МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ
ХАРКІВСЬКА НАЦІОНАЛЬНА АКАДЕМІЯ МІСЬКОГО ГОСПОДАРСТВА

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ЗБІРНИК ТЕКСТІВ І ЗАВДАНЬ З ДИСЦИПЛІНИ ‘ІНОЗЕМНА МОВА (ЗА ПРОФЕСІЙНИМ СПРЯМУВАННЯМ)’

(англійська мова)

(для практичної роботи студентів 2 курсу денної форми навчання напряму 6.060101 «Будівництво»)

ХАРКІВ – ХНАМГ – 2009

ЗБІРНИК ТЕКСТІВ І ЗАВДАНЬ З ДИСЦИПЛІНИ ‘ІНОЗЕМНА МОВА (ЗА ПРОФЕСІЙНИМ СПРЯМУВАННЯМ)’ (англійська мова) (для практичної роботи студентів 2 курсу денної форми навчання напряму 6.060101 «Будівництво»). / Н. І. Видашенко; Харк. нац. акад. міськ. госп-ва. – Х.: ХНАМГ, 2009. – 113 с., укр., англ., мовами.

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Збірник текстів і завдань побудовано за вимогами кредитно-модульної системи організації навчального процесу (КМСОНП).

Рекомендовано для студентів будівельних спеціальностей.

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Затверджено на засіданні кафедри іноземних мов,
протокол № 4 від 21 грудня 2009 року

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INTRODUCTION

TO THE STUDENT

This book is to help you to improve your skills in reading and speaking English, the English grammar and vocabulary.

All students need practice. There are a lot of different certain basic things in English. They cannot be mastered without a great deal of practice. In order to improve your English, you should try to make the most of your classroom time.

REMEMBER:

- Good learners know that a teacher cannot do everything.
- To make progress, you must take responsibility for your own learning. Learning English or other languages is like learning to ski or skate. Your teacher can show you what to do, but you must do it.
- People often remember things better when we work them out for ourselves, rather when we are simply told. Asking questions does not mean you are stupid. It is a vital part of the learning process.
- Speaking tasks, group work are not a waste of time. If you are asked to do this, it gives you a chance to use your English.
- Do more than give a ‘minimum response’. This will help you to be more confident with your English.
- No one can learn languages without making mistakes. Don’t worry about every little mistake, identify important mistakes and work on those.
- Your first languages can help you learn English, if some words or grammar structures are similar. But the less you rely on translation, the better you will communicate in English.
- It is never enough simply to know something. You must be able to do things with what you know.

Each unit here gives you the vocabulary of transport, words and expressions that will be useful to you and help you understand written and spoken English.

You can find interesting facts about different vehicles, their history and development.

TO THE TEACHER

This course is for the students studying English for scientific and technical purposes (ESP). The course is designed to familiarize the students of non-language higher education institutions with the information on civil engineering and town planning in particular.

The material has been specifically designed for a variety of class environments and as the basis for individual and group work as well as for self-study.

This course consists of the five units and is expected to be covered during at least 36 classroom hours and about 100 hours for self-study. These are:

Unit One. Towns and Cities
Unit Two. Computer and Computer Equipment
Unit Three. Famous Buildings
Unit Four. Tunnels and Canals
Unit Five. Underground
Unit Six. Parks and Gardens
Unit Seven. Bridges

Most of the units provide the learner of English with original texts from different sources.

Units contain:

- ***Texts*** which focus on one of the topic.
- ***Reading Comprehension*** which confirms the content of the text either in general or in detail.
- ***Vocabulary Focus*** which encourages students to work out the meaning from the context and reinforces the vocabulary further.
- ***Vocabulary Development*** with word-formation exercises which helps students improve the range of words and phrases for active or passive use.
- ***Vocabulary Exercises*** which are means of presenting and improving the vocabulary.
- ***Speaking Practices*** serve as models to demonstrate how to use words and expressions in everyday conversations. The practical exercises give students additional practice in using words and conversational structures found in the unit.
- ***Writing Skills*** which include different tasks that help students put their thoughts into words in a meaningful form and to mentally interact with the message.

UNIT ONE. TOWNS AND CITIES

1. Reading Comprehension

TEXT 1. Town Planning

That cities should have a plan is now admitted in our time of large-scale construction and plan-making has become an everyday activity. The purpose of a town plan is to give the greatest possible freedom to the individual. It does this by controlling development in such a way that it will take place in the-interests of the whole population.

The new development absorbs or modifies an existing environment, and so before it can be designed it is necessary to find out about that environment. It is also necessary to do research of the trends of population growth, the distance from work to home, the preferences for different types of dwelling, the amount of sunshine in rooms, the degree of atmospheric pollution and so on. After the survey is complete a forecast of future developments made in the form of a map, or series of maps: the master plan or development plan As no one can be certain when the development is to take place and since a society is an organic thing, with life and movement, the plan of a city must be flexible so that it may extend and renew its dwellings, reconstruct its working places, complete its communications and avoid congestion in every part.

The plan is never a complete and fixed thing, but rather one that is continually being adapted to the changing needs of the community for whom it is designed. Until quite recent years town plans were always made as inflexible patterns, but history has shown that a plan of this description inevitably breaks down in time.

The flexible plan, preceded by a survey, is one of the most revolutionary ideas that man has ever had about the control of his environment.

Most towns today have a characteristic functional pattern as follows: a central core containing the principal shopping centre, business zones, surrounded by suburbs of a house. Most town planners accept the traditional town pattern. In the preparation of a master plan they are preoccupied with the definition of the town centre, industrial areas, and the areas of housing; the creation of open space for recreation, the laying down of a pattern of main roads which run between the built-up areas (thus leaving them free of through traffic and connect them to each other.

The master plan thus has to define the ultimate growth of the town, but though the master plan is a diagram, and even a flexible one, it is the structure upon which all future development is to take place.

1. Read the following sentences and decide what sentence expresses the main idea of the text.

1. In the preparation of the master plan it is necessary to define the town zones.
2. All cities should have a plan.
3. Before a flexible plan is made it is necessary to find out about the existing environment.
4. The master plan also defines places for active and passive recreation.

2. ***Find the correct headings of the paragraphs.***

1. Features of the traditional town pattern.
2. The purpose of a master plan.
3. The purpose of a town plan.
4. What main points should be included in a survey?

3. ***Choose the one best answer A, B, C to the statements.***

1. The purpose of a town plan is _____ .
   A. to do research of the trends of population growth
   B. to give the greatest possible freedom to the individual
   C. to find out about the existing environment

2. Before a town plan is designed, it is necessary _____ .
   A. to renew and extend the dwellings, reconstruct the working places
   B. to make a forecast of future development in the form of a map or a series of maps
   C. to find out about the existing environment

3. History has shown that a town plan should be flexible, because _____ .
   A. it should continually be adapted to the changing needs of the community for whom it is designed
   B. it defines the position of schools, shopping centers and business centre
   C. it suggests the routes of public transport

4. The master plan has to define the ultimate growth of the town and _____ .
   A. no one can be certain when the development is to take place
   B. a society is an organic thing with life and movement
   C. therefore it is the structure upon which all future development is to take place

5. In the preparation of a master plan the planners are preoccupied with _____ .
   A. the idea that in our time plan-making has become an everyday activity
   B. the definition of the town pattern and the laying down of a pattern of main roads
   C. the necessity to determine the distance from work to home

4. Make up the summary of this text using the nessesary phrases. You can find them at the end of this textbook.

TEXT 2. Design of the Complete Town

In considering the design of a town or city we must always remember that the town must be sited in a healthy position, free from dust, fogs, its layout must not encourage winds through urban spaces, and it must not pollute its own atmosphere. It must provide proper standards of space and sunlight to its buildings and open spaces, and it must be possible to move about the town easily and without danger to life. Its

parts must be so arranged that; it is a convenient place for dwelling, working and playing.

Connected with these and many other technical problems is the problem of economy. The problem must be thoroughly examined which does not suggest that the cheapest scheme may be the best.

The town must work properly but it should also give pleasure to those who look at it. When we say that a town should be beautiful, we do not mean that it should have some fine parks and noble buildings, we mean that the whole of the environment, down to the most insignificant detail, should be beautiful.

If we examine a typical urban scene we see all kinds of objects like buildings, lamp posts, paving, posters, and trees. It is all of them, together with all the other kinds of objects that are found in the town, that are called the raw materials of a town design. Each of them down to the least important should be aesthetically satisfying.

Designing in terms of past time does not imply the imitation of the existing environment but respect of the form, color, texture, and general qualities of the existing development. ‘That which is being constructed is for immediate use which is not to suggest that there must be an attempt to ignore the past and be ‘modern’.

