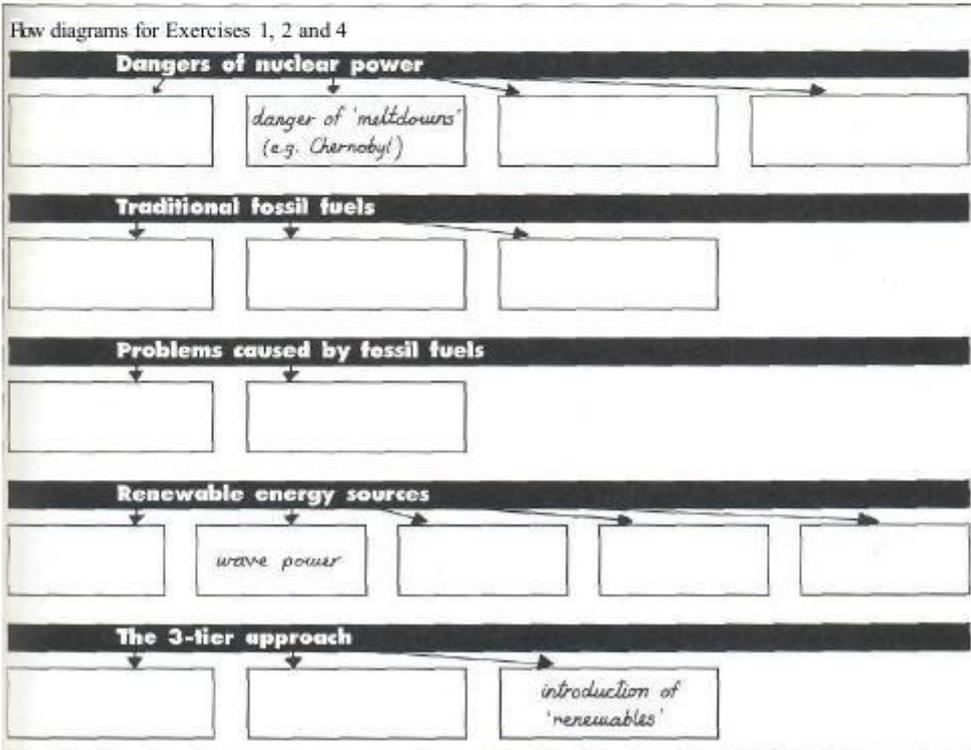
Discussion

- Note down anything you know about:
 - the dangers of using nuclear power to generate electricity;
 - the environmental problems caused by traditional sources of energy;
 - less harmful sources of energy.
- You are going to listen to Jan McCarry, Information Officer for Friends of the Earth, talking about these questions. What do you know about 'Friends of the Earth'?

Listening exercises

As you listen, fill in the flow diagram with notes. Three have been done for you. Check with another student.

- 2 Listen again, adding more detail to your notes.
- 1 Also answer the following questions in groups.
 - a The following figures are mentioned (in the same order) by Jan McCarry. To what do they refer? 90% 75% 12 years 20% 40%
 - b Why is the 'Greenhouse Effect' so called?
 - c In what connection are the following places mentioned? Germany Czechoslovakia Holland London Norway California
 - d How, briefly, is energy extracted from waves?
 - e What are the objections to wind power? How can these be overcome?
 - f What is the big problem with renewable energy sources?
- 3 Do you know of any useful information to contradict or add to what Jan says? What is the environmental policy in your own country? Are you in favour of it? Why/Why not?
- 4 Use the notes you think in Exercise 1 to write an essay entitled: 'Nuclear Energy. Is there an alternative?' Use 300 to 400 words.



Questions for discussion:

- How much attention is being given to global warming nowadays?
- How long has global warming been underway?
- What are the primary engines of global warming?
- How do you explain the "greenhouse effect"?
- How can we be affected by excessive global consumption of oxygen?

How is destruction of forests related to the discussed problem?
What are the current developments that contribute to climate change?
Have the poles remained unharmed by the climate change?
What are the disaster scenarios for humans if nothing is done to mitigate the climate change?
What is likely to happen to flora and fauna in the worst-case scenario?

Global Warming: Try It, You Might Like It

by Thomas Gale Moore

Pundits, politicians and the press have argued that global warming will bring disaster to the world, but there are good reasons to believe that, if it occurs, we will like it. Where do retirees go when they are free to move? Certainly not to Alaska. People like warmth. When weather reporters on TV say, "it will be a great day," they usually mean that it will be warmer than normal. The weather can, of course, be too warm, but that is unlikely to become a major problem if the globe warms. The Intergovernmental Panel on Climate Change has forecast that, by the end of the next century, the world's climate will be about 3.6° Fahrenheit warmer than today, that precipitation worldwide will increase by about 7 percent and most of the warming will occur at night and during the winter. In addition, temperatures are expected to increase the most towards the poles. Most of the temperature increase will occur during the coldest season, making their climate more livable. Warmer winters will produce less ice and snow to torment drivers, facilitating commuting and making snow shoveling less of a chore. Families will have less need to invest in heavy parkas, bulky jackets, earmuffs and snow boots. Department of Energy studies have shown that a warmer climate would reduce heating bills more than it would boost outlays on air conditioning. Most economic activities would be unaffected by climate change. Manufacturing, banking, insurance, retailing, wholesaling, medicine, educational, mining, financial and most other services are unrelated to weather. Those activities can be carried out in cold climates with central heating or in hot climates with air conditioning. Transportation would benefit generally from a warmer climate since road transport would suffer less from slippery or impassable highways. Airline passengers, who often endure weather-related delays in the winter, would gain from more reliable and on-time service.

The doomsayers have predicted that a warmer world would inflict tropical diseases on Americans. They neglect to mention that those diseases, such as malaria, cholera and yellow fever, were widespread in the United States in the colder 19th century. Their absence today is attributable not to a climate unsuitable to their propagation but to modern sanitation and the lifestyle, which prevent the microbes from getting a foothold. It is actually warmer along the Gulf Coast, which is free of dengue fever, than on the Caribbean islands where the disease is endemic. My own research shows that a warmer

world would be a healthier one and would cut the number of deaths in the U.S. by about 40,000 per year, roughly the number killed on the highways. According to climatologists, the villain causing a warmer world is the unprecedented amount of carbon dioxide we keep pumping into the atmosphere. As high school biology teachers emphasize, plants absorb carbon dioxide and emit oxygen. Researchers have shown, moreover, that virtually all plants will do better in an environment enriched with carbon dioxide than in the current atmosphere, which contains only trace amounts of their basic food. In addition, warmer winters and nights would mean longer growing seasons. Combined with higher levels of CO₂, plant life would become more vigorous, thus providing more food for animals and humans. Given a rising world population, longer growing seasons, greater rainfall, and an enriched atmosphere could be just the ticket to stave off famine and want.

A slowly rising sea level constitutes the only significant drawback to global warming. The best guess of the international scientists is that oceans will rise about 2 inches per decade. The cost to Americans of building dikes and constructing levees to mitigate the damage from rising seas would be less than \$1 billion per year, an insignificant amount compared to the likely gain of over \$100 billion for the American people as a whole. Let's not rush into costly programs to stave off something that we may like if it occurs. Warmer is better; richer is healthier; acting now is foolish.

Role-play

Imagine that this or another panel on climate change has recently completed the research and produced their report. The scientific findings are presented in a very technical way and now a reporter has arranged an appointment with the project manager to ask some straightforward questions and receive comprehensible answers for their TV programme. Take a few minutes to prepare some clever questions and, eventually, act out the conversation in the form of a successful TV panel.

Vocabulary

1 Fill in the gaps in the text below with the provided expressions.

Doomsday scenario

flash floods

suitable habitat

World Wild Fund for Nature

contracting malaria

ridden with malaria

doomsday scenario

flash floods

9 suitable habitat

World Wild Fund for Nature

contracting malaria

ridden with malaria
be particularly hard hit
submerged by rising sea levels
huge costs
distribution of wildlife
skiing destinations

Global Warning

Guardian Unlimited, September 1, 1999

Spain will be (a)_____, the eastern Mediterranean will be as hot as the Sahara desert, (b)_____ will swamp parts of the American coastline and there will be almost no snow in the Alps. This is the (c)_____ painted in a new report on the effects of global warming on 10 of the world's most popular tourist destinations in the next century.

The study, commissioned by the (d)_____ (WWF), found that profitable tourist destinations could be turned into "holiday horror stories".

By 2020 visitors to the Costa del Sol could risk (e)_____ as global warming brings more frequent heat waves, making Spain a (f)_____ for malaria-bearing mosquitoes, while increases in summer temperatures to more than 40C may make parts of Turkey and

Greece (g)_____ in July and August.

The study by the climatic research unit of the University of East Anglia in Britain suggests that countries that rely on holidaymakers for (h)_____ will need to take account of the changing climate when planning resorts or (i)_____.

David Viner, the senior research scientist who (j)_____, said: "Areas such as the

Mediterranean could become unbearable during the traditional summer holiday season. As temperatures begin to soar, many tourists will stay away."

The report says a (k)_____ over Australia will increase (l)_____, increasing the risk of sunburn and skin cancer.

Winter tourism in the Alps and other European (m)_____ will be affected because they

will have less snowfall and shorter skiing seasons. Lower-lying resorts in Austria, and areas where commercial skiing operations are already marginal, such as Scotland, will (n)_____.

The southeast coastline of the United States, including parts of Florida, may be threatened by rising sea levels. Safari holidays in east and southern Africa may be affected as droughts and changes in temperature alter the (o)_____.

Some islands in the Maldives could disappear as they are (p)_____.

The tourism industry could be faced with (q)_____ as global warming begins to

influence decisions about when and where people are going to go on holiday.

2 Explain the meanings and give examples of usage of the following words from the text above. Use the chart below.

Word	Meaning(s)	Example of usage other than in the text

pundit, outlay, attributable, propagate, sanitation, endemic, emit, absorb, stave off, mitigate, irrevocable, submerge, heat wave, soar, marginal, drought

3 Translate the sentences below incorporating the vocabulary from the previous exercise.

1. Положення Кіотського протоколу передбачають зниження темпів зміни клімату.
2. План невідкладних заходів ставить за мету відвернути екологічну катастрофу.
3. В загальному підсумку зусилля однієї країни будуть малопомітними.
4. Кислотні дощі пояснюються великими викидами в атмосферу вуглекислого газу промисловими об'єктами.
5. Вживаючи заходів у зв'язку зі зміною клімату, на початку промисловість понесе великі витрати на переоснащення.
6. Раптові повені стали тепер характерною ознакою районів, де схили гір позбавлені лісу.
7. Кваліть ведмедя віднесли на рахунок тривалого голодування.
8. Постійним епідеміям було покладено край покращивши санітарні умови в міських нетрях.
9. На забруднених ґрунтах хімічні відходи засвоюються рослинами.
10. В результаті підвищення рівня світового океану під водою можуть опинитися цілий ряд найкращих курортів.
11. Руйнування полярної криги може безповоротно змінити географічну карту світу.
12. Минулого літа температура сягала рекордних відміток.
13. Під час спеки згоріла більша частина врожаю.
14. Тварини, що населяють степи, пристосовані до частої посухи.

4 Fill the gaps in the text using the words from above:

Celsius energy estimate radiation extinct diseases reducing greenhouse effect average greenhouse gases

What is the Greenhouse Effect?

The 1_____ often gets a bad rap because of its association with global warming, but the truth is we couldn't live without it.

What Causes the Greenhouse Effect?

Life on earth depends on 2_____ from the sun. About 30 percent of the sunlight that beams toward Earth is deflected by the outer atmosphere and scattered back into space. The rest reaches the planet's surface and is reflected upward again as a type of slow-moving energy called infrared 3_____.

The heat caused by infrared radiation is absorbed by "greenhouse gases" such as water vapor, carbon dioxide, ozone and methane, which slows its escape from the atmosphere.

Although 4_____ make up only about 1 percent of the Earth's atmosphere, they regulate our climate by trapping heat and holding it in a kind of warm-air blanket that surrounds the planet.

This phenomenon is what scientists call the "greenhouse effect." Without it, scientists 5_____ that the 6_____ temperature on Earth would be colder by approximately 30 degrees 7_____ (54 degrees Fahrenheit), far too cold to sustain our current ecosystem.

Scientists agree that even a small increase in the global temperature would lead to significant climate and weather changes, affecting cloud cover, precipitation, wind patterns, the frequency and severity of storms, and the duration of seasons.

Rising temperatures would raise sea levels as well, 8_____ supplies of fresh water as flooding occurs along coastlines worldwide and salt water reaches inland.

Many of the world's endangered species would become 9_____ as rising temperatures changed their habitat.

Millions of people also would be affected, especially poor people who live in precarious locations or depend on the land for a subsistence living.

Certain vector-borne 10_____ carried by animals or insects, such as malaria, would become more widespread as warmer conditions expanded their range.

5 Complete each gap with one suitable word.

Global Warming

The increasing concentration of (1)_____ in the earth's atmosphere is causing a (2)_____ that many scientists believe is warming the earth. CO₂ molecules allow the sun's rays to pass through but (3)_____ some of the reflected heat from returning to space. In 1988, (4)_____ burning, the primary cause of global warming, added about 5.5 billion tons of (5)_____ to the atmosphere. Deforestation added another 0.4 trillion to 2.5 billion tons by releasing the carbon stored in trees and in the (6)_____ that supports them. Carbon dioxide levels are now 25 percent (7)_____ than before the industrial revolution.

Scientists predict that, if strong action is not taken to control global warming, the average temperature of the Earth's surface will (8)_____ rapidly, as much as 1.5 to 4.5 degrees Celsius (3 to 8 degrees Fahrenheit) by the middle of the next century. Temperatures at mid and upper latitudes could rise twice as fast. Resulting changes in (9)_____ patterns will threaten agriculture. The cost of adjusting (10)_____ systems alone could exceed 200 billion. The polar ice caps will begin to (11)_____ and warmer oceans will expand, causing sea levels to rise as much as several feet. Beaches will wash away and, without expensive dikes, many coastal cities will be (12)_____ Ocean salt will (13)_____ fresh water supplies and, flood low-lying coastal farmland, wetland areas, and even some island nations.

6 Choose the most suitable word

1. Fewer consumer exposures to products containing **toxic substances/ ozone layer/ fresh water**.
2. Rising **tidal power / sea level / fresh water** mean that some reclaimed land in low-lying areas has already vanished.
3. A **overpopulation / population / environment** is a group of interbreeding organisms of the same kind living in the same place at the same time.
4. The community provides the **habitat / wildlife / surroundings** - the place where particular plants or animals live.
5. **Ecosystem / atmosphere / environment** comprises all of the external factors affecting an organism.