Future time must also be thought of in terms of the estimated life of the objects. Objects like buildings and lamp posts grow old and become out-of-date, and the designer must select those materials that are adequate for their life, no more and no less.

Until comparatively recent times the growth of cities has been without purpose in any sense. Cities must grow, for growth is a law of life. But this natural overgrowth should have aroused action to restore balance. Mere size, as such, is no index of greatness.

All overgrowth means overcrowding, which is loss of space, one of the vital needs of cities. The lesson that has to be learned is that natural growth, and all the other forms of growth have to be made subject to will and intelligence, or the city must be harmed. This is a certain lesson of history.

1. Read the following sentences and decide what sentences express the main point of the text.

1. When building a town we should be very careful not to spoil what exists already.
2. The streets and buildings of existing towns will serve many future generations.
3. When designing a town we should not forget that its citizens should be able to move about it without any danger to their life.
4. The economics of a town plan and the technical problems are closely connected.
5. Scientific forecast also includes progressive methods of planning.
6. The designer should select the best building materials for the objects of his planned town.
7. Cities will grow but their growth must be controlled.

2. ***Find the correct headings of the paragraphs.***

1. The whole town, and even its details, should be beautiful.
2. A town should be a nice place to live, to work and to rest in.

3. The town designer should remember that his raw materials will exist in the future.
4. All the objects in the town are called the raw materials of town design.
5. City growth should be controlled.

3. Find the correct endings to the following statements according to the text.

1. Before a development plan is made, it is necessary _____ .
2. The plan of a city has to be flexible because _____ .
3. The traditional town pattern is as follows _____ .

4. Make up the summary of this text using the nessesary phrases. You can find them at the end of this textbook.

TEXT 3. The City of Pompei

The city of Pompeii, in southern Italy on the Bay of Naples, was buried by a volcano on August 26, 79 a.d. The city had been built at the foot of Mt Vesuvius, a volcano, about four and one-half miles southeast of the top. At the time of its destruction Pompeii was a busy city of about 20,000 people. It covered about 160 acres and was encircled by a wall with eight gates. It was known as a resort city for rich people.

Mt. Vesuvius had been quiet for so many years that it was thought to be extinct. Then, on that fateful day, it suddenly erupted, and Pompeii and nearby places were wiped out by a rain of hot ashes. People had no way to escape so both the city and the people were buried. They were not found until excavations were made in the 1860s. However, the same force which destroyed Pompeii preserved it. The ashes mixed with strong rains cooled and hardened. This volcanic debris covered the city and preserved it.

From the many excavations came a knowledge of life as it had been before the eruption. The excavations revealed a well-preserved city. Everything was found as it was when people rushed in vain to escape the hot ashes and the deadly fumes.

A number of years ago an exhibit showing the old city of Pompeii was loaned to museums in several countries. Huge crowds came to see the exhibition, and they were amazed at what they saw. The buildings and people looked as they had 1900 years ago. Plaster casts of people and animals seemed real. Visitors saw the town plan, the sidewalks, the houses, the gardens, and the shops. They saw the public baths and the outdoor theaters, too. Also exhibited were the things used in daily life, like tools and pottery. Beautiful art and artifacts were also in the show. There were walls with fine paintings and floors with mosaic designs of small colored stones. There were bronze and marble statues, gold and silver objects, and glass.

These and other treasures could be seen in Naples and Pompeii until the terrible earthquake of 1980, when many of these treasures were destroyed.

1. Find the correct endings of the following sentences.

1. The old city of Pompeii was _____ .

A. built without a plan
B. poorly built
C. well built
D. small

2. Pompeii was buried and forgotten for so many years because _____ .

A. nobody knew that the city had been preserved
B. it was too much work to dig it out
C. it was too expensive to dig it out
D. nobody cared about such an old city

3. People in old Pompeii lost their lives because they _____ .

A. did not flee when advised to go
B. did not expect Vesuvius to erupt
C. did not go to the shelters provided
D. did not fear the erupting volcano

4. We can conclude that people in Pompeii _____ .

A. loved beauty in all forms
B. cared only about useful objects
C. cared only about objects made of precious metals
D. hated the outdoors

2. Make up the summary of this text using the nessesary phrases. You can find them at the end of this textbook.

TEXT 4. THE LOST CITY

Two thousand years ago, Pompeii was a prosperous town with a population of perhaps twenty thousand people. It was a busy port located on the Sarnus River, near the Bay of Naples, about a hundred and thirty miles south of Rome. Rich landowners and retired Roman citizens built elegant homes in the town and paid for its fine public buildings and temples. The town nestled in the shadow of four-thousand-foot high Mount Vesuvius, and the local farmers cultivated grapes in the mountainside's fertile soil as they had done for centuries.

In A.D. 62, the town was shaken by tremors from an earthquake; for the next seventeen years, the people worked to repair the damage. They were not then aware of the danger they were in, but if they had known what we know today, that earthquake would have been a warning to them. Stupendous forces were slowly building deep beneath the surface; the earthquake was merely the prelude to a far worse disaster.

Vesuvius is a volcano, but it had been dormant for eight hundred years. There had been no activity during this time because a thick layer of molten rock, called lava, had hardened to form a plug, sealing off the mouth of the volcano like a cork in a bottle. Over the centuries, pressure deep below the earth's surface had been slowly building up inside the volcano. On August 24, A.D. 79, it became so great that the plug of lava was suddenly expelled in a tremendous explosion.

So violent was the explosion that the top of the mountain was blown off. Cracks appeared in the earth, and water, heated to boiling by fires beneath the earth's crust, thrust its way to the surface. People and animals were scalded as they tried to flee. Smoke, poisonous fumes, and ash from the volcano filled the air, suffocating many

people in their homes. Buildings were crushed by huge rocks hurled from the volcano. Then came a series of avalanches that buried the town, together with everything in it, in twenty feet of stones, cinders, and volcanic ash.

A vivid description of the eruption of Vesuvius was given by Pliny the Younger, who later became a famous Roman statesman. He was eighteen years old at the time, and he watched the disaster from twenty miles away on the other side of the bay. His uncle sailed to Pompeii to save the lives of some friends, but died during the attempt. Pliny the Younger described the tragic events of that day in letters he wrote many years later.

For centuries Pompeii lay buried and forgotten. It was not until 1763 that the excavation of the ruins first began. Painstaking digging revealed streets and buildings filled with the objects of everyday life. Also uncovered were the bodies of the more than two thousand people who perished on that terrible day nearly two thousand years ago when the sleeping volcano suddenly woke up.

1. Answer each of the following questions in a sentence.

1. What did the excavations at Pompeii reveal?
2. Why were the citizens of Pompeii unconcerned about Mt. Vesuvius?
3. What is the meaning of prelude as it is used in the narrative?
4. What evidence is there that some of Pompeii's people were wealthy?
5. What is the meaning of tremors as it is used in the narrative?
6. What happened when the pressure inside the volcano became too great?
7. Why did the explosion of Vesuvius have such stupendous force?
8. What materials were thrust from the volcano when it exploded?
9. What is the meaning of expelled as it is used in the narrative?
10. Why do you think uncovering Pompeii was such painstaking work?
11. Why did the underground water from Vesuvius cause deaths and injuries?
12. Why was the air at Pompeii dangerous to breathe?
13. What happened to Pliny the Younger's uncle?
14. How large was Pompeii?
15. What were the three major causes of death at Pompeii?

2. Make up the summary of this text using the nessesary phrases. You can find them at the end of this textbook.

2. Vocabulary Exercises

1. Chicago

Chicago is the third largest city in the United States. Over three million people live in the two hundred and twenty five mile area of Chicago.

The world's first skyscraper was constructed in Chicago in 1885. Today, some of the world's tallest and most famous skyscrapers are found in the city. Located in the heart of the city is the one hundred and ten story Sears Tower, which is among the most famous skyscrapers ever built.

Chicago is often called 'The Windy City'. It is assumed that this is due to the

City's weather, but in the 1990s 11 major U.S. cities outranked Chicago for average annual wind speed.

1. How many cities in the United States are larger than Chicago?
   A. one **B.** two **C.** three **D.** four

2. Which of the following is true?
   A. Chicago is the largest city in the world.
   B. Chicago is home to some of the world's tallest skyscrapers.
   C. Chicago is the windiest city in the United States.
   D. None of the above.

3. How many of people (in millions) live in Chicago?
   A. one **B.** two **C.** three **D.** four

4. What is one of Chicago's most famous skyscrapers?
   A. The Sears Tower **C.** The Times Tower
   B. The Sienna Tower **D.** The Empire State Building

Choose the correct words in the blanks.