6. Within the last century, the amount of **sandy soil / oil blobs / carbon dioxide** in the atmosphere has increased dramatically, largely because people burn vast amounts of fossil fuels - coal and petroleum and its derivatives.
7. **Acid rain / fossil fuel / dense forests** is also responsible for the decline of many forest ecosystems worldwide.
8. Forty percent of world population now faces chronic shortage of **salt water / fresh water / sandy soil** for daily needs.
9. **Ecology / fauna / erosion** is the study of the relationship of plants and animals with their physical and biological environment.
10. Carbon emissions doubled in three decades. **Violation balance / Acid rain / Global warming** is now a serious threat.

Lesson 4

What we do to our world

Read the text, translate the words in bold:

Since ancient times Nature has served Man, being the source of his life. For thousands of years people lived in harmony with **environment** and it seemed to them that natural riches were unlimited. But with the development of civilization man's **interference in** nature began to increase.

Large cities with thousands of smoky industrial enterprises appear all over the world today. The **by-products** of their activity **pollute** the air we breathe, the water we drink, the land we grow grain and vegetables on.

Every year world industry pollutes the atmosphere with about 1000 million tons of dust and other **harmful substances**. Many cities suffer from smog. Vast forests are cut and burned. Their disappearance upsets the oxygen balance. As a result some **rare species** of animals, birds, fish and plants disappear forever, a number of rivers and lakes dry up.

The pollution of air and the world's ocean, destruction of the **ozone layer** is the result of man's careless interaction with nature, a sign of the ecological crisis.

The most horrible **ecological disaster** befell Ukraine and its people after the Chernobyl tragedy in April 1986. About 18 percent of the territory of Byelarus were also polluted with **radioactive waste**. A great **damage** has been done to the agriculture, forests and people's health.

Environmental protection is of a universal concern. That is why serious measures to create a system of ecological security should be taken.

Some progress has already been made in this direction. As many as 159 countries - members of the UN - have **set up** environmental protection agencies. An international environmental research centre has been set up on Lake Baikal. The international organization Greenpeace is also doing much **to preserve** the environment.

But these are only the initial steps and they must be carried onward to protect nature, to save life on the planet not only for the sake of the present but also for the future generations.

Vocabulary exercises

Pollution

Fill in the words from below:

Every year in the U.S. factories release over 3 million tons of toxic 1. _____ into the land, air and water. This hazardous waste causes us to lose over 15 million acres of land every year, it leads to respiratory complications and other 2. _____ problems and it makes our rivers and lakes too 3. _____ for us to swim in and drink. But factories are only part of the problem of pollution. Pollution is caused by industrial and commercial 4. _____, agriculture practices, everyday human activities and most notably, modes of transportation. Pollution is the introduction of a contaminant into the environment. It is created mostly by human actions, but can also be a result of natural 5. _____. 6. _____ pollution is pollution of the Earth's natural land surface by industrial, commercial, 7. _____ and agricultural activities. The best way to prevent land pollution is to 8. _____. Don't use 9. _____. Air pollution is the accumulation of hazardous substances into the 10. _____ that threaten human life and other living matter. Some of the main contributors to air pollution are: automobile 11. _____, tobacco smoke, 12. _____ rain, wildfires, 13. _____ weapons. Water pollution is the introduction of chemical, biological and physical 14. _____ into large bodies of water that degrade the quality of life that lives in it and consumes it. The best way for you to get involved with pollution 15. _____ is to practice efforts on your own or join a project or program.

health	emissions	waste	nuclear	domestic	chemicals	land
recycle	matter	pesticides	disasters	acid	atmosphere	
polluted	prevention					

Complete the following using the appropriate form of one of the words in italics from the paragraph above, and a verb from the box.

**reduce control harness affect improve provide repair
damage congested destroy harm emission pollute reduce**

Example:

The recycling of certain kinds of waste is now common practice.

Glass, paper and most metals are now _____ at special

plants. But many more such plants need to be. Answer: recycled, provided

a Air pollution is a huge problem in most of the world's big cities, and people complain about it constantly. However, what _____ the air most is the exhaust from the vehicles which those same people drive. One solution would be to strictly _____ the amount of driving people can do in cities.

b Cars emit poisonous gases such as carbon monoxide and carbon dioxide. Steps are being taken to _____ these _____ by fitting new cars with 'catalytic converters' which make most of the gases harmless.

c Thousands of hectares of the world's rainforests are destroyed every year. This _____ of the rainforests is expected to _____ the global climate, as well as wildlife, in various ways.

d Scientists now believe that the ozone layer is being damaged by the chemicals in certain common products, such as deodorants and hairspray, and the chemicals given off by air-conditioners. The _____ caused to the ozone layer can never be _____.

e Everyone knows that nuclear waste can harm the environment. But until it becomes possible to _____ the natural energy of the sun, the wind and the waves, it will be impossible to meet man's energy needs without producing _____ waste of one kind or another.

f As cities become more congested with traffic, local councils tend to widen streets and try to _____ the flow of traffic. Of course, this encourages more people to drive in the city, and the _____ increases again.

Reading and Translation:

Complete the paragraphs by translating the missing part from Ukrainian to English

The seven dirtiest rivers on the planet

Mississippi River



The Mississippi is one of the longest rivers in the world, but it is brown in color owing to the constant release of waste into it.

...

The river has a high level of nitrogen-based fertilizer run-off, which instead of leaching in the soil, upsets the food chain and reduces the oxygen levels in the waters thus causing death of aquatic life.

Кількість живих організмів в річці скорочується через виливи нафти. Найбільша кількість відходів надходить в річку від різних галузей промисловості та фермерів, які використовують шкідливі хімічні речовини, які викидають у річку.

До основних забруднюючих речовин річки належать бензол, ртуть та миш'як.

Marilao River

This river is home to millions of Philippine residents who use the water for drinking and also for irrigation. The pollution of the river is mostly from wastes from tanneries, dumping and gold refineries.

...

In addition to this, the water has rocks bearing heavy metals, which pose a health hazard to the residents.

...

The pollution of the water is detrimental to the fish industries in Philippines since toxic metals such as lead contribute to the death of [aquaculture](#).

На поверхні річки присутня велика кількість матеріалів, що не підлягають вторинній переробці, такі, як пластикові пляшки.

Ця річка схильна до затоплень, що в свою чергу доставляє всі відходи з води на землю, що призводить до деградації ґрунтів



Buriganga River

This river is a source of life for millions of Bangladesh residents. It is also a major economic resource for the country since it is the biggest river in the country. The river is mainly polluted by the tanneries which border the river. Also, there has been a lot of [human waste](#) in the river. There are a lot of floating waste materials in the river such as plastics and dead animals.

...

Consequently, the aquatic life of the river has since died.

Всі ці відходи забруднили воду і зробили стік відходів настільки інтенсивним, що річка стала чорною!

Sarno River

This is arguably the most polluted river in the European continent. The river that flows in Italy has overtime become a poison to the residents. The source of the river is clean and safe for drinking.

...

The toxicity of the river has caused an alarming increase in liver cancer cases in the area.

...

Poor waste treatment control has led to the increased pollution of the Sarno.

Тим не менш, течія річки стикається з викидами промисловості та сільського господарства, що призводить до забруднення річки вниз за течією.

Більше того, річка легко затоплюється, що призводить до зсувів і збільшення токсичності ґрунтів.



Yellow River

China is the fastest growing economy and this is attributed to its rapid industrialization. The Yellow River has yellow sediment 'loess' which attributes to its yellow colour.

...

Nevertheless, people are still dependent on the river for drinking water. It is because of this that the area around the river has seen a rise in the occurrence of waterborne diseases, cancer and birth defects. Most recently, there are efforts to dissuade people from drinking the water from this river since it is unsafe for human or animal consumption.

Ця річка є домом для промислових відходів різних галузей виробництва, включаючи хімічні заводи, що робить воду занадто токсичною навіть для сільського господарства.

Citarum River

Indonesia, the home of the Citarum, may not be as populous as India or China but it is still in the top league with a population of over 200 million. The river flows in an area where there are heavy human settlements coupled with a number of factories. The industrial wastes have led to an increase in the mercury levels of the water far above the legal level. The river is dirty and polluted from the source, all the way to the outlets. Since the river serves a large population, the residents are forced to use the water source despite its state. However, the river has continually robbed the country of people with over 50,000 deaths annually.

Ganges River



The Ganges is the most sacred river in India. The Hindus believe that the river cleanse people clear from their sins. It is the third largest river in the world with a consumption base of over two billion people.

...

Due to the combination of chemicals in the river, water used for basic uses such as drinking or cooking leads to the spread of [waterborne diseases](#). The river has a layer of

floating plastics and other wastes which provide a poor image of the holy river.

...

The Ganges is considered the dirtiest river on the planet.

Постійно зростаючий тиск на річку призвів до скидання нефільтрованих стоків в річку, що призвело до її масового забруднення. Крім того, є дуже багато відходів, які надходять після виконання релігійних обрядів.

Text Cohesion:

1 Fill in the gaps with any fitting word:

Waste strategy

The “waste hierarchy” refers 1 _____ the 3Rs of reduce, reuse and recycle, which classify waste management strategies according to their desirability. Some waste management experts have recently incorporated a 'fourth R': "Re-think", 2 _____ the implied meaning that the present system may have fundamental flaws, and that a thoroughly effective system of waste management may need an entirely new way 3 _____ looking at waste. Source reduction involves efforts to 4 _____ hazardous waste and other materials by modifying industrial production.

Source reduction methods involve changes 5 _____ manufacturing technology, raw material inputs, and product formulation. At times, the term "pollution prevention" may refer to source reduction. Another method of source reduction is 6 _____ increase incentives for recycling. Many communities in the United States are implementing variable rate pricing for waste disposal (also known as Pay As You Throw) 7 _____ has been effective in reducing the size of the municipal waste stream.

Source reduction is typically measured by efficiencies and cutbacks in 8 _____. Toxics use reduction is a more controversial approach to source reduction that targets and measures reductions in the upstream use of 9 _____ materials.

Toxics use reduction emphasizes the more preventive aspects of source reduction but, 10 _____ to its emphasis on toxic chemical inputs, has been opposed more vigorously by chemical manufacturers.

Reading

What is the ‘life cycle of a polymer’?

We use synthetic polymers for many products - from clothes to carpets and mobile phones to packaging. When choosing a polymer, we should consider which material is best for the job and v/e should also ask about the effect of using the material on the environment. We need to look at the whole life cycle of the product, that is:

- the raw materials that are used to make it

- how much energy is needed
- how much waste is produced
- how the packaging and the product are disposed of after use.

Questions for discussion:

Disposable cups are made from paper or a synthetic polymer,

- a What are the raw materials from which each is made?
- b What effect does obtaining these raw materials have on the environment?
- c The cups are used all over the world. What effects does transporting the cups from the factory where they are made have on the environment?

Disposing of polymers



Natural polymers will rot, but bacteria cannot digest most synthetic polymers. They are said to be non-biodegradable. There are three ways of disposing of waste.

Landfill: Most plastic rubbish is dumped in the ground and buried under soil. This is cheap but we are running out of suitable sites. New biodegradable polymers could be developed which would decompose, but the resources used to make the polymer would still be lost.

Incineration: Most polymers burn well if they are heated to a high temperature. The energy released could be used to generate electricity, but unless the combustion is controlled very carefully, poisonous gases are given off.

Recycling: Many polymers can be melted and reused. Most polymers look very similar and sorting them is time-consuming. Polymer products are stamped with a symbol saying what polymer the object is made from but sorting relies on people to do the job.

Local councils are responsible for collecting and disposing of waste. The government sets targets for the amount of waste to be recycled.



Polymer recycling symbolok.



PET

(polyethylene terephthalate) e.g. plastic bottles, meat packaging



HDPE

(high density polyethylene) e.g. milk bottles, detergent bottles, oil bottles, toys, plastic bags



V (polyvinyl chloride) e.g. vegetable oil bottles,

blister packaging



LDPE (low density polyethylene) e.g. plastic bags, shrink-wrap



PP (polypropylene) e.g. margarine containers, yoghurt containers

6 PS (polystyrene) e.g. egg cartons, fast food trays

7 OTHER (an other resins) e.g. multi-resin containers, microelectronic components

Follow-up:

1 Which method of disposal:

a produces useful energy

b has the most beneficial effects for the environment?

2 Fresh food sold in supermarkets often comes with two or three layers of plastic packaging.

a Who benefits from the packaging? Explain your answer.

b Who is harmed by the packaging? Explain your answer.

3 Some of the ways of getting rid of plastic waste are cheaper and easier to do than others.

a Which methods of disposal can we use without much change to our way of life? b Which methods would require us to make changes in the way we use polymers? Explain your answers.

4 Synthetic polymers are used in supermarket carrier bags and in bags for storing blood for patients needing transfusions.

a Does one product have a greater benefit than the other? Explain your answer.

b How does this affect the choices we have to make about using polymers?

Make a list of the ways that using polymers affect the environment. Draw a table to show the advantages and disadvantages of the different methods of disposing of polymer waste.

Writing

Read the text below, identify and if necessary improve:

Is it a coherent composition?

The type of the composition

Thesis statement - competent/ not competent, improvements.

Number of body paragraphs and their topic sentences

Conclusion?

Linkers and signal words.

The Ecology of Recycling

While not on the front line of climate solutions, recycling of **waste materials, wastewater**, and wasted energy is a locally available and highly desirable **means of** reducing greenhouse gases. One potent greenhouse gas, the methane emitted from **landfills** and wastewater, **accounts for** about 90 per cent of greenhouse **gas emissions** from the entire waste sector. Diverting waste bound for landfills and putting it to good use, then, is an obvious and proven means for **conserving land and resources**, as we have known for a long time; we can now add the knowledge from numerous studies that these practices also bolster climate protection.

How does resource reuse affect climate? Cycling energy through cogeneration, reuse of agricultural wastes, or recovery of energy-intensive materials such as aluminium, reduces greenhouse gases. Since most commercial energy is produced from **burning fossil fuels**, the **power generation** sector emits more **greenhouse gases** than any other industrial sector. Cycling materials for use in other production processes reduces the lifecycle impacts, when compared with virgin materials that must be **extracted from** the earth and then transformed and transported through numerous stages. Cycling water means using it more than once, a critical and increasingly urgent practice where water is scarce owing to expected changes in **precipitation patterns** brought on by climate change. Embedded utility is central to industrial ecology: if a product is landfilled, these resources are lost.

Study after study in the last five years from Brazil to Canada and from Europe to Asia affirms the ability to quantify greenhouse gas emissions from **household waste** on a lifecycle basis. Each of these lifecycle studies finds a clear, positive **impact** of recycling and reuse on reducing greenhouse gases, principally because of recapturing, rather than discarding, the embedded energy, water, and materials used to make the products in the first place. Recycling metals carries a large energy benefit, while paper recycling often contributes to forest carbon sequestration benefits. Replacing power generated by oil or coal, two carbon-intensive fuel sources, adds more greenhouse gas benefits to recycling than replacing power generated from **renewables** or hydro energy.

A broad array of policy programmes is available to reduce **climate-related impacts** of waste management. Some of the most successful programmes include recycling pick-up from homes or drop-off at district centres; requiring residents who generate a lot of waste to pay more than those who generate less (pay as you throw); instituting policies that require producers of goods to play a larger role in taking back products (extended producer responsibility); and assessing fees and taxes on categories of goods such as tyres or batteries, or on landfill use overall.

While geographic concentrations of industry are often heavy generators of greenhouse gases associated with global climate change, impacts can be modulated through collaborative approaches. Emerging from **industrial ecology** is the notion of “industrial symbiosis”: where a cluster of geographically proximate companies exchange material by-products, energy, and water in a mutually beneficial manner, such that waste from one industrial process becomes the feedstock for another. Through such systems, transportation costs and emissions are minimized and embedded utility is conserved, enabling greenhouse gas emissions to be greatly reduced at the industrial scale.

Lesson 5

Humans and extinctions



How do humans cause the extinction of other organisms?

Captions:

A The numbers of giant panda are decreasing as we destroy the forests in which they live.

B The thylacine (marsupial wolf) of Tasmania was hunted to extinction in the early 1900s.

D Galapagos penguins are at risk of extinction because of pollution in their habitat.

Questions for discussion:

- Write down four ways that humans may cause the extinction of other species.
- Which of the causes of extinction by humans is likely to be most important in the future? Explain your answer.

Homo sapiens is a very successful species. We can eat a wide range of plant and animal foods from many food webs and change our environment to make conditions suitable for us to live in. However, as we use the world to suit our needs we also affect the plants and animals around us. What we are doing is threatening other species with extinction. We say they are endangered.

Over the past 200 years the human population has risen from less than 1 billion to over 6 billion, and it is still rising rapidly. People are trying to protect and conserve endangered species in many different ways. The number of great crested newts is increasing because they are protected in the UK. You are not allowed to disturb ponds where they live. Crocodiles were once hunted for their skins. They are now being farmed so that wild animals are not killed.

Vocabulary Practice

1 Choose the correct variant:

The human factor

There are lots of scientists and environmentalists working really hard to protect many animals from going extinct but are these ecological/ environmental/ conservation efforts enough? Are we really going to lose many animals and plants in years to come or will science find the answer on how to protect them from extinction. What is really happening to our planet that so many animals are brought to the brink/rim/ edge of extinction? Are we the ones to blame?

The reasons for so many threatened animals in the world are connected with ecological problems of the modern world. Animals are losing their areas/ habitats/ environment because we need more and more room for ourselves and this is what creates huge biodiversity loss/ loose/ fall in many parts of the world. The other ecological problems play their negative part too; most notably climate change that is giving animals very little time to adapt to changed climate conditions. And there are, of course, deforestation and pollution, both of what/ that/ which contribute to endangered animals problem.

All hard work can be lost in almost one blink of an eye if something unpredictable happens, and modern ecology is sadly full of negative surprises these days. Take mountain gorilla conservation, for instance. Mountain gorillas live in the area of frequent military conflicts and one short civil war between government and rebels could wipe out/ do in/ cut down entire population in a matter of days.

Still the most difficult challenges remain habitat loss, poaching, and climate change. Habitat loss can happen as opposed to/in addition to/ due to many different reasons but all these reasons have one origin, namely us, the humans. As the world population keeps on growing, humans need more space for their houses, farms, industries, and this is leaving animals with very little room, when some species need large areas to survive. Take tigers in India for example, tigers need large areas/ habitats/ environment to hunt their prey, and because of constant habitat loss in India their hunting areas are getting smaller and smaller, which causes frequent conflicts with local population, and results in many deaths on both sides.

Hunting/ Stalking/ Poaching is still very profitable business in many African countries, and in some parts of the Asia, and the more endangered animal is,

the better price will be achieved on the black market. This situation has led to many organized poaching gangs that are depleting/ eradicating/ undermining conservation efforts in many African countries. Poachers really have not much to fear since governments are often corrupted, there's no political will to stop them, and even if they get caught they often get away with minimal sentences.

The latest big problem that makes conservation efforts difficult is also the climate change. As climate change effect/ impact/ consequence becomes stronger and stronger, it leaves many animals very little time to adapt. This will eventually drive many species to extinction unless the world does something to stop further strengthening of global warming impact. So what's the conclusion? Lots of environmentalists, scientists, and many other people that care for our planet are doing all they can to protect many animals from extinction. But they can not succeed in this mission unless the world starts to clean this tremendous environmental mess that has been created over the years.



**2 Complete the information using the words from the box
Two words are extra.**

**ban current effective eliminated locations posed
strictly trap**

For decades, habitat loss and hunting 1. _____ a huge threat to the whooping cranes of North America. When the whooping crane was listed as endangered in 1967, there were just 48 birds left in the wild.

In 1978, whooping crane habitat was established in several U.S. states. They now nest in three 2. _____ : Wisconsin, Florida, and at Wood Buffalo National Park in Canada.

Due to nest protection, 3. _____ breeding and reproduction programs, and a(n) 4. _____ on hunting that is 5. _____ enforced, the 6. _____ population of

North America's tallest bird is now at about 600 birds. Though the crane's future remains uncertain, it's one of conservation's great success stories.

**3 Complete the sentences using the correct form of words from the box.
One word is extra**

effective eliminate incentive inevitable pose trap

1. If something is _____ it is certain to happen.
2. A(n) _____ strategy is one that works well.
3. A law that _____ poaching, gets rid of it.
4. An animal that is _____ is caught and cannot get away.
5. A(n) _____ to do something encourages you to do it.

4 Read the information below and match the correct form of each word in bold with its definition.



The cheetah, an expert hunter, sits silently and scans for the perfect prey. Finding a target, it slowly **stalks** the animal until it is close enough to get its reward.

The cheetah is perfectly built for the kill. Its coloring allows it to **disappear** into the landscape to avoid being seen. And its speed allows it to chase its target. Once the prey is killed, the cheetah **drags** the animal to a safe place.

However, declining cheetah numbers mean that the animal's status is now vulnerable. To **reverse** the trend, game wardens are working to **enforce** the anti-poaching laws that should protect cheetah populations. It will be a sad day if this beautiful animal disappears from our planet.

1. to follow something in order to catch or kill it
2. to pull a heavy weight across the ground
3. to make something the opposite of what it is
4. to make sure people obey rules
5. the broad view that can be seen around you in the countryside
6. the state or condition of something at a particular time

Questions for discussion:

- Describe four ways in which endangered species are now being conserved and protected.
- Write down two problems that animals bred in captivity might have on being released into the wild, and suggest how they might be overcome.

Tropical rainforests

Read the text, translate the words in bold. Decide what type of the text it is (problem-solution, cause-effect, persuasion). Be ready to support your view.

The main and most important reason why tropical **rainforests** need to be preserved is the fact that they're **enabling** life on Earth. Not only do they **absorb** carbon dioxide and create oxygen in the process, they are also responsible for regulating temperature, producing important **nutrients** like nitrogen and phosphorus, and even protecting watersheds from **erosion** of salt as well. Tropical rainforests can be also quite helpful on field of pharmacology and new **medication researching** because between thousands of different plants that have their **habitat** here perhaps they are even hiding potential cure for menaces of the modern world like cancer and AIDS.

But what about their destruction, can this process be stopped? Between 1970 and now, Brazil lost more than 600,000 sq km (232 000 sq miles) of Amazon rainforest, which is very disturbing information. First let's point out the main **reasons** that are causing this high amount of deforestation.

Most important deforestation **factor** is clearing forest area for cattle pasture and it causes 60-70 % of total deforestation. Since cattle breeding is very profitable business and doesn't require high **maintenance expenditures** and gives very solid profit, it is very clear why such big percent of Amazon forest is being destroyed because of cattle pasture. Increasing number of cattle needs more area on which they can pasture and because of this reason forests are often being replaced by savannas and other coarse grasses.

Second great **cause** of deforestation is also connected with agriculture but this time with farms. Since most population in Brazil is still very much oriented on agriculture, large areas of forests are being **cut down** in order to leave more space to cultivable areas, where poor farmers are being stimulated by government politics to settle and work. Since farmers use fire in this process, whole procedure has its negative effect doubled, because not only forests areas are being **devastated** but also large quantities of carbon monoxide and carbon dioxide are being **released** in atmosphere having negative impact on the whole bio system and polluting air we breathe.

Although many people would think that **logging** is main cause for such huge deforestation that's not true because it causes only 2-4 % of total deforestation. Tropical rainforests are presenting large source of expensive wood among which special place has precious ebony and that's the reason why **illegal logging** is so much expanded and profitable business, namely because of high prices of this wood.

The last factor that causes deforestation is infrastructure building, especially of roads and dams and it makes about 2-4 % of total deforestation. Famous example of this politic is building of Trans-Amazonian Highway which had its purpose not only in connection between distant places but also in opening of new areas to farmers and easier exploiting of wooden riches. After this famous project was done, deforestation has gone to a whole new level and this presents a real example how building of infrastructure can cause complete **ecological chaos**. But can these factors be prevented or could they be at least slowed down until the level that could be more tolerable to environment?

There's still hope but only under these conditions.

First of all, former forest areas should be **rehabilitated** which is not that difficult process if at least small part of former bio system is saved.

Rehabilitation also needs higher productivity of cultivable areas and

intellectual approach to agriculture by using modern methods and by influencing farmers and their ecological conscience which often brakes down the whole procedure. The number of **protected forest** areas should also be increased and for that strong and systematic politic is needed.

Law should be very precise and very strict with huge punishments for its offenders, not only fines but also jail sentences for more severe lawbreaking. But the most important thing is to influence **ecological conscience** of all people by trying to present to them negative consequences of deforestation that could easily cause catastrophic effect on all life on Earth and result in even more expressed climate changes. Only fast intervention on all fields can have success, because humanity needs to find the right way while it still can. To create harmony between ecology and economy is very difficult task but by no means impossible.

Time is Running Short For the Tropical Forests

By Roger D. Stone

Fill the gaps with the missing sentences from below



In Europe and the United States, they say, deforestation was the inevitable and desirable consequence of economic progress; why should it be any different in the largely underdeveloped nations where the world's tropical forests arc found?

It is different. The rich soils and relative biological simplicity of the temperate world enhances forest

conversion and eventual reforestation. But in the tropical forest regions, soils tend to be poor. Life-supporting nutrients are stored not in soils but in the trees. Remove them and the whole fragile system collapses.

1)_____ Such forests supply the world with goods – hardwoods, rubber, fruits and nuts, drugs and medicines and fragrances and spices - that often cannot be raised in any but natural conditions. Harvesting beyond sustainable limits has already brought some of the tropical forests best hardwoods - Brazilian rosewood for example - near extinction.

2)_____ Estimates of the total number of species on the planet range up to 30 million, of which only 16 million have been identified. It is further estimated that tropical forests, while occupying only 7 per cent of the Earth's surface, may contain half of all it forms. Thus, relatively few tropical forest species have been studied. Concerned biologists view the heedless squandering of the tropical forests' resources as a tragedy.

Similarly, we depend on a small group of plants – corn, rice, wheat - for a large part of our sustenance. From time to time, plant pathologists have found, the commonly used strains of these plants requires genetic fortification from the wild to protect them from blight and disease. Since many such plants originated in tropical areas and only later were cultivated elsewhere, the primeval forests of the tropics represent a vast genetic storehouse of great potential value.

3)_____ But when the forests are burned, the carbon released plays an important role in the build-up of atmospheric gases producing the 'greenhouse effect,' which is causing a warming trend on the planet. This could turn America's Corn Belt into a subtropical region. And the melting of polar ice could raise sea levels and lead to drastic losses of coastal land.

Unfortunately, the present defoliation, motivated by short-term economic benefit, probably will continue unless a revolution in public and official attitudes comes to the rescue at the eleventh hour.

The writer is a conservation fellow at the World Wildlife Fund and author of a book about the Brazilian Amazon.

Roger D. Stone International Herald Tribune

a Many Americans feel that saving the worlds tropical forests warrants little serious concern

b Most species from the 'biological warehouse' of the tropical forests can also be kept and observed in zoos

c It is true that the tropical forests have little economic importance

d People and nature both lose when the tropical forest is clumsily invaded

c Many Americans are rightly concerned at the destruction of the tropical forests

f Moreover, destroying tropical forests can destabilise the world's climate

g Left untouched, tropical forests also contribute to the stability of the world's climate

h The tropical forest is also a biological warehouse

Wordbuilding

Complete each sentence with a word formed from the word in capitals.

a) The country's energy_____ is some 30% higher than a decade
CONSUME

ago. At the same time we have seen an increase in the use
of _____ energy sources such as wind power and solar power.
RENEW

b) An entire month's average _____ hit Bilbao yesterday, while RAIN
across the border in France, it's the opposite problem. The recent
lack of rain is likely to lead to water _____ in some areas.

SHORT

- c) The oil spill was described as 'an _____ disaster'.
It is thought likely to affect _____ within a
20-mile radius. ECOLOGY
WILD
- d) Numerous species face _____ if nothing is done about
the problem of _____. EXTINCT
FOREST
- e) Many _____ products, such as cleaning liquids
and bleach, contain _____ chemicals. HOUSE
HARM
- f) Kapo the gorilla was born and bred in _____.
In the wild Kapo's chances of _____ would be slim. CAPTIVE
SURVIVE
- g) The river cleaning project is run by conservation _____.
VOLUNTARY
- h) The white rhino is now an _____ species. DANGER
- i) _____ claim that the virus among seals was ENVIRONMENT
caused by pollution.
- j) The fish in the river provide an _____ supply
of fish for the young bears. ABOUND
- k) The whale shark reaches _____ at the age of 30. MATURE
- l) Nowadays only a _____ of wild crocodiles remain there. HAND
- m) Nowhere epitomises the wonderful _____ of nature DIVERSE
better than the jungle.

Animal life

Vocabulary *Fin, feather and fur*

1 Look at the following groups of words, which are all connected in some way to animals. What do the words in each group have in common?



amphibian bird fish insect mammal reptile
flock herd pack
domestic pet tame wild
chick cub kitten puppy
beak claw fin hoof horn paw tail wing
coat feather fur scale skin
bark buzz grunt hiss howl roar squeak
breed hatch hunt migrate nest
bite kick lick peck scratch sting
hunt pat pouch protect stroke train trap

2 Give an example of one animal which you associate with each word.



Lesson 6

Energy Crisis

Reading

With a little effort and not much money, most of us could reduce our energy diets by 25 percent or more. So, what's holding us back? Writer Peter Miller goes on a strict low-carbon diet to find out.