Chicago is the third biggest city in the United States, and is the financial, business, and (1) _____ (**culture / cultural**) capital of the Midwest. It is (2) _____ (**placed / located).** on Lake Michigan. Chicago is world-(3) _____ (**renowned / known**) as a global capital of architecture. Ever since the first steel-framed high-(4) _____ (**rise / rising**) building of the world was constructed in the city in 1885, Chicago has been known for its (5) _____ (**skyscratchers / skyscrapers**). The rest of the city (6) _____ (**contains / consists**) of high-rise residential buildings near the lake and more low-rise buildings and (7) _____ (**one / single**)-family homes as one gets farther from the lake. Along Lake Shore Drive, parks (8) _____ (**outline / line**) the lakefront. Chicago's many cultural and (9) _____ (**ethnicity / ethnic)** groups make is a very vibrant, dynamic city. People from Chicago have a (10) _____ (**distant / distinct**) accent.

2. New York

New York is the largest city in the United States. More than eight million people live in the Big Apple. New York City is also home of the United Nations. New York city is located in the state of New York. New York City is home to two hundred and fifty museums, four hundred art galleries, and the world famous Broadway for entertainment.

New York City is the business capital of the world and many national and international corporations have their headquarters in New York City. Wall Street, the world's leading center of finance and the home of the American Stock Exchange and the New York Stock Exchange.

As far as professional sports go, this city has two of everything. Two professional baseball, basketball, hockey, and football teams are located in the city.

1. New York is the largest _____ in the United States.
   A. city **B.** country **C.** county **D.** school

2. New York is home to more than _____ million people.
   A. two **B.** five **C.** eight **D.** ten

3. Which of the following is a true statement?
   A. New York is a small city.
   B. New York has a large number of arts galleries.
   C. New York has little impact on the world's economy.
   D. None of the above.

4. How many stock exchanges reside in New York?
   A. none **B.** one **C.** two **D.** three

5. Which of the following is NOT true?
   A. Chicago is smaller than New York.
   B. Chicago is larger than New York.
   C. Little athletics takes place in New York because it is a city.
   D. All of the above are true.

Choose the correct words and put them in the gaps.

among	birthplace	born	contribute	fueled
home	including	role	settlers	organizations

New York City is the most populous city in the United States and one of the world's major global cities. The city's business, financial and trading (1) _____ play a major (2) _____ in the economy of the nation and of the world and (3) _____ to the largest regional economy in the country. The city is also one of the world's most important cultural centers and is the (4) _____ of the United Nations. New York City is the (5) _____ of many American cultural movements, (6) _____ the Harlem Renaissance in literature, abstract expressionism in visual art, and hip-hop in music. The city's cultural vitality has been (7) _____ by immigration since its founding by Dutch (8) _____ in 1625. In 2005, 36.6% of the city's population was foreign-(9) _____ . New York City is also notable for having the lowest crime rate (10) _____ major American cities. The 'New York City accent' is very distinct and recognizable.

3. Half the World in Cities

A. Put the missing words into the gaps.

A United Nations report on world population _____ has provided some interesting food for thought on the future

demographics of our planet. The world's population is currently 6.5 billion and is set to increase and _____ off to about 9 billion people. The report says population explosions will occur in Africa and Asia, but not in the rest of the world, 'Considerable _____ exists in the expected population growth of countries. The population of many countries, particularly in Africa and Asia, will increase greatly in the coming _____.' Conversely, population levels in developed countries are expected to fall, because of decreased fertility rates caused by increased _____ use. The report also indicates half of the world's population will be city dwellers by 2007. That is a huge jump from the figure of 30% urbanization in 1993. The five most _____ cities today are Tokyo (35 million people), Mexico City (19 million), New York (18.5 million), Bombay (18.3 million) and Sao Paulo (18.3 million). In 1950 only Tokyo and New York had populations of more then 10 million people. By 2050 there will be 22 cities of that size. The report concludes, 'the current population picture is one of dynamic population change, _____ in new and diverse patterns of childbearing, mortality, migration, urbanization and ageing. The continuation and consequences of these population trends present opportunities as well as _____ for all societies in the twenty-first century.'	diversity contraceptive trends reflected challenges level decades populated

B. Find out if the following statements about the article are true (T) or false (F). If it is false, correct the information.

1. A UNO report on world population trends talks about interesting food. ( )
2. The world's population is currently 6.5 billion. ( )
3. The report says population explosions will occur in Europe and Japan. ( )
4. The population levels in developed countries will fall because of increased contraceptive use. ( )
5. Half of the world's population will be city dwellers by 2007. ( )
6. Bombay is currently the world's most populated city. ( )
7. In 1950 only two cities had a population of over 10 million. By 2050 that number will increase to twenty-two. ( )
8. Population trends will present opportunities as well as challenges for all societies in the twenty-first century. ( )

C. Match the following synonyms from the article.

1.	report	**A.**	happen
2.	food for thought	**B.**	in contrast
3.	occur	**C.**	outcomes
4.	diversity	**D.**	statistics
5.	conversely	**E.**	birth control
6.	contraceptive	**F.**	vigorous
7.	dwellers	**G.**	leap
8.	jump	**H.**	variety

9.	dynamic	**I.**	document
10.	consequences	**J.**	inhabitants

D. Match the following phrases based on the article (sometimes more than one combination is possible).

1.	world population	**A.**	off to about 9 billion people
2.	interesting food	**B.**	of that size
3.	set to increase and level	**C.**	jump from the figure of 30%
4.	The report says population	**D.**	concludes
5.	will increase greatly in	**E.**	as challenges for all societies
6.	That is a huge	**F.**	explosions will occur in Africa and Asia
7.	By 2050 there will be 22 cities	**G.**	trends
8.	The report	**H.**	for thought
9.	reflected in new and	**I.**	the coming decades
10.	present opportunities as well	**J.**	diverse patterns

F. Match the following words with the most likely definitions (Please think about the headline!).

1**.** trends (n)

A. general directions that fashion, business, society, the world etc moves towards

B. the name for people who move from the country into the city

2. food for thought (n)

A. interesting issues that you need to think seriously about

B. nutrition-rich food that increases your intellectual power

3**.** demographics (n)

A. posters and banners used to highlight the world's problems by activists at G8 and other international governmental meetings

B. looking at the patterns of different groups of people, on a global level or within societies

4**.** diversity (n)

A. when there are roadwork's which mean you have to take a detour

B. the way many things are different from other things

5. decades (n)

A. when bacteria have rotted your teeth and you need to go to the dentist

B. periods of ten years

6. fertility (n)

A. the condition of being able to produce children

B. a cruel method of removing animal skins to make coats for the fashion industry

7. contraceptive (n)

A. a method of birth control to prevent pregnancy, such as condoms

B. when a person says (s)he will one thing, but does another totally different thing

8. dwellers (n)
   A. people who have very pessimistic thoughts on the future of our planet.
   B.people who live somewhere

9. mortality (n)
   A. being able to live forever and ever and ever
   B. the condition that one day we will die

10. migration (n)
   A. a really bad headache
   B. people moving from one country to another

G. Answer the following questions.

1. What do you think of this article – interesting food for thought?
2. Are you pessimistic or optimistic about the future of our world?
3. Do you prefer the city or the country?
4. What is the attraction of cities?
5. What problems will increased urbanization create?
6. What will happen to the depopulated countryside?
7. Who will grow all the food?
8. What will be the consequences of population explosions in Africa and Asia?
9. Would you like your city / town / village to double in size in the next ten years?
10. Should contraception be encouraged to prevent population explosions?
11. Is mass migration a good thing?
12. If you had to, where would you migrate?
13. Which of these cities would you most and least like to live in – Tokyo, Mexico City, New York, Bombay, Sao Paulo?
14. What are the biggest opportunities and challenges for the world in the twenty-first century?
15. What will you be doing in 2020, 2030, 2040, 2050?

3. Vocabulary Focus

1. Fill in the gaps in the following text with a suitable word. Mind that more than one variant is possible.

Living in the City and in the Country

Living in the city has both advantages and (1) _____. On the plus side it is often easier to (2) _____ work, and there is usually a choice of public (3) _____ , so you don't need to own a car. Also there are a lot of interesting things to do and (4) _____ to see. For example, you can eat in a good (5) _____ , visit museums and go to the theatre or to concert. When you want to relax you can go to a (6) _____ and just sit on a bench and read a book. The city life is full of bustle and variety and you don't

need to (7) _____ bored.

However, for every plus there is a (8) _____ . For one thing, unless your job is well paid, you won't be able to afford many of the things because living in the city is often more (9) _____ that in the country. It is particularly difficult to find a good and cheap accommodation. Besides, public transport is often dirty and (10) _____ , especially in the rush hour. But in spite of all the crowds, many people feel (11) _____ in big cities.