A Not long ago, my wife and I tried a new diet - not to lose weight but to answer a question about climate change. Scientists have reported that the world is heating up even faster than they predicted just a few years ago. The consequences, they say, could be severe if we don't keep reducing emissions of carbon dioxide (CO₂) and other greenhouse gases that are trapping heat in our atmosphere. But what can we do about it as individuals? And will our efforts really make any difference?

The Experiment

B We decided to try an experiment: For one month we would track our personal emissions of CO₂ as if we were counting calories. We wanted to see how much we could cut back.

C The average U.S. household produces about 80 kilos of CO₂ a day by doing commonplace things like turning on air conditioning or driving cars. This is more than twice the European average and almost five times the global average. But how much should we try to reduce?

D I checked with Tim Flannery, author of *The Weather Makers: How Man Is Changing the Climate and What It Means for Life on Earth*. In his book, he challenged readers to make deep cuts in personal emissions to keep the world from reaching critical tipping points, such as the melting of the ice sheets in Greenland or West Antarctica. "To stay below that threshold, we need to reduce CO₂ emissions by 80 percent," he said. "That sounds like a lot," my wife said. "Can we really do that?"

E It seemed unlikely to me, too. Still, the point was to answer a simple question: How close could we come to a lifestyle the planet could handle? Finally, we agreed to aim for 80 percent less than the U.S. average: a daily diet of about 13 kilograms of CO₂. Our first challenge was to find ways to convert our daily activities into kilos of CO₂. We wanted to track our progress as we went so that we could change our habits if necessary.

F To get a rough idea of our current carbon footprint, I put numbers from recent utility bills into several calculators on websites. The results that came out were not very flattering. The Environmental Protection Agency (EPA) website figured our annual CO₂ emissions at 24,618 kilos, 30 percent higher than the average U.S. family with two people. The main culprit was the energy we were using to heat and cool our house. Clearly we had further to go than I thought.

The Diagnosis

G We got some help in Week Two from a professional "house doctor," Ed Minch of Energy Services Group in Wilmington, Delaware, who we asked to do an energy audit of our house. The first thing he did was to walk around the outside of the house to see if the architect and builder had created any opportunities for air to seep in or out, such as overhanging floors. Next, he

went inside and used an infrared scanner to look at our interior walls. Finally, his assistants set up a powerful fan in our front door to lower air pressure inside the house and force air through whatever leaks there might be in the shell of the house.

H Our house, his instruments showed, was 50 percent leakier than it should be. Addressing this became a priority, as heating represents up to half of a house's energy costs, and cooling can account for a tenth. Minch also gave us tips about lighting and appliances. "A typical kitchen these days has ten 75-watt spots on all day," he said, "and that's a huge waste of money." Replacing them with compact fluorescents could save a homeowner \$200 a year. Refrigerators, washing machines, dishwashers, and other appliances, in fact, may represent half of a household's electric bill.

I Everywhere I looked, I saw things sucking up energy. One night I sat up in bed and counted ten little lights in the darkness: cell phone charger, desktop calculator, laptop computer, printer, clock radio, cable TV box, camera battery recharger, carbon monoxide detector, cordless phone base, smoke detector. What were they all doing? One study found that "vampire" power sucked up by electronics in standby mode can add up to 25 percent of a house's electric bill.

J "You can go nuts" thinking about everything in your house that uses power," said Jennifer Thorne Amann, author of *Consumer Guide to Home Energy Savings*. "You have to use common sense and prioritize. Don't agonize too much, and think about what you'll be able to sustain after the experiment is over. If you have trouble reaching your goal in one area, remember there's always something else you can do."

The Results

K By the last week in July, we were finally getting into the flow of the reduced carbon lifestyle. We walked to the neighborhood pool instead of driving, biked to the local farmers market on Saturday morning, and sat out on the deck until dark, chatting over the sound of the crickets. Whenever possible I worked from home, and when I commuted, I took the bus and subway.

L Our numbers were looking pretty good, in fact, when we crossed the finish line on August 1. Compared with the previous July, we had cut electricity use by 70 percent, natural gas by 40 percent, and reduced our driving to half the national average. In terms of CO₂ we trimmed our emissions to an average of 32 kilograms a day, which, though twice as much as we'd targeted as our goal, was still about half the national average.

M We can do more, of course. We can sign up with our utility company for power from regional wind farms. We can purchase locally grown foods instead of winter raspberries from Chile and bottled water from Fiji. We can join a carbon reduction club, or set up one of our own.

The Future

N What we really wanted to know was whether it would make any difference. Our low-carbon diet had shown us that, with little or no hardship and no major cash outlays, we could cut day-to-day emissions of CO₂ in half mainly by using less energy at home and on the highway. Similar efforts in office buildings, shopping malls, and factories throughout the nation, combined with incentives and efficiency standards, could halt further increases in U.S. emissions.

O Yet efficiency, in the end, can only take us so far. To get the deeper reductions we need, as Tim Flannery advised, we must replace fossil fuels faster with energy from wind farms, solar plants, geothermal facilities, and biofuels. We must slow deforestation, which contributes to the buildup of greenhouse gases, and we must develop technologies to capture and bury carbon dioxide from existing power plants. Efficiency can buy us time—perhaps as much as two decades—to figure out how to remove carbon from the world's diet.

P Not that there won't still be obstacles. Every sector of our economy faces challenges, says energy-efficiency guru Amory Lovins of the Rock Mountain Institute. "But they all have huge potential. I don't know anyone who has failed to make money at energy efficiency. There's so much low-hanging fruit, it's falling off the trees and mushing up" around our ankles."

Q The rest of the world isn't waiting for the United States to show the way. Sweden has pioneered carbon-neutral houses, Germany affordable solar power, Japan fuel-efficient cars, China wind-power installations, the Netherlands prosperous cities filled with bicycles. Does the United States have the will to match such efforts?

R Change starts at home with the replacement of a light bulb, the opening of a window, a walk to the bus, or a bike ride to the post office. My wife and I did it for only a month, but I can see the low carbon diet becoming a habit. As my wife said, "What do we have to lose?"

Reading Comprehension

Choose the best answer for each question.

GIST

1 The best alternative title for this reading would be _____.

- a. Replacing Fossil Fuels
- b. One Family's Energy Diet
- c. Our Current Carbon Footprint
- d. How People Are Changing the Climate

REFERENCE

2 The word *it* in paragraph A refers to _____.

- a. a new diet
- c. climate change

- b. an effort d. the world

DETAIL

3 About how much CO₂ does the average family in Europe produce a day?

- a. 40 kilos c. 160 kilos
b. 80 kilos d. 300 kilos

INFERENCE

4 The author is initially _____ reducing his family's CO₂ production by 80 percent.

- a. fairly agreeable to c. not very interested in
b. enthusiastic about d. not confident about

DETAIL

5 In paragraph I, what does the author say about the standby mode on electronic devices?

- a. Using it is an efficient way to save energy and money
b. It uses as much energy as leaving the device turned on.
c. It uses 25 percent less energy than turning a device off and then on again.
d. Using it can account for up to 25 percent of a household's electricity

PARAPHRASE

6 Which of the following is closest in meaning to this sentence (paragraph L)?
In terms of CO₂, we trimmed our emissions to an average of 32 kilograms a day, which, though twice as much as we'd targeted as our goal, was still half the national average.

- a. The author and his wife were not able to cut their CO₂ output to the national average, but they still met their goal.
b. The author's family reduced their CO₂ emissions to half the national average, but only reached half their targeted goal.
c. The author's family reduced their CO₂ output to 70.5 percent of the national average, but not as much as they had targeted.
d. The author's family planned to reduce their CO₂ emissions to half the national average, but they were able to reduce emissions by twice that much.

SUMMARISING

Complete the summary using numbers from the reading passage

Peter Miller and his wife started an experiment to see how much they could reduce

their personal CO₂ emissions over the course of 1 _____ month. The average U.S. household produces about 2 _____ kg of CO₂ per day. Miller and his wife decided to aim to reduce their CO₂ to just 3 _____ kg per day.

After calculating their current carbon footprint, the Millers discovered that they were producing 4 _____ percent more CO₂ than the average 5 _____ - person

family. The main reason was the energy they were using to heat and cool their homes. They asked professional "house doctor," Ed Minch to do an energy audit of their home. Minch suggested many ways in which the Millers could save energy. The Millers also started walking and cycling more often.

At the end of the month, the Millers had reduced their carbon emissions to an average of 6_____ kg per day. Though they hadn't quite reached their target, the amount was still 7_____ percent of the national average.

Speaking

CRITICAL THINKING Evaluating Solutions

Which of these ideas for reducing the carbon footprint of your school or college would be easy to implement? Which ideas would be more challenging? Which would have the greatest impact?

- Require recycling of all paper, plastic, glass, and electronics.
- Provide incentives to students who walk or cycle to school.
- Reduce the amount of heating and cooling used.
- Allow only the purchase of "green" products.
- Stop using fossil fuels.
- Require that all food and drink be locally sourced.

Writing

Distinguishing Main Ideas and Supporting Information

Most articles have a single, unifying idea (also called the thesis). In addition, each section of an article will normally have its own main idea, and so may individual paragraphs. The author develops these main ideas by supplying details, reasons, and explanations that strengthen the most important points. To clearly understand an article, it's important to identify main ideas and to distinguish between them and supporting information.

MAIN IDEA. *Complete the main idea of the whole reading in your own words.*

The author performed an experiment to see...

MAIN AND SUPPORTING IDEAS. Read the sentences below (a-h).

Complete the chart with four sentences that summarize the main ideas of the sections and four sentences that provide supporting information.

	Main idea	Supporting information
Section 1: The Experiment		
Section 2: The Diagnosis		
Section 3 The Results		

Section 4: The Future		
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- a. According to the EPA website, the author's annual household CO2 emissions totaled 24,618 kilos.
- b. Increasing household energy efficiency is a first step, but other measures are needed to tackle global warming.
- c. With some outside advice, the author learned his home was losing a lot of energy through heat leakage and household appliances.
- d. Although there was more he could do, the author was pleased that he was able to significantly lower his carbon footprint.
- e. To help reduce his carbon emissions, the author wafted and rtyied whenever possible.
- f. The author investigated his household carbon footprint and found it was surprisingly high.
- g. The author learned that compact fluoresce-its can save home owners about \$200 a year.
- h. Countries such as Germany and Japan have developed some innovative ways to reduce carbon emissions.

VOCABULARY PRACTICE



A. Complete the information using the correct form of the words in the box. One word is extra.
audit commonplace incentive mode obstacle threshold

On Marathon Monday half a million people line the streets of Boston to watch the oldest annual marathon in the world. For thousands of amateur runners, the main objective is to keep

below their pain 1 _____ and just try to finish the race.

For other runners, raising money for charity is the main 2 _____.

As with other large outdoor events, trash is a problem - discarded cups, bottles, and wrappers are 3 _____ along the course. In recent years, race organizers have

taken steps toward making the Boston Marathon more sustainable. Teams of volunteers now collect, sort, and recycle all the trash. Organizers also use energy-efficient electric scooters to support the race. But is it enough?

An "eco-friendliness" 4 _____ indicated that the Boston Marathon still has 5 _____ to overcome, such as its reliance on plastic bottles and water cups, before it can claim to be a truly sustainable race.

B. Complete the sentences by circling the correct words.

1. Reducing energy use can save customers money on their utility / compact bills.
2. Household obstacles / appliances can use a lot of electricity.
3. Putting your laptop on standby audit / mode can be a waste of energy.
4. Compared to SUVs, mode / compact cars are a more energy-efficient way to commute / audit to work.

C The words in the box are frequently used with the noun obstacle. Complete the sentences using the correct words. One word is extra.

hit overcome major present

Current economic conditions _____ a huge obstacle to hitting our financial targets.

A(n) _____ obstacle to achieving one's goal is lack of money.

To be successful, a professional athlete must learn to _____ obstacles.

Exercises

1 Reading and Grammar

Read the text, open the brackets using the necessary verb form, put in the prepositions where necessary:

Energy crisis

Industry is driving force behind this terrible environmental mess we created over the years, industry **(base)** _____ fossil fuels that harm our environment by **(create)** serious ecological problems such as climate change and pollution. I'm aware _____ the fact that we cannot go back in the pre-industrial period **(save)** our environment but **(make)** our industry more environmentally friendly would definitely be a wise thing **(do)**. In order **(do)** so we must weaken our reliance _____ fossil fuels **(satisfy)** world energy demand.

Fossil fuels such as coal, oil, and natural gas despite **(be)** fundamental parts of industrial revolution, and economical development of the world cannot hide from the fact that they are evil for nature and our environment. The most serious sign of how excessive is our use of fossil fuels is definitely climate change problem that could result _____ fatal consequences in years **(come)**. But despite different warnings from scientists and environmentalists world still sticks _____ fossil fuels because industry and strong economies are what matters in this morale-less civilization of ours.

Renewable and natural energy sources like water, sun, and wind all have great potential **(satisfy)** future energy demand by **(do)** negligible environmental damage compared _____ dominant fossil fuels yet we fail (use) these alternative energy sources. The most common excuse is that these energy sources still need lot of research before **(use)** on global scale. OK then, let us **(do)** more research and make them globally **(accept)** energy sources and we have the right solution **(stop)** the majority _____ our environmental problems. Easy as that? Not quite.

In order **(do)** so you need to have political will on your side because nothing can **(do)** today without adequate political support. And politicians despite **(promise)** dominant renewable energy sector in close future are not the persons you should trust too much. Why? Because of powerful fossil fuels lobbies that control a big part of politics making development of renewable energy sector extremely difficult.

Just take a look _____ president Obama. Hasn't he during his campaign and inauguration promised drastic cuts _____ emissions and serious development of renewable energy sector? And what is happening now? He's basically saying how industry is too valuable for massive CO2 cuts, and how this should **(postpone)** till some better times. If we continue this trend of environmental

abuse we can forget about better times because all we'll have will be disaster and misery.

2 Vocabulary

Complete the following using the appropriate form of one of the words in italics from below.

*reduce control harness affect improve provide repair damage
congested destroy harm emission pollute reduce*

Example:

The recycling of certain kinds of waste is now common practice. Glass, paper and most metals are now _____ at special plants. But many more such plants need to be _____ .

Answer: recycled, provided

a Air pollution is a huge problem in most of the world's big cities, and people complain about it constantly. However, what _____ the air most is the exhaust from the vehicles which those same people drive. One solution would be to strictly _____ the amount of driving people can do in cities.

b Cars emit poisonous gases such as carbon monoxide and carbon dioxide. Steps are being taken to _____ these _____ by fitting new cars with 'catalytic converters' which make most of the gases harmless.

c Thousands of hectares of the world's rainforests are destroyed every year. This _____ of the rainforests is expected to _____ the global climate, as well as wildlife, in various ways.

d Scientists now believe that the ozone layer is being damaged by the chemicals in certain common products, such as deodorants and hairspray, and the chemicals given off by air-conditioners. The _____ caused to the ozone layer can never be _____.

e Everyone knows that nuclear waste can harm the environment. But until it becomes possible to _____ the natural energy of the sun, the wind and the waves, it will be impossible to meet man's energy needs without producing _____ waste of one kind or another.

f As cities become more congested with traffic, local councils tend to widen streets and try to _____ the flow of traffic. Of course, this encourages more people to drive in the city, and the _____ increases again.

3 Reading and Translation

Complete the text by translating the missing sentences from Ukrainian to English

Alternative Energy Sources is the future!

Alternative Energy Sources is the future! Do you think this is wrong? We will prove to you that this is true. But first let's understand what alternative energy sources are?

Any energy source that is an alternative to fossil fuels.

These are renewable sources that include energy from solar radiation, wind, seas, rivers, biomass, Earth's heat, and secondary energy resources that exist constantly or occur periodically in the environment.

What are the benefits of alternative sources? First, alternative energy sources conserve nature! 1_____. But we have an alternative - electric cars. They do not pollute the environment at all.

Наприклад, бензин - це перероблене викопне паливо. З кожним днем від спалювання бензину виділяються сотні мільйонів тонн CO₂, озонові діри збільшуються і глобальне потепління наближається.

We can talk about more global things too! Ready to bet that you are reading this text on your computer, which means you have electricity at home. How often do you think that all your electricity is produced by nuclear power plants? And now let's remember what happened to the Chernobyl nuclear power plant in 1986 and Fukushima in 2011. Nuclear power plants are very dangerous. If there is an accident, everything will suffer. People, animals, plants are affected.

But we know what to do. 2_____. And the most interesting thing is that with the help of solar panels or wind and water power plants, everyone can generate their own electricity at home. Imagine being able to not only generate electricity but also sell it. You Can Make Money On It!

Атомні електростанції можуть замінити сонячні батареї, вітрові або водяні електростанції.

If you can not install a wind farm in the yard or the river is too far away, you may want to use another option. You can use the energy of the earth! Wherever your home is, it will stand on the ground. And the earth has an incredibly hot core. Use a heat pump 3_____.

або будь-який інший механізм, який не тільки буде нагрівати ваш будинок енергією від землі, але і генерувати власну електроенергію.

If we haven't convinced you yet, we will do it now. Answer the following question: Do you eat food? We are sure that the answer is yes.

4_____. And do you know that you could produce your own biogas from this waste! With biogas plants, you can at the same time get rid of your waste and produce green gas for your own needs.

5_____!

Якщо ви їсте їжу, у вас точно мають залишатись органічні відходи. Таким чином ви не забруднюєте природу і не використовуєте викопне паливо!

The complete transition from fossil fuels to alternative energy sources will open many new opportunities for you. Everyone can save nature, make money

through nature and make your life comfortable! Choose alternative energy sources and become modern, wealthy and happy. Remember, alternative energy is the future!

Comprehension questions

1. What are the two categories of energy?
2. What is the alternative to burning gasoline?
3. What is the danger of nuclear power plants?
4. What can be used instead of nuclear power plants?
5. What can be extracted from organic waste?

4 Fill the gaps with any word that fits

Industrial Ecology

Industrial ecology is 1)..... interdisciplinary framework for designing and operating industrial systems as living systems interdependent with natural systems. It seeks to 2)..... environmental and economic performance within emerging understanding of local and global ecological constraints. Some of its developers 3)..... called it "the science of sustainability". Industrial ecology supports coordination of design over the life cycle of products and processes. It enables creation of short-term innovations with awareness of their long-term impacts. It 4)..... design local solutions that contribute to global solutions.

Industrial ecology helps companies 5)..... more competitive by improving their environmental performance and strategic planning. Industrial ecology helps communities develop and maintain a sound industrial base and infrastructure 6)..... sacrificing the quality of their environments. And it helps government agencies design policies and regulations that improve environmental 7)..... while building business competitiveness.

Industrial ecology principles and methods can be 8)..... by service as well as manufacturing companies. Application of industrial ecology 9)..... improve the planning and performance of government operations, including local, regional, and national levels of infrastructure. 10)..... much of the initial work in industrial ecology has focused on manufacturing, a full definition of industrial systems includes service, agricultural, manufacturing, military, public operations, such as infrastructure for landfills, water and sewage systems, and transportation systems.

Lesson 7

Sustainable development

Reading

GOALKEEPERS FOR THE PLANET

A In 2015 at the United Nations, world leaders adopted 17 Sustainable Development Goals aimed at reducing poverty, inequality, and other global problems by 2030. Such objectives have long been championed by philanthropists Bill and Melinda Gates. In 2017, the Gates Foundation launched Goalkeepers, an initiative to spur action¹ and track progress toward the UN goals. Its 2018 status report says there have been "mind-blowing improvements in the human condition." The report also calls for more investment and innovation to ensure this progress continues.

B Susan Goldberg editor-in-chief of National Geographic Magazine, met with Bill and Melinda Gates for a joint interview on the report, which was released to the public on September 18, 2018.

C I've just read the Goalkeepers report. Why did you decide to start doing this?

Melinda Gates: Because we think that the news isn't really out there - the news that the world has made this incredible progress, this increase in lives saved, the reduction in poverty. The UN set these amazing goals for the future to help us continue to reduce poverty, and we want to make sure that we hold people accountable for that progress and really inspire the next generation of leaders who are going to take these tasks on.

D What are you seeing in different countries? Who's doing a great job?

Bill Gates: Even a very poor country can do a good job on health, can do a good job on agriculture, on education, and that provides a lot of hope because you can copy what's being done there. Rwanda has been a big outlier in the quality of health services. Ethiopia, on agriculture, is growing over 5 percent a year. In education, Vietnam is one we talk about because they're so far ahead of where you'd expect given their wealth. But it's when you get those three things together - health, education, agriculture - that eventually these countries can become self-sufficient.

E MG: One of the things that's also encouraging: Rwanda is a very small country [in population], Ethiopia is the second largest on the continent of Africa - but they have learned the lessons of what has helped people make progress from around the world. So they're looking at what happened in Asia in agriculture, how did Brazil decrease the stunting¹ rate (among malnourished children) so phenomenally across a very large country with lots of poverty.



SUSTAINABLE DEVELOPMENT GOALS



1 NO POVERTY
End poverty in all its forms everywhere



2 ZERO HUNGER
End hunger, promote improved nutrition and sustainable agriculture



3 GOOD HEALTH AND WELL-BEING
Ensure healthy lives and promote well-being for all at all ages



4 QUALITY EDUCATION
Ensure inclusive and quality education and promote lifelong learning



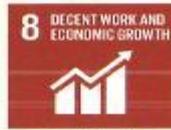
5 GENDER EQUALITY
Achieve gender equality and empower all women and girls



6 CLEAN WATER AND SANITATION
Ensure availability and sustainable management of water and sanitation for all



7 AFFORDABLE AND CLEAN ENERGY
Ensure access to affordable, reliable, sustainable, and modern energy for all



8 DECENT WORK AND ECONOMIC GROWTH
Promote inclusive and sustainable economic growth, and decent work for all



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
Build resilient infrastructure, and foster innovation



10 REDUCED INEQUALITIES
Reduce inequality within and among countries



11 SUSTAINABLE CITIES AND COMMUNITIES
Make cities and human settlements inclusive, safe, and sustainable



12 RESPONSIBLE CONSUMPTION AND PRODUCTION
Ensure sustainable consumption and production patterns



13 CLIMATE ACTION
Take urgent action to combat climate change and its impacts



14 LIFE BELOW WATER
Conserve and sustainably use the oceans, seas, and marine resources



15 LIFE ON LAND
Sustainably manage forests, combat desertification, and halt biodiversity loss



16 PEACE, JUSTICE AND STRONG INSTITUTIONS
Promote peaceful and inclusive societies for sustainable development, and access to justice for all

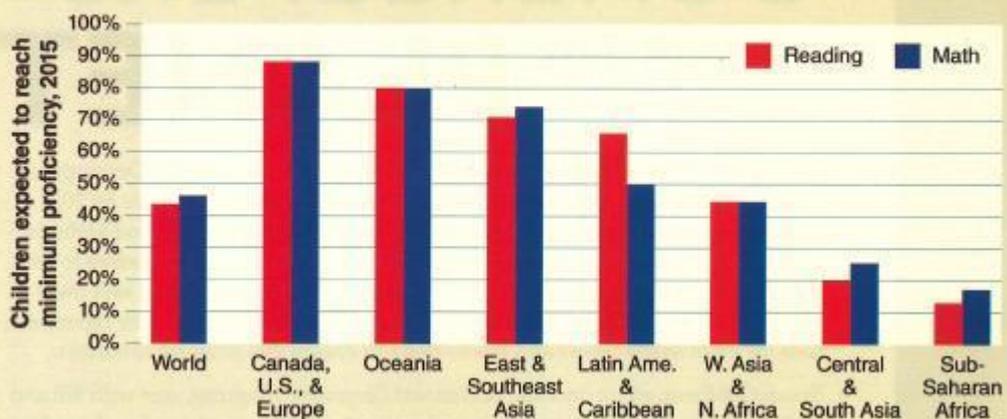


17 PARTNERSHIPS FOR THE GOALS
Revitalize the global partnership for sustainable development

The UN Sustainable Development Goals provide a blueprint for achieving a better and more sustainable future for all by 2030. They aim to tackle global challenges, including poverty, inequality, and environmental degradation

ACADEMIC ACHIEVEMENT

While more children are attending school in every region of the world, there is still work to be done in many countries to improve the quality of education.



Sources: Bill & Melinda Gates Foundation

F When you think about learning from one another, I was struck by the example from Vietnam, where you've got 15-year-olds who are doing as well on international tests in school as people from the United Kingdom or from the United States. What are the lessons from Vietnam that can translate across other countries?

BG: It's a really new thing to try and get into the amount of learning. The agenda for poor countries up until now has largely been to get the kids into school - and attendance

rates have gone up a lot, for girls and boys. The biggest missing piece still is how much knowledge the/re gaining. A few countries, by training the teachers the right way and bringing the right material into the classroom, have really achieved learning way beyond what you might expect.

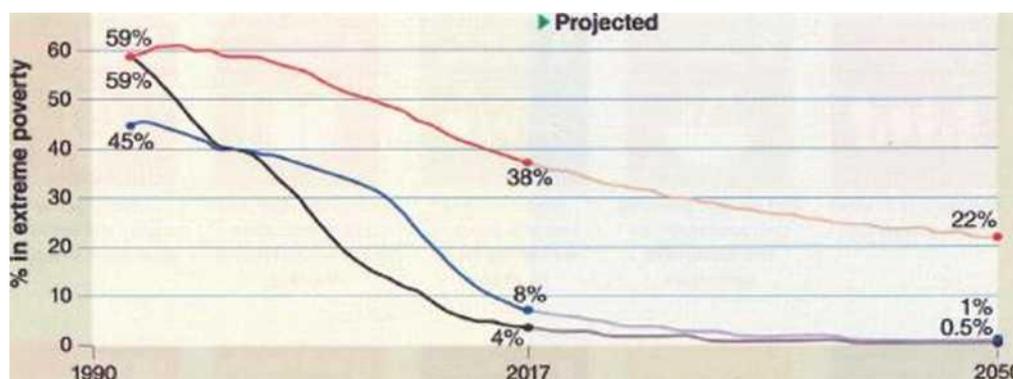
G MG: When you look back at the IJN goals that were initially set in 2000, one of the goals was to get kids into school, and that has essentially been achieved, particularly at the primary level and quite a bit at the secondary level. So it's neat to see a goal achieved, but now with this next set of goals, it's about how to get the depth of learning and the education right.

H *Thinking about Africa: How young it is, how many young people there are, is both a huge challenge and a great opportunity. Can you talk a little bit about that?*

BG: The African continent today is about a billion people out of the seven billion on Earth, and as this century goes forward, over half the young people in the entire world will be there. With those people moving into the job market, if the right investments are made - stability, education, health - Africa will have growth and innovation, far more than lots of other places. If, on the other hand, we don't take care of the HIV crisis, then you'll just have more people who will get infected. If you don't have the right conditions, then the young people, particularly the men, can add to that instability. So Africa definitely hangs in the balance.

POVERTY

Around the world, the percentage of people living in extreme poverty has fallen significantly since 1990. However, in sub-Saharan Africa, the figure remains relatively high, especially in the fastest-growing countries.



— SUB-SAHARAN AFRICA --- SOUTH ASIA --- SOUTHEAST ASIA, EAST ASIA, AND OCEANIA

Sources: Bill & Melinda Gates Foundation

I *Melinda, family planning has been one of the issues that you're most involved in. Can you talk to me a little about that?*

MG: Family planning is crucial anywhere, in any community around the world, because if a woman can decide if and when to have a child, she's going to be healthier and her child is going to be healthier. That's one of the longest-standing pieces of global health research we have ... [If parents] can space the births of those children, they can then feed them, they can educate them, the

woman can work and contribute her income to the family. It changes everything in the family dynamic, and it changes the community, and ultimately you get these country-level effects where it's good for everybody.

J You've gone all over the world and seen the problems up close. If you could wave a magic wand and fix just one thing, what would it be?

BG: The development of children. Today more than half the kids in Africa never fully develop physically or mentally because of malnutrition, their diet, and the diseases they face. With research on the human gut microbiome we're gaining an understanding of stunting, why they don't grow. I'm super excited that by the end of the decade we expect to have cheap interventions so those kids will fully develop. That means all the investments you make in their education, wanting to benefit from their productivity, will work far better. So if there was just one thing, it's the intervention to stop malnutrition.

Reading Comprehension

Choose the best answer for each question.

GIST

1 The Goalkeepers report was_____.

- a) mostly optimistic
- b) somewhat pessimistic
- c) extremely pessimistic
- d) mostly inconclusive

REFERENCE

2 In the third sentence of paragraph D, what does **that** refer to?

- a) the fact that new generations of leaders are being inspired
- b) the fact that even very poor countries are making progress
- c) the fact that many countries are becoming totally self-sufficient
- d) the fact that the UN set extremely difficult goals

DETAIL

3 Bill Gates indicates that there has been a significant improvement in all three areas of health, agriculture, and education in

- a) Rwanda
- b) Ethiopia
- c) Vietnam
- d) none of these three countries

UNDERSTANDING INFOGRAPHICS

4 What does the Poverty infographic tell us about Sub-Saharan Africa?

- a) Poverty is steadily rising.
- b) Poverty is falling more slowly than in other regions.
- c) Poverty has remained about the same as in the past.
- d) Poverty is at about the same level as Southeast Asia

VOCABULARY

5 The word **phenomenally** in paragraph E is closest in meaning to

- a) gradually
- b) effortlessly
- c) amazingly
- d) deliberately

DETAIL

6 According to Bill Gates, countries wanting to improve their educational system should focus on _____.

- a) getting more and more students into the classroom
- b) expanding the size of schools and building more schools
- c) training teachers and getting better classroom materials
- d) preparing students to take international tests

SYNTHESIZING

7 Which of the goals from the list of sustainable development goals is Bill Gates most concerned with?

- a) Goal 2
- b) Goal 5
- c) Goal 7
- d) Goal 9

SCANNING

Look back at the reading passage and charts. Circle T (true), F (false), or NG (not given).