For the last two hundred years there has been a tendency for people to (12) _____ from rural to urban areas, mainly in search of work. After one or two factories have been (13) _____ in or near the town an industrial area begins to grow. Soon a residential (14) _____ where the factory workers can live appears nearby. The (15) _____ of these workers heed schools, hospitals and shops, so more people come to live in the area to provide these services, and so the city grows. In every major city there is a business district where the big (16) _____ have their main offices. They are usually in the city (17) _____ , in huge office blocks. The people who work there often commute to work from the (18) _____ or 'bedroom' districts every day. Some suburbs are very pleasant with a lot of nice houses and big gardens. Others look more like slums.

But what is the future of big cities? Will they (19) _____ to get bigger and bigger? Perhaps not. Even now some major cities have become smaller in the last ten years and it is quite possible there will be a tendency for people to move from big cities back to the (20) _____.

2. In each of the following sentences, the word in brackets has either been spelt incorrectly, the wrong word has been used, or the wrong word form has been used. Type the correct word or form in the gap next to the word.

1. The roads into the city are often heavily (**conjested**) _____ with traffic.
2. London is a vibrant, (**cosmapolitan**) _____ city with people from all over the world.
3. In some cities, (**poorverty**) _____ and unemployment are increasing at an alarming rate.
4. The problem of crime in our (**inter**) _____ cities is very worrying.
5. In many villages there has been a declining rate of (**populate**) _____ growth.
6. The town's (**amenites**) _____ include a library, several restaurants and large leisure centre.
7. In order for a city to function properly, it needs to have a good public-transport (**interstructure**) _____.
8. There isn't much (**anonymous**) _____ in a small village: everybody knows who you are and what you're doing.
9. I find that most city (**habitants**) _____ are rather unfriendly or have very little time for other people.
10. Finding suitable (**acommodation**) _____ in the city can be a big problem.

11. A lot of the parking spaces in town are for local (**residence**) _____ only.
12. Because house prices in the city centre are so expensive, many people choose to live in the (**suburbia**) _____ around the city.
13. It can be very (**stressing**) _____ living in a busy city.
14. The idea that the countryside is (**peacefully**) _____ is not always true.
15. I would rather live in a (**rurral**) _____ community than in a large town.
16. In some (**urbane**) _____ areas, crime and drugs are a major problem.
17. The town is a much nicer place now that cars have been banned and (**pedastrian**) _____ precincts established in the centre.
18. Every morning, trains are packed with (**commutators**) _____ coming into the city to work.
19. As more and more people have (**emigrated**) _____ from the villages to the cities, the countryside has become virtually deserted.
20. One disadvantage of living in a city is the high cost of (**leaving**) _____. Food and clothes in particular are so much more expensive than elsewhere.
21. Many cities are real (**meltin**) _____ pots, with people from different races, countries and social classes living and working together.
22. I'm not sure if city (**dwellings**) _____ are happier than those living in the countryside.
23. Traffic during the (**rushed**) _____ hour is particularly bad.
24. In an attempt to (**revival**) _____ the city's economy, tourism is being heavily promoted.
25. Pesticies and other chemicals used in (**cultivate**) _____ have practically poisoned large areas of the countryside.

4. Speaking Practice

1. Answer the following questions about your street.

- What street do you live in?
- How long have you lived in this street?
- Is it in the centre of the city or in a suburb?
- Is your street quiet or busy? Is there heavy traffic during the day?
- Are there any shops, offices, official buildings in it?
- Do you know about any famous people who lived in your street?
- Has it always had one name? What do you know about the history of your street?
- Is it a green street? Are there any flowers, trees or bushes there?

2. Add the correct missing answers. You find them after the dialogue.

The City and the Country

David: How do you like living in the big city?
Maria: _____
David: Can you give me some examples?
Maria: _____
David: Yes, but the city is more dangerous than the country.
Maria: _____
David: I'm sure that the country is more relaxed, too!
Maria: _____
David: I think that's a good thing!
Maria: _____
David: How about the cost of living? Is the country cheaper than the city?
Maria: _____
David: Life in the country is also much healthier than in the city.
Maria: _____
David: I think YOU are crazy for moving to the city.
Maria: _____

1. Oh, I don't. The country is so slow and boring! It's much more boring than the city.
2. Oh, yes. The city is more expensive than the country.
3. That's true. People in the city aren't as open and friendly as those in the countryside.
4. There are many things that are better than living in the country!
5. Well, I'm young now. Maybe when I'm married and have children I'll move back to the country.
6. Well, it certainly is more interesting than the country. There is so much more to do and see!
7. Yes, it's cleaner and less dangerous in the country. But, the city is so much more exciting. It's faster, crazier and more fun than the country.
8. Yes, the city is busier than the country. However, the country is much slower than the city.

Check your understanding with this multiple choice comprehension quiz. Put T if the statement is true and F if it is false. If it is false, correct the information.

1. Maria thinks life in the city is more interesting than life in the country. ( )
2. David says that the city is less dangerous than the country. ( )
3. The people in the countryside aren't as open as the people in the city. ( )
4. The country is quieter than the city. ( )
5. The city isn't as expensive as the country. ( )
6. The country is healthier than the city ( )
7. Maria thinks the city is more fun than the country. ( )
8. David thinks Maria is crazy for leaving the country. ( )
9. Maria says she might move back to the country when she is married ( )

and has children.

10. Life in the country isn't as hectic as life in the city. ( )

5. Writing Skills

City and Country Life

Chris Duncan is a 35-years-old doctor who lives in London but spends most weekends in the summer at a cottage in the village of Ireton Wood. He says:

'For me the life in the country is wonderful – all this fresh air and the singing of the birds! If I couldafford it, I'd give up my practice in London and come to live here all the year round. I'm tired of the citywith its pollution and the traffic and the people rushing about from place to place without the time tothink and look around. Every time I wake up in this cottage, and look out and see the flowers and the grass and that magnificent line of trees on the hill over there, 1 feel it's, good to be alive. Whereas in London it's depressing. Standing in queues,-waiting for buses and then being stuck in the underground like sardines. There are so many people that you can'rbreathe. And everyone is in such a rush! What I like most about the country is that everyone knows everyone else, and they are friendly. In the city if you live in a block of flats, like me, you can be there for years and never even get to know your neighbours. There are some in my block I've never seen. There is a lot more crime and violence in thecity than in the country. Of course, the life in London is exciting but people don't go out every night there, because they can't afford it'.

Alan Sumner, aged 22, is the son of Ireton Wood farmer. He has a different view on the city arid country life.

'For my Dad and me, the country isn't a matter ofiooking out ofthe window at the trees. It's a bit different if you have to get tip at five in the morning, with snow on the ground, to milk the cows. And all the tune you have to watch the weather! And your neighbours! Some of them are not worth knowing at all. Take the Cartwrights, for instance. Old Jack Cartwright won't even tell you the time without expecting you to pay him something, and as for his wife, well, she sits there with her nose pressed to the window all day spying on everyone... You will tell me that there are gossips in the city too. Maybe, but not like Mrs. Cartwright If you say 'Hello' to a girl in this village, it will get around to everyone in about two hours thanks to her, and the next thing you know someone will come up and ask you when you are going to get married! That's the trouble with the country. Always the same faces, and you can't get away-from them. I'd like to live in the city and rneet some interesting people. All right, I admit we've gotless crime. It's a quiet life. But there is nothing to do here. In London you've got discos and cinemas and theatres. Here if you feel like going out on a Saturday night, you've either got to play darts or billiards in the club or else take a girl to see some old film in the nearest town. And to do that you've goi to have a car, because the last bus back leaves at 10.20. And what about the schools? You'ye got/good schools in the city, top, I doh't mind telling you, if I had a better education 1 wouldn't be stuck on the farm. I'm quite sure you'd soon get fed up with Ireton Wood if you had to live here all the year round.'

Samuel Oaks, is a 43-years-old ‘farmer whose ancestors lived in the country all their lives.

‘The thing I like most about living on the farm is the change of seasons: Spring, summer, autumn and winter – you can see them all come and go, and each one is compietely.different. In the city you can’t tell the difference – you can buy summer flowers in winter and eat the same vegetables all the year round. Here in the country you only eat things at certain times of the year – for example, strawberries in June and turnips in winter. You live with the season: Also we make most of our food – we make butter and cheese, we grow our own vegetables and bake our own bread. We never eat frozen or tinned food. Everything is fresh – soil-must be better for you. City people may think we miss a lot of good things about modern life, but in my opinion they miss a lotmore than wedo – they miss real life’.