- 1. The Goalkeepers report was produced by the UN. T F NG
- 2. The stunting rate among malnourished kids in Africa has decreased since 2000. T F NG
- 3. Nearly half of the world's young people currently live in Africa. T F NG
- 4. East Asia and Southeast Asia have better reading and math proficiency than the world average. T F NG
- 5. Poverty in South Asia has increased since 2017. T F NG
- 6. Math proficiency in Central and South Asia is above the world average T F NG
- 7. The UN's Sustainable Development Goals are listed in order of importance. T F NG



Speaking

CRITICAL THINKING **Evaluating Ideas**

Work in a group. Look again at the Sustainable Development Goals. Which three do you think are the most important for furthering development in your country?

What are some steps that people could take to help meet

each goal?

Making Inferences (1)

When reading a text, it is often possible to infer information that is not stated directly. We can draw upon information and arguments in the text together with our own background knowledge, to infer things that are probably true.

When you make inferences, think about what evidence or information led you to make the inference.

A. Look back at Reading B. Choose the best answer for each question.

1 In paragraph A, what can we infer about the UN Sustainable Development Goals?

- a) Member countries agreed to them
- b) The Gates Foundation wrote them
- c) They are not officially approved yet,
- d) They only apply to developing countries

2 In paragraph C, we can infer that Bill and Melinda Gates produced the Goalkeepers report because

- a) not enough progress was being made
- b) a lot of people aren't aware of the UN's progress
- c) the news media is not good at producing reports
- d) the UN didn't want to do it

3 Based on information in paragraph E, which of these opinions do you think Melinda Gates would likely agree with?

- a) It's easier to make progress towards the sustainable goals if a country is large.
- b) Most African countries should copy Brazil's model for reducing stunting.
- c) Rwanda and Ethiopia are the best places to live in Africa.
- d) Countries should consider adopting successful ideas from around the world.

4 According to the information in paragraph I, which of the following statements would Melinda Gates most likely agree with?

- a) The importance of family planning has only recently been fully understood.
- b) There is no evidence that family planning has any effect upon a family's overall health.
- c) It has been known for a long time that family planning is extremely important.
- d) It's important that governments restrict the number of children families can have.

B. For each item in Activity A, underline the evidence or information in the reading passage that helped you infer the correct answer.

Vocabulary

A. Complete the information using the correct form of the words in the box. One word is extra.

dynamics initiative instability investment outlier productive

Today, 3 in 10 people are still not able to access safe drinking water. But progress is being made. With the aid of the UN, local communities are making 1 _____ in

better freshwater and sanitation facilities.

One such success story is in Sierra Leone. Wracked by years of political

2 _____

and conflict, the country's infrastructure was in ruins. Students at the Harry C. Primary School in Masorie, for example, were not able to use their broken well for over a decade.

But a(n) 3 _____ between UNICEF and a local organization fixed the well, meaning students no longer had to spend time fetching water from outside the school grounds. Now students can spend time on more 4 _____ educational tasks.

The fixed well in Masorie is not a(n) 5 _____ - over the past 25 years Sierra Leone says access to safe drinking water has nearly doubled.

Definitions

B. Complete the definitions using the words in the box.

accountable dynamics initially innovation intervention

1. If you are _____ to someone for something, you are responsible for it.
2. The word _____ refers to the beginning of a process or situation.
3. A(n) _____ is a situation in which you become involved with and try and change.
4. A(n) _____ is a new thing or a new method of doing something.
5. _____ are the factors that shape a personal relationship.

Collocations

C. The word initiative is part of several common expressions. Complete the sentences using the correct form of the phrases in the box.

global initiatives a lack of initiative take the initiative

It's important that local people _____ and pressure politicians to act quickly.

The UN's Sustainable Development Goals are _____ aimed at improving the lives of people around the world.

I think both countries are snowing _____ in solving the dispute.

General vocabulary exercises

1 Choose the correct variant:

Student's Wake-up Call

By Alejandro Frischeisen

I'm a thirsty guy and in my college senior year I became know about/ aware of/ familiar of my environmental impact. As I trudged up the dorm stairs with my daily panoply of water bottles, Gatorade, and iced teas, I saw a flyer on a bulletin board. The flyer described the enormous expenditure of oil the beverage industry uses in/ on/ for manufacturing, transporting and refrigerating plastic bottles. That was my wake-up call and spurred me for undertaking/undertook/ to undertake a Master's programme in environmental studies. A "greener" lifestyle doesn't have to mean a complete upending of your current lifestyle. I know that as humans, we are all attached to our little comforts, be/ are/will be they

driving cars or using electronic gadgets, but every small change we make to our lifestyle can help collectively reduce our environmental impact. Do we really want our legacy as humans being/ is/ to be a plastic island twice the size of France, floating in the Pacific, and which no government will touch? Or the destruction of countless fauna and flora as a result/ due to/ because burning of fossil fuels, logging, mining, and other physical alterations to the environment? Or the mountains of rubbish in our landfills that will not disintegrate for countless generations?

Humans have made innumerable advancements throughout history, but today we are also making both a greater and a faster destructive impact on the environment than ever before. However/ On the one hand/ While there is no question that many advancements have benefited us, we have to learn how/ why/ whether to innovate technologies that are not harmful to the environment.

It wasn't the "Don't Litter" ads or the famous Native American television commercial what/ it/ that ignited my environmental awareness, but instead the amount of plastic I used.

Different issues will/ shall/ should motivate different people, but it is my firm opinion that each person has to find what will motivate him or her to take better care of this planet, because if we don't, there will be nothing left to pass on to our future generations. I want to make a difference and I want to raise awareness among my peers so that together we can save our environment.

2 Choose the right word from the box to fill the gap

absorb	contaminated	environment	dumped	fossil fuels
fallout	endangered	extinct	carbon dioxide (CO ₂)	emissions
		conservation	perish	

1. The best way to help our _____ is to develop global ecological conscience and establish a new set of values where our environment and nature in general would rank above money and power.
2. There's a huge biodiversity loss because many plants and animals are going _____, water and air pollution is killing millions of people across the globe, and our forests, especially rainforests are disappearing.
3. Forests not only _____ vast quantities of _____ (CO₂), they also have other vital functions...
4. Climate change is one of the biggest reasons why today there are so many _____ animals.
5. The most obvious solution on how to tackle climate change is to significantly reduce the carbon _____ on global level.
6. The world is still heavily dependent on _____.
7. Many of animals will likely forever _____ from the face of our planet.
8. Every day rubbish and chemicals are taken out to sea and _____.
9. These incredible animals need to survive, and _____ efforts must continue.

10. Large areas of the surrounding countryside were _____ and there was _____ all over the region.

3 Match the word with the right definition

1. Habitat	a. to cause or allow to run or fall from a container, especially accidentally or wastefully
2. tide	b. to decrease seriously or exhaust <u>the</u> abundance or supply of smth.
3. Precipitation	c. the ground or earth
4. To thaw	d. falling products of condensation in <u>the</u> atmosphere, as rain, snow, or hail
5. Soil	e. to pass or change from a frozen to a liquid or semiliquid state; melt
6. To deplete	f. proceeding from the sun, as light or heat
7. To exterminate	g. to get rid of by destroying; destroy totally; extirpate
8. Solar	h. variety
9. Diversity	i. the rise and fall of sea levels caused by the combined effects of the gravitational forces
10. To spill	j. the natural environment of an organism

4 Fill the gaps with the words from your word list.

Hazardous Waste,

When hazardous substances are released into the (1)___ as waste, they may contaminate the air, soil, surface water, or groundwater, and they may (2)___ people and ecosystems.

There are no reliable estimates of how much hazardous (3)___ the world produces. One estimate is 375 million metric tons each year; another estimate is nearly 500 million tons for just 19 countries.

The chief producers of hazardous wastes are the (4)___ and petrochemical industries, which contribute nearly 70 percent of these wastes in industrialized countries. In the United States, about two-thirds of hazardous wastes is disposed of on land, into (5)___ wells, surface (6)___ such as pits and ponds, or landfills. These disposal sites are all subject to (7) that can (8)___ groundwater. Another 22 percent of U.S. hazardous wastes is discharged into sewers or directly into streams and rivers, and only about 11 percent is (9)___ or processed to eliminate or reduce its (10)___ before discharge.

Some industrial countries process a larger portion of their hazardous waste to reduce its toxicity before discharging it. In West Germany, for example, about 35 percent of the waste receives detoxification treatment, 15 percent is incinerated, and 50 percent is discharged into (11)___.

5 Fill the gaps with the words from your word list

[What is the best way to help our environment?](#)

The best way to help our 1)_____ is to develop global ecological conscience and establish a new set of values where our environment and nature in general would rank above money and power. However, in a world driven primarily by the hunger for money such ideas are nothing but a nice dream and an utopia.

The environmental condition of our 2)_____ gets worse by the each day; the negative impact of climate change is already knocking on our door, there's also a huge biodiversity loss because many plants and animals are going 3)_____, water and air 4)_____ is killing millions of people across the globe, and our forests, especially 5)_____ are disappearing.

The future outlook looks anything but bright, and by the current looks of it our future generations will likely struggle to survive. What kind of heritage will we leave to them? Do they really deserve to suffer because of our negligence and our disrespect towards the Mother 6_____?

World leaders worry only about economy and their political interests, while environmental issues usually end up in "wait for better times" agenda. The world leaders still fail to 7)_____ that without the right action there won't be better times, and that things will soon get totally out of our control.

Take for example a climate change phenomenon. If only half of that what scientists are saying is true then we are surely heading for the scenario seen only in movies of disaster.

The time for action is running 8) _____, and yet so many people remain ignorant about it. Many people 9)_____ very little or none at all about what will our planet look like in 50 or 100 years from now.

We must ask ourselves what will 10)_____ to our children and grandchildren if we remain ignorant about our environment. Their destiny lies in our own hands.

Writing

Write about the following topic:

Different types of environmental pollution seem to be affecting an increasing number of people in the world.

What do you think are the causes of this problem and what solutions would you suggest?

Give reasons for your answer and include any relevant examples from your knowledge or experience.

Nowadays more and more people are falling under the influence of environmental pollution. High rates of industrialisation and the lack of sustainable consumption culture are the main reasons that contribute to a significant portion of humans suffering from negative consequences of environmental contamination. The world community should take actions such as deploying clean technology, setting strict limitations for all manufacturing companies and switching from excessive to conscious consumption in order to combat this issue.

There is no such a place on the planet which hasn't been occupied by numerous factories. Therefore, every year more people around the world are bound to feel harmful effects of environmental pollution caused by manufacturing. The current need to satisfy individuals' demand for various products has led to the emergence of thousands of plants which, unfortunately, don't follow net-zero emissions policies and as a result poison air, water, and soil. The way forward could be introducing a new legislation to limit toxic emissions from mass production and equipping plants with modern green technology.

Another factor that multiplies a number of people affected by environmental contamination is unsustainable consuming habits. By purchasing more, the world community accumulates more refuse and, thus, fouls our planet. For instance, having bought a state-of-the-art product today, individuals are ready to throw it away tomorrow in order to get next cutting-edge goods. For the most part this garbage either isn't recycled and is left to decay on its own or is burnt and an immense amount of carbon dioxide is released into the air that humans inhale. One possible solution is to change people's mindset and instill a habit of mindful and responsible consumption.

In conclusion, a rapid rise in number of people exposed to negative effects of pollution is due to the growth of manufacturing and people's ignorance of eco-consumption. In terms of solutions, society should invest in eco-friendly technology, ban those which keep polluting our ecosystem and turn to sustainable consumption that will provide a better future for all of us.

MAKING EFFECTIVE PRESENTATIONS

1 Listen to [five people](#) talking about a memorable presentation they have heard. Match each speaker to the reason why the presentation was effective.

- a) The presenter delivered his message in a clear voice.
- b) The presenter used some effective techniques to express his idea.
- c) The presenter used memorable images in her slide presentation.
- d) The presenter quoted from a poem.
- e) The presenter told a story at the beginning of his talk.

2 Can you recall a particularly effective presentation? If so, why was it so impressive?

3 **Rhetorical techniques** Presentations can be persuasive or informative. If they are persuasive, presenters often use rhetorical techniques to make their presentations more effective. Look at the definition of a rhetorical device. Can you think of an example of one?

A rhetorical device is a technique which uses language to increase the persuasiveness of a piece of writing or speaking. It is often used to emphasise a point or to produce an emotional response in the reader or listener.

4 Match rhetorical techniques (1-11) with examples (a-k). Sometimes there is more than one possible answer.

1 Rhetorical questions (asking a question but not expecting an answer)	a The film <i>Heaven's Gate</i> was one of the biggest failures in history but some critics consider it a masterpiece.
2 Quotation	b In <i>Sleepless in Miami</i> , he was like a man in a coma for most of the film.
3 Alliteration (repeating sounds at the beginning of words)	c Why would anyone want to see the film when they can't relate to the characters?
4 Contrast	d ' <i>In the House</i> is a clever psychological comedy. It is François Ozon's best work to date.' Film critic.
5 Repetition	e His performance was intelligent, intuitive and intense.
6 Simile	f Alfred Hitchcock's film <i>Rear Window</i> is undoubtedly the greatest film ever made.
7 Tripling (listing or chunking points in sets of three)	g On the one hand, the film held your interest. On the other hand, the ending was disappointing.
8 Imagery (metaphor)	

9 Hyperbole (using exaggerated language for effect)	h She had the smile of an angel, but the soul of the devil. i It was a long film. It was a boring film. It was a film that shouldn't have been made.
10 Anecdote (a short story based on your personal experience)	j When I was in Paris, I met the director of the film that shouldn't have been made.
11 A surprising fact, statistic or opinion	k He was the son of a millionaire. She was from a shanty town.

Presentation assessment

Content

- Is there evidence of research?
- Are references used and sources reworked, and made relevant to the presentation?
- Is there evidence of learning?
- Is there evidence of critical thinking and analysis?
- Is a good argument presented?
- Are reasonable conclusions drawn?

Structure

- Is there an introduction that opens up the topic and gives the background for the presentation?
- Are there a number of identifiable main points?
- Is there a conclusion that sums up the presentation and leaves the audience with a clear message?

Presentation skills/Use of visual aids

- Is there good use of body language?
- Does the speaker have good eye contact with the audience?
- Does the speaker engage the audience?
- Is the speaker comfortable using notes or cue cards, not script?
- Is the digital presentation well designed without too much text on each slide?

Language skills

- Is there good use of signposting language to guide the listener through the presentation?
- Does the speaker make good use of academic register?
- Is the speaker easy to understand?
- Is there appropriate use of intonation and stress?

- Is there good use of specific vocabulary?
- Do grammatical mistakes get in the way of meaning?

Exercise 1. Look at the list below. Choose the things you think are important and appropriate for a university presentation. Add three more features you think are important.

- anticipating problems
- using effective body language and eye contact
- using visual aids effectively
- engaging with your audience
- giving as much detail as possible
- being well organized
- making the audience laugh
- planning and rehearsing
- including relevant content
- speaking effectively
- writing a script and reading it carefully

Exercise 2. Read the explanations and examples below. Complete the gaps by writing one of the features you selected in Exercise 1.

- Having a clear introduction, main part and conclusion, and keeping to the time limit.
- Talking about things the audience will be interested in and will not already know.
- Speaking from notes instead of from a script and using your voice effectively, with clear pronunciation.
- Using your body to make your message clear, and making eye contact with your audience.
- Capturing the interest of your audience and getting them involved.
- Using tools like PowerPoint and handouts to support your presentation.
- Organizing the time you have to prepare and practice your presentation in advance.
- Thinking about and planning ahead for things that might go wrong.

You are going to watch a presentation on *The Girl with the Dragon Tattoo* at a university film society. Watch [the presentation](#) and answer the questions.

1. What are Mikael and Lisbeth trying to find out in their investigation?
2. Who is the more interesting character, Mikael or Lisbeth? Why?
3. Why has the film been so successful?

Watch the presentation again and note some of the rhetorical techniques used by the presenter.

Useful phrases for presentations

Starting	I'd like to talk to you today about...
Signalling structure	The presentation is organized into three sections. I'll begin with ... Next, ... and lastly, ...
Moving on	Turning to the next part, ... Let's now look at ...
Summarising	In conclusion, I would just like to say ... To summarise ...
Inviting questions	Now if there are any questions, I'll be happy to try and answer them. Please feel free to ask any questions and I'll do my best to answer them.

Post-presentation self assessment form

What went well:
What didn't go well:

DESCRIBING INFORMATION IN GRAPHICS

- Refer to a graphic by first identifying it and then highlighting specific information that you want readers to notice. *Chart 1 shows ____.* *The graph shows (that) ____.*

Chart 1 shows that most students watched one hour or less of TV per average school day.

The graph shows how many hours a day individuals from certain countries spend watching television.

The graph shows that there is a relationship between weight and amount of exercise.

- You can use passive forms to identify a graphic. *From ____, it can be concluded / estimated / inferred / seen that ____.*

From the chart, **it can be concluded that** individuals in the United States are getting much less exercise than a few decades ago.

From the chart, **it can be inferred that** individuals in Switzerland maintain active lifestyles and healthy weights.

- You can use these nouns to describe change: ↑ *increase, rise*, ↑↓ *fluctuation*, ↓ *decline, decrease, drop, fall*.

There was **an increase** in girl's participation in team sports from 2002 to 2010.

Figure 1 shows **the fluctuation** in funding for physical education in the last three decades.

There was **a decrease** in students' participation in physical education between ninth grade and tenth grades.

- You can use the following adjectives to describe the intensity of a change: *slightly, slow, gradual, steady, dramatic, rapid, sharp, steep, sudden*.

There was a **slight rise** in physical activity among ninth graders between 2007 and 2010.

There was a **gradual decline** in physical education participation during high school.

There was a **sharp drop** in physical education participation between ninth and tenth grades.

- You can use the following verbs to describe a change: *decline, drop, fall, increase, reduce, rise*.

Participation in sports **fell** in three grades in the last few years.

Participation **has increased** only for ninth graders.

- You can use the following verbs to indicate no change: *remain, stay, maintain*.

The hours students spent in physical activity each week has **remained** steady for the past few years.

WRITING ACADEMIC ESSAYS

What is an essay?

An essay is a short collection of paragraphs that presents facts, opinions, and ideas about a topic. Each paragraph discusses one idea, often stated in the topic sentence of the paragraph. This idea is related to the topic of the whole essay. The topic sentence of a paragraph can be located anywhere, but the most common place is at the beginning of the paragraph.

The following chart shows the parts of an essay and their purpose.

Introduction <ul style="list-style-type: none">• Gets readers interested• Gives the main idea	Hook Connecting information Thesis statement
Body <ul style="list-style-type: none">• Organize the main points• Give supporting information	Supporting paragraphs Topic sentence Supporting sentences Concluding/bridge sentence
Conclusion <ul style="list-style-type: none">• Signals the end of the writing	Restating the main idea Offering a suggestion, giving an opinion, or making a prediction

The introductory paragraph of an essay has three parts: the hook, which introduces the topic; additional background information on the topic; and a thesis statement. A thesis statement states the main idea of the essay and gives a preview of what the writer is going to say about the topic. It usually comes at the end of the paragraph.

About Hooks

Writers create interest and motivate readers to keep reading by including a “hook” in the introductory paragraph of an essay. The hook is usually the first or second sentence of the paragraph.

The following are four types of hooks:

- **An unusual or surprising fact**

Essay Topic: Overconsumption in the United States

Hook: *Americans use 71 million tons of paper annually, or more than 900 million trees (U.S. EPA, 2011).*

- **A definition of a key term or concept**

Essay Topic: Consumer behavior

Hook: *Consumer behavior is the process consumers go through in making*

purchasing decisions. This process includes the steps one takes from the moment he or she becomes aware of a particular need through the final decision to purchase or not purchase a product (Perner, 2008).

- **A thought-provoking question**

Essay Topic: What the government can do to prevent negative effects of advertisements on children

Hook: *Should the government prohibit all advertisements on children's TV programs?*

- **A quotation**

Essay Topic: The effects of overconsumption

Hook: *"Too many people spend money they haven't earned, to buy things they don't want, to impress people they don't like" (Will Rogers, American humorist).*

Exercise 1. Match the examples of hooks below to the types of hooks in the box.

definition of a key term quotation thought-provoking question unusual or surprising fact
--

- Should the government have the power to stop parents from smoking in their own homes?
- "There are two ways to get enough: one is to continue to accumulate more and more. The other is to desire less" (G. K. Chesterton, 1874 – 1936).
- Every ton of recycled office paper saves 380 gallons of oil.
- Many people define advertising as the marketing and promotion of a product.
- Glass produced from recycled glass instead of raw materials reduces related air pollution by 20 percent, and water pollution by 50 percent.

About Thesis Statements

There are two types of thesis statements:

1. A general thesis statement tells the reader the topic of the essay, but not the exact points that will be made. The specific points will appear later in the topic sentences of the body paragraphs.

*There are **three main reasons** for not driving a car to help build a better future.*

*Drastic lifestyle changes will have both **positive and negative effects**.*

2. A specific thesis statement tells the reader the exact arguments or points that will be developed in the essay. Usually, the points are listed in the same order in which they appear in the body paragraphs.

*Becoming a strict vegetarian can lead to **a healthier body, a smaller ecological footprint, and a more spiritual life**.*

*Some ways to lead a healthy life include **waking up early, exercising, and meditating.***

Exercise. Read the thesis statements below. Label each one as general (G) or specific (S).

1. A dramatic increase in population will cause major environmental changes.
2. Environmental policies can reduce air pollution, traffic congestion, and water use.
3. “Green” office buildings will lead to cleaner air, lower costs, and healthier workers.
4. Neighborhood groups can improve the environment in several important ways.

About Conclusions

The conclusion is the final paragraph of an essay. The conclusion is the writer’s last opportunity to make an impact on the reader.

The following are different techniques to end an essay in a way that makes an impact:

- **Link back to ideas from first paragraph of the essay.** For example, the writer could link to the “hook” from the introduction or restate the main idea of the essay. In the conclusion below, the writer refers to the hook in the introductory paragraph in which there is an anecdote about a businessperson who inappropriately arrived “on time” in a culture with which he was unfamiliar.

In conclusion, successful international businesses must train their executives to be aware of cultural differences. The businessperson who arrived “on time” for the social event did not realize how impolite his action could be. Learning a few key facts about the target culture can lead to greater success in business.

- **Ask a thought-provoking question.** The writer can add a question about one of the main points in the essay as a way for readers to continue to think about the topic. However, the writer should not include questions that were not addressed in the essay.

In conclusion, successful international businesses must train their executives to be aware of cultural differences. If it is known that there is no universal agreement on what is considered polite, shouldn’t people be more willing to respect cultural differences when conducting businesses with other countries?

- **Discuss potential consequences.** The conclusion may include a prediction for the future, sometimes by giving a warning, a recommendation, or a call for action.

In conclusion, successful international businesses must train their executives to be aware of cultural differences. When someone is doing international business, it is important to never assume that what is considered polite in one culture is universal. Instead, it is essential to understand and respect other traditions.

- **Include a relevant quote.** Including a quote from an expert on the essay topic

can help create a powerful conclusion. The quote should be closely related to the ideas in the essay.

In conclusion, successful international businesses must train their executives to be aware of cultural differences. Of course, knowing individuals is as important as knowing the culture. As Geri-Ann Galanti (2000), a noted professor at UCLA, stated recently, "The danger in considering cultural differences is that of stereotyping people" (p. 335).

Complete the description of different types of essay with the words in the box.

formal issue objectively paragraph sides unbiased

There are two main types of discursive essay: evidence-led and opinion-led. Evidence-led essay type include 'For and Against' and 'Advantages and Disadvantages'. In an evidence-led essay, you discuss a problem, controversy or 1)_____ in an 2)_____ way. You present all 3)_____ of the question 4)_____. The style of the essay is usually 5)_____ rather than informal. If you are asked to give an opinion, you do so at the end of the essay. In an opinion-led essay, you include your opinion of the topic in the first 6)_____ and restate it in the last one.

Listen to [a lecturer](#) who has just finished a study skills workshop and is answering questions. Complete the notes about essay writing using one word for each gap.

Preparing to write

- 1)_____ the title- 2)_____ the key words.
- 3)_____ what kind of structure the title indicates.
- 4)_____ some notes.
- 5)_____ your ideas.
- 6)_____ yourself questions.
- 7)_____ your notes.

Writing

Use the beginning, 8)_____ and 9)_____ approach.
In the first paragraph you should 10)_____ the question in your own words and 11)_____ the topic.
In the final paragraph you should 12)_____ back to the question and 13)_____ your own opinion (if needed).

Language

- Academic writing tends to be 14)_____ in tone.
Try to leave 15)_____ out of your writing.
16)_____ structures are common.
Avoid 17)_____ and contractions.

For and Against Essay

A 'for and against' essay is a 'pros and cons' essay in which a topic is considered from

opposing points of view. You are required to present both sides in a fair way by discussing them objectively and in equal detail. The writer can state their opinion on the issue directly or indirectly. The purpose of this essay type is to take a balanced consideration of the stated issue. You need to explain the opposing viewpoints with relevant reasons, statistics, facts and examples. This kind of essay topic entails you to avoid any strong or emotional language to express your opinion.

The ‘for and against’ essay can be organized as follows:

Introduction states the topic along with its present situation without giving writer’s opinion

Paragraph 1: Arguments in favour along with reasons, examples, facts, etc.

Paragraph 2: Arguments against along with reasons, examples, facts, etc.

Conclusion states the writer’s opinion directly/indirectly and gives a balanced view of the topic

Some of the words and phrases that can be used:

To introduce points in favour/against:

One point of view in favour of/against is that...

Some experts/scientists advocate/support/oppose the view that...

To point out opposing arguments:

Opponents of this idea claim that...

Others oppose this viewpoint.

Some people may disagree with this idea.

To state your conclusion:

In my opinion...

Achieving a balance between X and Y would...

In conclusion, I firmly believe that...

On balance, I think it is unfair that...

To make contrasting points:

On the other hand...

However,...

It can be argued that...

Although

Writing Task

Write your ‘for and against’ essay. Follow the steps below,

- Write an introductory paragraph with a hook and a thesis statement.
- Write the first body paragraph giving arguments in favour along with reasons, examples, facts.
- Write the second body paragraph giving arguments against along with reasons,

examples, facts.

- State your opinion in conclusion.

Peer Review

Exchange your essay with a partner. Answer the following questions as you read your partner's essay and share your responses.

1. Are the arguments and justifications presented relevant to the topic given?
2. Is the essay structured in a logical manner?
3. Are the opinion words used only in the concluding paragraph and not in the introductory or main body of the essay?
4. Is anything confusing? Write a question mark (?) next to it.
5. Provide one compliment (something you found interesting or unusual).

Cause and Effect Essay

A cause-effect essay serves one of two purposes: either it shows the effects of a thing or event, or it explains the causes of a thing or event. Cause-effect essays deal with the action/result relationship. They explain why things happen (causes) and what happens as a result (effects). They can be written to inform or to persuade.

There are two main kinds of cause-effect essays. In one method, the writer focuses on the causes of something. This is called the focus-on-causes method. In the second method, the writer emphasizes the effects or results of a cause and focuses on the outcome of a particular event or action. These writers often write focus-on-effects essays.

Organisation A: focus on causes

What are reasons that some people stop using a social media site?

Thesis statement: Some people stop using a social media site because they dislike the advertising, they think that the site is not popular anymore, and they want to protect their privacy.

Body paragraph 1 (Cause 1): Dislike advertising

Supporting idea: Do not like the pressure to buy

Body paragraph 2 (Cause 2): Think site is not popular anymore

Supporting idea 1: Friends use other sites

Supporting idea 2: People complain about the site's policies

Body paragraph 3 (Cause 3): Want to protect their privacy

Supporting idea 1: Advertisers

Supporting idea 2: Cybercriminals

Conclusion

Organisation B: focus on effects

Explain the positive effects and benefits OR the negative effects and dangers of sharing information online.

Thesis statement: Through these sites, people are able to communicate with each other in an emergency, share information about political events with everyone in the entire world, and collaborate with others to help make the world better.

Body paragraph 1 (Effect 1): Ability to communicate in disasters

Supporting idea: Share information

Body paragraph 2 (Effect 2): Citizen journalism

Supporting idea 1: Take videos and photos

Supporting idea 2: Write about events

Body paragraph 3 (Effect 3): Help organisations

Supporting idea 1: Volunteer with organisations

Supporting idea 2: Fund projects

Conclusion

Transition Words and Phrases That Show Effect

- Transition words and phrases connect two independent clauses. Separate clauses with a semicolon or use two separate sentences. Use a comma after the transition word or phrase.