Samuel’s daughter Alex, is 15 and she doesn’t agree with her father.

‘I hate living on the farm. I haven’t got any friends here. I have to travel 15 miles-to school every day-many weather. If I want to go out at weekends, I have to go 20 miles to the nearest town, but the last bus is really early. I’d prefer to live in the city with good shops and places to go. I never do anything here but work helping my parents about the farm. 1 can’t wait to leave home and get a job in town. I’ll never be a farmer’s wife!’

John Williams is 28 and he lives in Hampstead, about 5 km from the centre of London.

‘Life is fast here and there is always something to do – cinemas, theatres, restaurants. Shopping is fantastic – you can buy anything you want in London, shops are often open late in the evening and on Sundays. I like the pubs – many have music in the evening. The street markets are great and I like London’s parks too. Lots of people in London don’t have gardens so it’s good to get out for a walk. There are bad things about London, too. of course. There are too many people, you have to queue for everything – in the banks, supermarkets, post offices. And it’s true that London is dirty – people jus throw things in the street and I hate that. It’s also very noisy and there is too much traffi**C.** But I still prefer London to any other place 1 know’.

Sheila Brooks is 25, she is a young school teacher and lives in a small village called Henfield with a population about 500, people.

‘I love it because it’s quiet and life is slow and easy. You never have to queue in shops or banks. The village is clean – the people look after it and don’t throw their rubbish in the streets. The air is clean too because there is not much heavy traffic. It’s much more-friendly here than in a city. Everyone knows everyone and if someone has a problem there are always people who-can help. There aren’t many things that I don’t like about Henfield. One thing is that there isn’t much to do in the evenings – we haven’t got any cinemas or theatres. The other problem is that people gossip – you know, in small places people always talk about each other and everyone knows what everyone is doing. But I still prefer village life to life in a big city.’

Trudie Pollock, a London psychiatrist speaks about one more city problem.

‘I see many people with the same problem – they are lonely. They don’t usually say they are lonely – instead they say they have problems with their jobs, their home life they say they can’t sleep or work well or that they are unhappy. But when I speak to them I find it is often because they don’t know enough people to spend time with- or they find it ‘difficult to meet people. There are thousands of people like this in London – students away from their families for the first time, young people who moved to London to work mothers with young children, old people living alone. These people don’t need hospitals or drugs, they need other people: I help them to think how they can meet other people and make friends. Some people can join sports clubs. Others can learn something new – a new language yoga, cooking – go lo evening classes and meet people there. Young mothers can join ‘mother and baby’ clubs and there arc social clubs for old people. There are lots of ways to meet people in. London, and my job is often just giving them information and advice’.

Nataliya is a journalist from London.

Living in the city has both advantages and disadvantages. On the plus side, it is often easier to find work, and there is usually a choice of public transport, so you don’t need to own a car. Also, there are a lot of interesting things to do and places to see. For example you can eat in good restaurants, visit museums and go to the theatre. You can do a lot in the city and you never feel bored.

On the other hand, living in the city is often very expensive. It is particularly difficult to find good, cheap accommodation. Public transport is sometimes crowded and dirty and even the parks can be very crowded, especially on Sundays. Despite all the crowds, it is still possible to feel very lonely in a city.

Mr.Smyth is a civil enginer from Wales.

Towns can be convenient places to live in because they have many facilities like swimming pool, tennis cours, concert hall, art gallery, university, nightclub, car hare agency, department store. Towns also have their own special problems such as traffic jams, slums, vandalism, overcrowding, pollution, and crime.

Fill in the table writing out all the arguments (pros and cons) Chris. Alan, John, Sheila, Samuel, Alex, Trudie, Nataliya and Mr.Smyth use for and against country and city life.When you finish with them, add your arguments based on what you know about these types of life in your own country. Some arguments are given as examples.

Pros	**Cons**	**Pros**	**Cons**
of the country life		**of the city life**	
fresh air	hard work	less gossip	crowds of people

UNIT TWO. COMPUTER AND COMPUTER EQUIPMENTS

1. Reading Comprehension

Text 1. The Abacus

Even before humans could read or write, they needed to count. First they used their fingers, but when they had to deal with figures over ten, a counting device became necessary. Pebbles and bits of wood arranged on the ground were used to count goods and to figure prices. These were the predecessors of the abacus. The abacus has two distinct variations: the counting board and the bead frame abacus.

The earliest counting boards – possibly used as early as 3000 BC – probably involved pebbles and twigs and lines in the sand, so it is no wonder no such boards have ever been discovered. The oldest surviving counting board is the Salamis tablet, which was used as early as 300 BC in Babylon, and which was discovered on the island of Salamis in Greece. The Salamis tablet is a large flat slab of marble with sets of lines for different figures. Similar boards were also used in ancient Greece and Rome and in medieval Europe. These used ‘counters’ to keep track of figures. Greek and Roman ‘counters’ were usually small stones called *calculi* while Europeans used coin-like pieces of metal. The counting board may seem now like an outdated invention, but it was still being used in England as late as the 18th century. The bead frame abacus as we know it today was probably invented by the Chinese sometime around the second century AD. It is usually made of a wooden frame with 13 vertical wires and 7 beads on each wire. The Japanese adopted and modified the Chinese abacus around the 17th century, reducing the number of beads on each wire to six and later on to five. A third form of the abacus is the Russian abacus which was probably brought to Russia from China and was modified for counting in rubles. Other ancient cultures, such as the ancient Egyptians and the Aztecs also used similar calculating devices. Without being influenced by the Chinese, the Aztec abacus evolved into a very similar device: it had exactly the same number of ‘beads’ and ‘wires’ – in this case, the beads were kernels of corn and the wires were strings.

The first counting devices were very simple. Neither a counting board nor an abacus performed any numerical operations on its own. The calculations were performed mentally by the person using the abacus, and both of these devices were only used for recording separate steps and keeping track of figures.

The abacus may seem obsolete in the world of modern computers, but in fact it is still in use in many countries around the world.

Answer the following questions about the abacus.

1. The first counting device was _____ .

A. the Chinese abacus
B. the Salamis tablet
C. the human hand
D. the counting board

2. Why does the earliest counting board date only to 300 BC when counting boards were possibly being used in 3000 BC?

3. What are *calculi*?

4. Which two types of the abacus were directly derived from the Chinese abacus?

A. Aztec and Japanese
B. Japanese and Egyptian
C. Egyptian and Aztec
D. Russian and Japanese

5. The Japanese abacus _____ .

A. had a wooden frame and five or seven kernels on each string
B. was made of marble and required the use of ‘counters’
C. was derived from the Chinese abacus in the second century AD
D. had a wooden frame and five or six beads on each wire

6. The basic function of the abacus is to_____ :

A. help one in counting, in a passive way.
B. keep track of figures smaller than ten.
C. replace the calculator.
D. keep a record of past financial transactions

7. Match:

A. abacus was invented in China	1. 21st century
B. abacus still used in England	2. 18th century
C. origin of Salamis tablet	3. 2nd century AD
D. abacus still used in many countries	4. 300BC

Text 2. The Era of Mechanical Computation

With the need to deal with higher and higher figures, a more sophisticated counting machine became necessary, but little progress was made beyond the abacus until the beginning of the seventeenth century, whose great minds gave birth to the first ideas concerning mechanical computation. The first counting device - a mechanical ‘Calculating Clock’ was invented by Wilhelm Schickard in 1624, but was forgotten for a time, so the man usually credited with inventing the first mechanical calculator is Blaise Pascal. Pascal, a French scientist and inventor, created a device in 1642 which, unlike the passive abacus, performed mathematical operations in an active manner. This calculator, called the ‘Pascaline’, could add and subtract numbers with up to eight digits, but was never used much because of its high cost and unreliability. German mathematician and philosopher Gottfried Wilhelm von Leibniz studied the Pascaline, and by means of an innovative gear system added a third function: multiplication, which was performed as a sequence of additions. The first mechanical calculator that could perform the four basic arithmetic functions was built by Frenchman Charles Xavier Thomas of Colmar more than a century later. Colmar’s ‘Arithometer’ of 1820 was widely used until the beginning of the twentieth century.

The first step towards the creation of computers as we know them today was made by an English mathematics professor, Charles Babbage. Early on, he realized that all mathematical calculations can be broken up into simple operations which are then constantly repeated, and that these operations could be carried out by an automatic, rather than a mechanical, machine. He started working on a ‘Difference Engine’, but after ten years he abandoned it for the ‘Analytical Engine’ – the real

predecessor of the computer. The plans for the colossal steam-powered Analytical Engine made use of another great invention, punched cards, created in 1820 by Joseph-Marie Jacquard for use in looms. The cards were to function as programs. Sadly, Babbage never completed the machine, largely due to poor machining techniques of the time.

Punched cards were also used seventy years later by an American inventor, Herman Hollerith, who created a computing machine out of necessity. He was charged with the task of computing the U.S. Census, and so his machine used punched cards as a primitive form of memory to store data rather than as programs. Although still mostly mechanical, Hollerith's 'computer' was the first machine to use electricity, thus bringing to a close the 'Mechanical Era' of computation.

Answer the following questions about early calculating devices.

1. Explain the most important difference between an abacus and early calculators.

2. The first mechanical counting device was invented by _____ in _____ .
   A. Blaise Pascal, 1820
   B. William Schickard, 1624
   C. Gottfried Wilhelm von Leibniz, 1642
   D. Charles Xavier Thomas of Colmar, 1820

3. The first machine which could handle multiplication and division was…
   A. the Pascaline
   B. Leibniz's innovation of the Pascaline
   C. the Arithometer
   D. the Difference Engine

4. Which of these statements is true?
   A. In 1820 Colmar's Arithometer was no longer in use.
   B. The Pascaline could add and subtract ten-digit figures.
   C. The Difference Engine was powered by electricity.
   D. Babbage's Analytical Engine was never built.

5. The man who first planned his machine to deal with mathematical operations as sequences of simple repetitive tasks was _____ .

6. Punched cards were _____ .
   A. invented by Charles Babbage in 1820
   B. used as programs by Herman Hollerith
   C. first used in looms in 1820
   D. used for storing data by Joseph-Marie Jacquard

7. Which of these was **not** a part of Herman Hollerith's computer?
   A. punched cards used as programs
   B. electrical power
   C. punched cards used as memory
   D. mechanical functions

Text 3. Early Computers

Babbage and Hollerith paved the way for further progress. In addition to Babbage's ideas of breaking complicated calculations down into small operations and

the first attempt at programming, and Hollerith bridging the gap between the mechanical era and the new age of electronic computers, the work of mathematician George Boole was a key to further development. By means of determining that all mathematical calculations can be stated as either true or false, Boole defined the binary system – to be used by all future computers.

There are three machines which have claimed the title of being the first electronic computer ever. Instead of using electromechanical relays, they used fully electronic switches: vacuum tubes. These had one important advantage – they were about a thousand times faster than mechanical switches. They also had one disadvantage: vacuum tube computers were gigant**ic.** This is the most important reason they were replaced by smaller transistors in the 1950s. In 1941, J. V. Atanasoff, a professor at Iowa State University, and Clifford Berry, a graduate student, designed the first all-electronic computer using Boolean algebra. Although Atanasoff's machine used such advanced technology as vacuum tubes, it was still more like an electronic calculator than a computer.

It must be said that breakthroughs in the evolution of the computer were in many cases preceded by breakthroughs in the evolution of the calculator. Very sophisticated calculators were created in the 1930s by Konrad Zuse in Germany. Zuse, who also built computers for the German army in 1943, was one of the first to use Boole's binary system.

The Colossus, a computer designed by Englishman Alan Turing in 1943 exclusively for breaking German code messages during World War II was a second machine claiming the title of the first computer.

The third 'first computer' was also originally created for military purposes: the ENIAC (Electronic Numerical Integrator and Computer), built by J. P. Eckert and J. V. Mauchly at the University of Pennsylvania, was to be used for calculating trajectory tables of newly developed weapons. However, the ENIAC was not completed until 1945. Shortly after the war it was used in developing the hydrogen bomb and later for weather prediction, etc. Although the ENIAC weighed some 80 tons and used about 1,800 square feet of floor space, it could store data and was crudely programmable – by wiring certain units of the machine in specific sequences.

Later the ABC (Atanasoff-Berry Computer) was ruled the first electronic computer, largely because it was the first to use vacuum tubes, even before the ENIA**C.** The inventors of the ENIAC went on to create the EDVAC, the first computer with a stored program. Since the computer was now capable of storing instructions as well as data, it could function more smoothly and was also faster.

As transistors replaced vacuum tubes in the 1950s, computers began to grow smaller and faster – a process that continues today.

Answer the following questions about the first computers.

1. What number system was used by the first computers?

A. decimal system
B. duodecimal system
C. binary system
D. metric system

2. Name one advantage and one disadvantage of vacuum tubes:

_____

_____

3. _____ was the first all-electronic computer.

A. the EDVAC
B. Zuse's calculator
C. the ENIAC
D. the ABC

4. The ENIAC was the first programmable computer. How was the programming performed?

5. Which of these computers were not created for military purposes?

A. the ABC
B. the ENIAC
C. the Colossus
D. Konrad Zuse's computers

6. Vacuum tubes _____ .

A. were first used in computers by J. V. Atanasoff
B. were replaced by mechanical switches
C. were invented by George Boole
D. were in use before World War I

7. The ENIAC was not used for _____ .

A. weather forecasting
B. breaking enemy code
C. calculating trajectories of weapons
D. developing the hydrogen bomb

Text 4. Computers Today

The invention of the transistor in 1947 was the beginning of a new era. Vacuum tube computers, which had taken up many rooms, now shrunk to bearable sizes. The transistor was also much faster and more reliable. As before, computers were now being used by specialized laboratories, but more often for peacetime science than for military purposes. Early supercomputers, the Stretch by IBM and the LARC by Sperry-Rand, were built for atomic energy laboratories. These were the first machines to replace binary codes with programming codes consisting of a few letters. Additionally, they each had an operating system and a memory, and could store data on disk.

Transistors were definitely an improvement, but there was one drawback: they created heat, which tended to damage the heat-sensitive components. This problem was eliminated by the invention of the integrated circuit in 1958. The integrated circuit compressed several components onto one tiny quartz chip. The number of the components one chip could hold rose into the hundreds, later into the thousands, and then into the millions with ultra large scale integration (ULSI). In addition to the invention of the integrated circuit, another development of the 1960s was an operating system with a central program supervising other programs which could run simultaneously. Since computers were no longer so large, they also became cheaper. In the 1970s, computer manufacturers were ready to bring computers to consumers. These computers had user-friendly programs and offered the first word processors,

spreadsheets, and even the first computer games! In 1981, the first IBM PCs were introduced into homes, schools and offices. The Apple Macintosh was introduced three years later. These computers looked much like the ones we are used to today: they had a monitor, a mouse and a keyboard. The number of personal computers soared from 2 million in 1981 to almost 6 million in 1982, to 65 million in 1992. As their potential grew, new ways of using computers were being developed. Computers could be linked together to form networks sharing software, memory space and information. The World Wide Web, which was started in 1989, links up computers worldwide to provide people with opportunities to share information and to enable communication via e-mail. Today computers are an inseparable part of many people's lives and jobs and are likely to continue to be tools that we rely on.

Answer the following questions about modern-day computers.

1. Computers using transistors were _____ than vacuum tube computers.

2. Early supercomputers _____ .
   A. stored data on disk **C.** used binary codes
   B. had no operation system **D.** had no memory yet

3. What disadvantage of the transistor did the integrated circuit eliminate?

4. Which of these could not have been used by someone in the 1970s?
   A. a spreadsheet **C.** a web-page
   B. a computer game **D.** a word processor

5. The first personal computers (PCs) appeared in _____ .
   A. 1989 **B.** 1981 **C.** 1958 **D.** 1947

6. Name at least one of the first manufacturers to supply the market with user-friendly computers:

7. Name at least three advantages computer networks create:

8. How is your life influenced by computers? What are their benefits and drawbacks? How would your life be without them?

2. Vocabulary Exercises

1. Match words with their definitions.

A.