*Environmental values might affect some purchases; **consequently**, many merchants offer green products.*

*Environmental values might affect some purchases. **Consequently**, many merchants offer green products.*

- The following transition words and phrases are used to show effect or result: *as a consequence, as a result, consequently, therefore, thus.*

*Many consumers are concerned about the environment. **As a result**, they buy products that are environmentally safe.*

*Some consumers feel the need to be part of a certain group; **therefore**, they buy products that are expensive and fashionable.*

Writing Task

Write your cause and effect essay. Follow the steps below,

- Write an introductory paragraph with a hook and a thesis statement.

- Write body paragraphs that express your main points.
- Order your paragraphs in the most logical way according to your main points.
- Include transition words and phrases to show cause and effect in your essay.

Peer Review

Exchange your essay with a partner. Answer the following questions as you read your partner's essay and share your responses.

6. What is the topic? Underline the thesis statement.
7. What are the cause(s) and effect(s) the writer addresses in the essay?
8. Does the essay contain several causes leading to one effect, or one cause leading to several effects?
9. Is anything confusing? Write a question mark (?) next to it.
10. Provide one compliment (something you found interesting or unusual).

Problem and Solution Essay

In a problem – solution essay the writer poses a problem and then suggests some possible solutions.

Common Transition Words to Indicate Steps of a Solution

Transition words and phrases are commonly used to guide readers through the steps in a solution or process.

- Use transition words such as *first* and *to begin* to introduce the first step of a proposed solution. Use a comma after them when they appear at the beginning of the sentence.

First, one needs to acknowledge that a problem exists.

To begin, put the problem into words.

- Use *after that*, *following that*, *next*, *second*, *third*, *subsequently*, and *then* to introduce the next steps. Use *at the same time* to introduce a step that happens or needs to happen at the same time.

Following that, ways to address specific aspects of the problem should be developed.

Next, key terms should be clearly defined.

At the same time, the scope and effects of the problem need to be identified.

- Use *finally*, *in the end*, *last*, and *lastly* to conclude the steps.

Finally, the set of strategies should be implemented.

- You can also place transition words such as *next* and *then* in the middle of a sentence, before the verb. You can also use *next* at the end of a sentence.

*The scope and effects of the problem **then** need to be identified.*

*The people associated with the problem need to be contacted **next**.*

- You can also use phrases like *the first step, the second step, the third step, and so forth*, to indicate steps of a solution. These phrases are usually followed by *be + infinitive*.

***First**, one needs to acknowledge that a problem exists.*

***The first step is to acknowledge** that a problem exists.*

Exercise 2. Complete the sentences with suitable transition words to link the steps of a solution.

(1)_____, one needs to acknowledge that a problem exists. The scope and effects of the problem (2)_____ need to be identified. (3)_____, key terms and ideas should be clearly defined. (4)_____, ways to address specific aspects of the problem should be developed. (5)_____, the set of strategies should be implemented.

Common Vocabulary to Describe Problems and Solutions

• Phrases to Indicate Problems

Use the following phrases to introduce a problem: *The key / main / primary / most important problem is _____. A / The secondary issue / problem is _____. While _____ are issues / problems / factors, the most important / urgent / pressing / critical issue / problem is _____.*

For doctors, **the main problem is** the extra time they spend arguing with ill-informed patients.

A secondary issue is the patients' increased stress.

While wasted time and patient stress **are factors, the most urgent issue is** misinformation on the Internet.

• Phrases to Introduce Solutions

Use the following phrases to introduce solutions: *The solution to the problem lies in _____. There are several ways to address the problem of _____. One solution to/for _____ would be to _____. The problem of _____ can be solved by _____. _____ is a possible solution to the problem of _____.*

The solution to the problem lies in medical websites, doctors, and patients.

There are several ways to address the problem of cyberchondria.

One solution to cyberchondria **would be to** educate patients.

The problem of cyberchondria **can be solved by** recognizing information on medical websites.

Educating patients **is a possible solution to the problem of** cyberchondria.

Exercise 3. Choose the correct word to complete the sentences about fighting fatigue.

There are several ways 1)___ address the problem 2)___ fatigue. The solution 3)___ the problem lies 4)___ the patients themselves. One solution 5)___ fatigue would be to get more exercise. The problem 6)___ fatigue can also often be solved 7)___ changes in diet. Medication is another possible solution 8)___ the problem 9)___ fatigue.

In some cases of extreme fatigue, certain medical conditions must be 10)___. Medication may be 11)___ to treat a hormonal condition such as a malfunctioning thyroid. Major lifestyle changes should be 12)___ for many patients suffering from fatigue. Psychotherapy is 13)___ in some cases of fatigue.

Reduced functioning in a patient's personal life is the 14)___ issue with fatigue. However, a 15)___ issue is poor work performance. When people experience fatigue, they are likely to perform poorly at work. Fatigue may stem from an overtiring job itself. A 16)___ solution to this problem is for the patient to reconsider his or her work situation. A reduced workload may have very positive effects on a patient's body and mind.

Exercise 4. Complete the sentences about Internet addiction. Use the correct form of the verbs in parentheses.

- There ___ several ways to ___ the problem of internet addiction. (address, be)
- One solution to Internet addiction ___ to ___ the number of hours you ___ online. (be, spend, limit)
- Another solution ___ to ___ your computer to an uncomfortable location, such as the garage. (move, be)
- The problem of Internet addiction can often ___ by having a friend or relative ___ your use. (solve, monitor)
- If the problem of Internet addiction ___ severe, therapy ___ a possible solution. (be, become)
- Many people who ___ from Internet addiction are advised to ___ an exercise program. (consider, suffer)

Writing Task

Write a problem–solution essay in which you describe a problem and propose at least one solution and describe the steps necessary to implement the solution. Follow the steps below.

- Write an introductory paragraph that describes the problem (including a hook) and includes the solution in your thesis statement.
- In the second paragraph, explain the importance of the problem you chose.
- In the next paragraph(s), propose a solution(s). Present the solution(s) and

explain the steps necessary to implement each solution.

- Acknowledge possible limitations or drawbacks to the solution(s) and how to address them.
- Write a concluding paragraph that restates your thesis statement and includes either a prediction or recommendation about your solution to the problem.
- Include transition words and phrases that signal the different steps of a solution.

Peer Review

Exchange your essay with a partner. Answer the following questions as you read your partner's essay, and then share your responses.

- Is there a thesis statement? Does it mention the solution to the problem?
- Does the essay contain an effective description of the problem? What is the problem, and does the writer make the reader feel that it is important?
- Does the essay contain a clear description of the steps necessary to implement the solution? Does it address any limitations or drawbacks to the solution? Does it consider other possible solutions?
- Does the writer use any transition words or phrases to signal steps in the process? Circle any that you find.
- Is anything confusing? Write a question mark (?) next to it.
- Provide one compliment (something you found interesting or unusual).

Argumentative Essay

In an argumentative essay, the writer's purpose is to persuade the audience to agree with his or her opinion about a controversial topic. The writer states his or her opinion, gives reasons to support it, and tries to convince the audience that he or she is right.

The introductory paragraph of an argumentative essay should arouse the reader's interest in a controversial topic, explain the nature of the controversy, and provide the writer's position. The following three elements are required in an introductory paragraph to an argumentative essay:

1. A hook
2. A clear explanation of the controversy
3. A thesis statement containing the writer's position on the controversy

Exercise 5. Read this introductory paragraph to an argumentative essay and answer the questions.

Video Games Are Being Unfairly Targeted

There is a war out there, but it is not in any video game. It is an attack on teenagers who enjoy playing video games that include warfare and violence. There is a growing number of adults who believe that video games are turning their children into mindless, heartless killing machines. They believe that violent video games must be censored, for the good of teenage players and society as a whole. While their arguments seem valid at first glance, upon reflection, this attack on video-game violence and youth is both exaggerated and unnecessary.

1. What is the topic of the essay?
2. What is the controversy?
3. What is the hook?
4. What is the writer's position on the controversy?

Phrases for Argumentation

Writers use particular words to present an opposing view, to acknowledge that an opposing view has some merit, and to refute, or disprove, the opposing view.

It has been argued that the Internet has caused groups to form more quickly than in the past.

Clearly, the Internet offers access to a wealth of information.

However, some students need more guidance than others in using online resources.

Exercise 6. Complete the paragraph below about some drawbacks of easy access to information. Choose the correct word or phrase.

1) *While it is true that / However, it has been argued that* easy access to information allows people to learn almost anything they want at any time, there are some downsides to this accessibility. Some people believe that individuals are more productive when they multitask. 2) *Naturally / Unfortunately,* this is simply not true, according to recent studies. Attempting to do several things at once is less efficient than doing one thing at a time. People should attempt to focus on one source of information at a time and one piece of information at a time. 3) *Clearly, / It has been claimed that* people want to receive a lot of information, though. Otherwise, they wouldn't access so many different sources of information at once. Also, 4) *while it is true that / it has been claimed that* social networks allow people to stay updated on their friends' activities, they also create a big distraction. The vast amount of information that we have to sift through cuts into time we could actually be spending with friends. 5) *It is not true that / Obviously,* individuals have to decide on their own priorities, but spending time with friends face-to-face might be more valuable than communicating with them online. A person would probably benefit greatly from trading time spent learning unimportant information for some time spent with friends. 6) *It could be argued that / Of course,* people will not remember the 20 status updates and 5 e-mails they read after work, but they will very likely enjoy and remember a dinner with a friend.

Exercise 7. Write a short paragraph for the thesis statement given. Include the opposing view, an agreement, and a refutation. Use the phrases for argumentation to connect the ideas.

Thesis Statement: Students should turn off their electronic devices during class.

Opposing view: Students should be allowed to have their devices on during class.

Agreement with the opposing view: Students may need to be in contact with family members or their jobs.

Refutation: Electronic devices can be a distraction in the classroom.

Supporting information: Students can become easily distracted by their devices and miss important information.

About Writing Strong Arguments

To present a strong argument, writers need to clearly identify and define their point of view and find ways to make those arguments appear convincing. The following are three methods that writers can use to make their writing more convincing:

1. Include facts, statistics, observations, and trends based on research to support your claims.
2. Include the opinions of authorities or experts respected by your audience.
3. Make logical connections between the information you present and any predictions or recommendations that you make.

Exercise 8. For each item, choose the type of argument strategy that is being used by the writer.

a. Logical connection b. Opinion of experts c. Facts, statistics, trends

1. One study on cyberbullying has shown that the issue is widespread, with 20 percent of students reporting that they had been bullied.
2. If schools become involved, it will reduce opportunities for cyberbullying attacks.
3. According to Christina Brown and Michelle Demaray, the authors of "School-Based Cyberbullying interventions," school authorities must be able to identify cyberbullying, understand how it affects students, and do everything possible to create a safe learning environment.

Writing Task

Write an argumentative essay. Follow the steps below.

- Write an introductory paragraph that contains a hook, explains the issue, and provides a thesis statement.
- Write body paragraphs that contain topic sentences that state your main ideas,

present opposing viewpoints, and provide a refutation of those views.

- Make sure your body paragraphs contain facts, statistics, and logical connections that are supported by your research.
- Write a concluding paragraph that summarizes the main points of your essay and contains a recommendation for future action.

Peer Review

Exchange your essay with a partner. Answer the following questions as you read your partner's essay and share your responses.

1. Is there a thesis statement? Is the point of view clear?
2. Are the arguments in the body paragraphs well supported?
3. Does the concluding paragraph summarise the main points and make a recommendation or prediction?
4. Is anything confusing? Write a question mark (?) next to it.
5. Provide one compliment (something you found interesting or unusual).

With all the problems in the world today, spending money on space exploration is a complete waste. The money could be better spent on other causes. To what extent do you agree?

With the development of technology, the life of mankind has changed dramatically and the problems of space exploration is extremely popular these days. We are now moving towards a time in which living on different planets is not only dreams of scientists. It really can become a huge breakthrough for the human species and it's clear that it will cost billions of dollars. At the same time, is it appropriate for our planet where a huge percentage of the population does not have the basic resources for an active life? I don't think so and have some significant reasons for it.

At face value it is easy to see why humanity is so eager to explore space. In the age of rapid development of medicine and technology, space attracts us with its natural riches and opportunities. With today's technology, it is possible to produce machines that can accomplish many of the tasks that can help humanity to dominate the universe. What is more, a lot of discoveries have been made as a result of space exploration. For instance, we have seen the power of Google Maps and now we can not imagine our lives without this invention.

However, space exploration is great, but improving the standard of living on the Earth is more necessary and significant thing for humanity. We have to take care of our planet before we go roaming other planets and it's obvious because humanity is the number one priority. Today, a huge number of people are

dying of hunger and lack of drinking water. Medicine in some countries may seem like an echo of the 18th century. Children do not have an access to education. The problems of racism, feminism, prostitution and drug use still exist in our society. We need to solve these issues. We need to educate people. We need to teach them how to respect each other. We need to show that we really care.

To sum up, space exploration is a complete waste of money nowadays. The money could be better spent on other problems to protect and improve the lives of people on the Earth. Problems of population should be prioritized.

Humanity is developing throughout history, and now we take advantage of using high technology both for our everyday life and for enriching our understanding of the world we live in. Conquering space is one of the major target areas of interest of the global community leading to any NASA project becoming a global sensation apart from being a contribution to the scientific progress. While space exploration requires enormous amounts of money which could be used for improving life on Earth, I feel that humanity cannot afford to pause the research in this field of science.

At face value, it is easy to see the variety of problems on our planet to which more attention and resources could possibly be turned. Some people consider that large amounts of money should be taken to fight global warming and deal with water supply issues in Africa, for instance. Even the novel coronavirus outbreak is widely considered to be the field in which financial resources used by NASA and SpaceX to launch Crew Dragon could be invested due to the situation being urgent and dangerous.

However, the space industry is the one which is constantly looking for an alternative solution to all the environmental questions, so it seems to make little sense reducing its financial support to protect our planet. Scientists say that the natural resources of Earth are very limited so that humanity is not likely to be able to stay on it forever. Finding the new planet for people and the logistical solutions on moving to this planet are in the focus of the modern space science, so the long-lasting investing in it is likely to result in the start of the new era of the humanity development. Another thing to consider about money in the space industry is that those costs cannot be moved from project to project quickly, as in case of current coronavirus outbreak. Large projects like the Crew Dragon launch take years to prepare with enormous sums of money put in investigations and production on all the stages of the work. These projects have to be ended properly because it is procedurally difficult to move them more in time than planned and it would be even more expensive to make any unpredicted delays.

Overall, although some people believe that the investments in the spacecraft have to be shortened and used to make the life on Earth better, space exploration is a process which we cannot afford to stop due to both environmental and procedural issues, and it always has to be among the priorities of humanity no matter what the situation on a globe is.

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