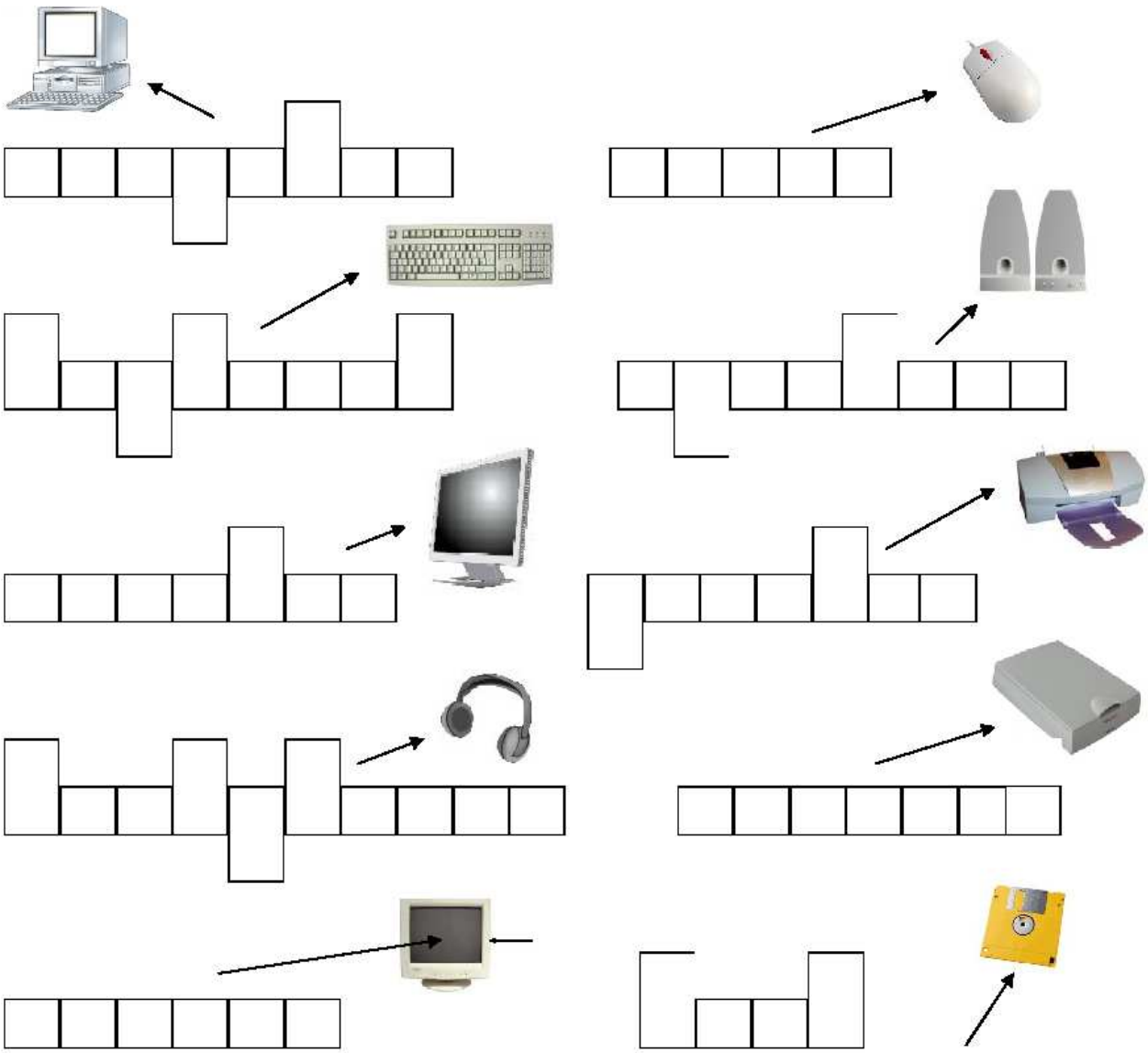
1.	icon	**A.**	controls the location of the cursor on the display
2.	surf	**B.**	programs on a computer
3.	software	**C.**	to receive material from the internet onto your computer
4.	mouse	**D.**	to look at internet pages
5.	to download	**E.**	program which can harm your computer
6.	internet	**F.**	the world wide web
7.	network	**G.**	a picture representing a program

8. virus **H.** two or more computers directly linked

B.

1. programmer **A.** icon that connects directly to a filer folder or …
2. pop-up **B.** marks where you are going to type on the computer
3. shortcut **C.** we use it to type into a computer
4. printer **D.** hardware that puts materials from computer to …
5. keyboard **E.** another word fro computer screen
6. hardware **F.** message or screen that appears without direct
7. cursor **G.** person who makes or modifies computer
8. monitor **H.** Equipment which makes up a computer

2. Look at the pictures below. Write down the names of computer equipment.



3. Choose the right word.

A.

About Computer

links	menu	mouse	pointer

printer	screen	word processor

1.A small object which you use to move the pointer around the screen: a _____ .
2.The cursor acts as a _____ to point to what you want the computers to do.
3.The _____ prints the text.
4.The part you look at when you watch TV or use a computer : _____ .
5.This equipment is used by secretaries, writers and other people to produce a text: a _____ .
6.A modem _____ a computer with other computers through the telephone.
7.A list of things you can ask the computer to do : a _____ .

B. **Using computer**

database	document	memory	modem	spreadsheets
template	terminals	toolbar	word processor	

1. The _____ save me a lot of time when I'm doing the accounts.
2. We have a huge _____ with detailed information about all our customers.
3. The three most important kinds _____ that your PC can create are word processor, database and spreadsheet.
4. You can't get onto the internet unless your computer has a _____ .
5. Most computers have enough _____ to store a vast amount of information.
6. Many people only use their computer as a _____ all they do is write letters and reports on it.
7. It's usually quicker to use the icons on the _____ than to keep using the menu.
8. The central computer in this office serves thirty-two _____ .
9. If you write a lot of similar letters, you can save a lot of time by using a _____ .

4. Find the words.

1. This is used to view websites, download movies and songs, or chat with friends.
_____ (I E E N N R T T)
2. The thing on which you see everything that your computer shows.
_____ (O R I O M T N)
3. Used to get documents from a computer onto paper
_____ (R P R T I E N)

4. Used to type stuff in
_____ (K D B Y A E R O)
5. Used to listen to music
_____ (D R E U K A S P L E O)
6. The most common operating system, developed by Microsoft.
_____ (N I S W D W O)
7. The common term given to all music, videos, and other forms of data.
_____ (M T E U I L M I D A)
8. A portable computer that can be carried around
_____ (P O A L T P)
9. Often used to connect to the internet, especially wirelessly with laptops
_____ (E T R O R U)
10. A computer monitor where you can interact with the system by touching it.
_____ (E R H O T C U N E C S)

5. Choose the right word.

1. A server administrator needs to have a _____ recovery plan.
A. patch **B.** storm **C.** disaster

2. A LAN is a _____ area network.
A. local **B.** light **C.** low

3. The small box that dispatches one connection into several connections is a _____ .
A. switch **B.** computer **C.** screen

4. A WAN is a _____ area network.
A. warm **B.** wild **C.** wide

5. For a screen, the display size unit is _____ .
A. gallon **B.** inch **C.** pixel

6. A _____ is a small computer you can bring with you everywhere.
A. printer **B.** hub **C.** laptop

7. A WLAN is a _____ LAN.
A. wireless **B.** wide **C.** wild

8. Your TV can be set up with its _____ control.
A. random **B.** remote **C.** reverse

9. DVD means Digital _____ Disc.
A. versus **B.** versatile **C.** valid

10. On the web, the address of a website is called the _____ .
A. url **B.** html **C.** smtp

6. Find the right word.

Computer and You

1. A kind of germ that can cause disease __ __ **r** __ __ .
2. It's better to dump it when it is overloaded __ __ __ __ **r** __ .

3. If you want your computer to follow you everywhere you ought to buy a __ __ **p** __ __ __ .
4. Mine is Hidalgo __ __ __ __ **n** __ __ __ .

5. This small undesirable insect gave its name to some software defects __ **u** __ .
6. A sport you do on a board in the sea __ **u** __ __ .

7. Thanks to it, you can type messages on your computer __ __ __ __ __ __ **r** __ .
8. When you want to ransfer data from a source to a destination, you have to copy and **p** __ __ __ __ .

9. You have to click or double click on it __ **c** __ __ .
10. You should sit or stand as far from it as possible to avoid eyestrain __ **c** __ __ __ __ .

7. Read the text below and choose the correct word for each space.

Birth of the Computer

Most people think of computers as very modern inventions, products of our new technological age. But actually the idea for a computer (1) _____ worked out over two centuries ago by a man (2) _____ Charles Babbage.

Babbage was born (3) _____ 1791 and grew up to be a brilliant mathematician. He drew up plans for several calculating machines (4) _____ he called 'engines'. But despite the fact that he (5) _____ building some of these he never finished any of them. Over the years people have argued (6) _____ his machines would ever work. Recently, however, the Science Museum in London has finished building (7) _____ engine based on one of Babbage's designs. (8) _____ has taken six years to complete and more (9) _____ four thousand parts have been specially made. Whether it works or not, the machine will be on show at a special exhibition in the Science Museum (10) _____ remind people of Babbage's work.

1.	**A.**	has	**B.**	was	**C.**	had	**D.**	is
2.	**A.**	known	**B.**	recognized	**C.**	written	**D.**	called
3.	**A.**	on	**B.**	in	**C.**	by	**D.**	for
4.	**A.**	whose	**B.**	who	**C.**	these	**D.**	which
5.	**A.**	wanted	**B.**	made	**C.**	started	**D.**	missed

6.	**A.**	until	**B.**	whether	**C.**	while	**D.**	though
7.	**A.**	some	**B.**	the	**C.**	an	**D.**	that
8.	**A.**	One	**B.**	He	**C.**	They	**D.**	It
9.	**A.**	than	**B.**	therefore	**C.**	when	**D.**	then
10.	**A.**	t o	**B.**	as	**C.**	for	**D.**	so

8. Put the correct word from the box after each definition.

banner	browser	search term	cookie	download	kilobyte
modem	pop-up	search engine	subscription	portal	URL

1. Money you must pay to access some sites is _____ .
2. Wide, rectangular advert on top of many sites is _____ .
3. Take a file from internet and put onto your computer is _____ .
4. Program your computer uses to see internet, e.g. Internet Explorer is _____ .
5. Small advert which jumps up above the page you are reading is _____ .
6. An amount of information. An average web page is about 20 is _____ .
7. The words you type in when looking on a search engine is _____ .
8. A web site which acts like the centre of many other services like news, e-mail, shops. e.g. Yahoo is _____ .
9. Web site you can use to find other web sites relevant to your interests is _____ .
10. The address of a web site. e.g. http://www.cnn.com is _____ .
11. Small file that sites put onto your PC with information about your visits to their sites from the past is _____ .
12. Machine that connects your computer to the net via the telephone is _____ .

9. Find the words.

Internet

1. A series of interconnected computers and databases around the world
_____ (N E T E I N T R)
2. A part of a website that can be read on a computer screen
_____ (A W P B G E E)
3. The first page that you can see when you look at a website
_____ (P E O A H ME G)
4. A piece of equipment that is used to send information from a computer through a telephone system
_____ (D M O M E)
5. To copy computer programs or information electronically
_____ (D L D A W N O O)
6. A connection between documents on areas on the internet
_____ (I L N K)

7. www is an internet address which stands for
_____ (W E W O L I E R B D D W)
8. To press the button on a computer mouse
_____ (I C K C L)
9. To organize and design the words on a page or written document
_____ (T OM A F R)
8.A computer program which allows you to look at pages on the internet
_____ (S B W O R R E)

10. Choose the right word.

A. **Internet Words**

1. The internet is also called the _____ .
A. web **B.** Intranet **C.** matrix

2. We _____ on the web.
A. sloop **B.** turf **C.** surf

3. The index page of a website is called a _____ .
A. backpage **B.** homepage **C.** pager

4. Google is an example of a _____ .
A. hoppy rabbit **B.** search engine **C.** blog

5. An online diary or journal is called a _____ .
A. blog **B.** search engine **C.** napster
6. The opposite of download is _____ .
A. upload **B.** backload **C.** outload

7. People love to download music in _____ format.
A. PDF **B.** Microsoft Word **C.** MP3

8. To select an Internet link, you _____ it.
A. jack **B.** click **C.** pick

9. If something is on the Internet, it is _____ .
A. onsite **B.** online **C.** on standby

10. A fast Internet connection is called a _____ connection.
A. broadbank **B.** dial-up **C.** broadband

B. **Internet and Computer**

1. My computer keeps _____ all the time !
A. crashing **B.** breaking **C.** planting

2. If you want to read your e-mails, you must _____ first.
A. log off **B.** switch on **C.** log on

3. I prefer working on a _____, for I can take it with me wherever I go.
A. computer **B.** desktop computer **C.** laptop

4. My _____ is not working!
A. mickey **B.** mice **C.** mouse

5. Press any _____ and see if it works.
A. touch **B.** key **C.** button

6. If you want to get some information about this subject, use a _____ .
A. help engine **B.** search engine **C.** engine help

7. Before you leave, don't forget _____ !
A. to log off **B.** to shut **C.** to close

8. All my work is gone ! I forgot _____ my data !
A. to keep **B.** to save **C.** to hold

9. You should _____ this programme, it offers many new possibilities.
A. download **B.** take **C.** carry

10. Wait for me, I won't be long, I'll just _____ my email.
A. verify **B.** go on **C.** check

3. Vocabulary Development

1. Find the proper words coming from the words in brackets to complete the sentences.

The Birth of Internet

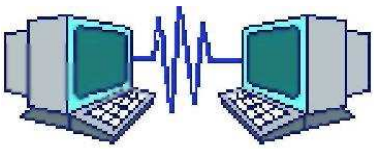
The Internet grew out of a project _____ (ORIGIN) set up in 1969 by the Pentagon.

It helped scientists to exchange _____ (SCIENCE) documents and so on, at a speed that is almost _____ (INSTANT).

t

The Internet is now a vast _____ (GLOBE) network of networks with over 30 million users.

It _____ (ABLE) them to consult huge databases, transfer data, send and receive mail _____ (ELECTRONIC).



On the World Wide Web, you can see the latest images of Mars, go on a tour of a museum or an art _____ (EXHIBIT).

Of course, not all of this is free and you have to pay a _____ (SUBSCRIBE) fee to an Internet service _____ (PROVIDE) such as AOL or Wanadoo.

However, there is a wide _____ (CHOOSE) of newsgroups and these are all free of charge.

4. Speaking Practice

1. Answer the following questions.

Do You Know Your Computer?

1. What can we use to move the cursor around the screen?
2. What is the name for the drop-down lists at the top of the window in most computer programs?
3. What are Times New Roman, Comic Sans Ms, Courier New etc.?
4. What is the name for the glass part of the monitor that you look at?
5. What do we call the flashing ‘I’ bar on the screen?
6. Where do you find the Delete, Control and all the letter and number keys?
7. What’s the name for a computer that you can carry around?
8. What do we call the television part of a computer?
9. What do we use to make a paper copy of our computer work?
10. What do we call the small square pictures at the top of the window in most computer programs?

5. Writing Skills

1. Put in order.

Computer Science

1. morning, | copies. | the | out | computer | two | on | printed | I | wrote | a | report | this | I | then |

2. the | warning, | crashed. | Without | computer | any |
3. the | I'm | I | lost | afraid | whole | document. |
4. to | connect | you | line. | phone | to | to | want | get | your | have | online, | a | If | you | computer |
5. from | You | the | Internet | your | a | of | download | own | information | computer. | onto | can | lot |
6. this | new | on | virus. | There | news | the | about | was | a | computer | a | warning | morning |
7. If | e-mail | destroys | it | message | contacts. | a | all | Showers', | your | open | called | 'April | you |
8. browsing | I | websites. | different | just | ages | spend |
9. may | on | are | It | you | search | depend | the | engine | using. |
10. Some | user-friendly | more | others. | and | programs | computers | than | are |

2. Devide the following statements about computer into two groups 'The Advantages of Using Computer' and 'The Disadvantages of Using Computer'. Also write down own idea about advantages and disadvantages of using computer and computer equipment.

1. Anyone can put information or images on the Internet, so it can easily be used by criminals to communicate with each other. There are no laws to stop this yet, and it is extremely difficult to police trie Internet.
2. Children enjoy using computers, and multimedia, interactive software and virtual reality all make learning more exciting. Many books are now available on CD-ROM.
3. Computers can do some jobs very quickly, for example sending out large numbers of letters or bids.
4. Computers can get viruses.
5. Computers let you access a lot of information.
6. Computers let you communicate very quickly, by e-mail or using the Internet.
7. Computers make it possible to work from home.
8. Computers quickly become obsolete, so they soon need to be replaced.
9. If a computer is not working properly, most people do not know how to fix it, and this can be very annoying.
10. Large amounts of information can be stored on computer in a database.
11. Many people do not like using computers, and would prefer to deal with a person instead.
12. Software often has bugs, and sometimes computers crash.
13. Some children spend too much time playing computer games, which can be very violent.
14. Word processors make it easier to write letters and reports, and to do work for school or college.

The Advantages of Using Computer	**The Disadvantages of Using Computer**

UNIT THREE. FAMOUS BUILDINGS

1. Reading Comprehension

TEXT 1. Mystery of Stonehenge

(1) What makes the enormous group of rocks called Stonehenge so famous? The answer is simple: Its huge, impressive stones sit atop a slight hill on Salisbury Plain, 80 miles west of London, England, and are visible at a distance from all sides. For centuries, the site has intrigued visitors and passersby. Yet, despite years of investigation, questions remain. Who built it? And, why?

(2) A thousand-years ago, people thought the mythical magician Merlin built Stonehenge. They reasoned that only a magician could have moved such enormous stones. After all, the biggest – those we call sarsens – average 26 tons each, and the largest sarsen weighs 45 tons and measures 30 feet in height. The smaller stones – those known as bluestones – average four tons each. About 250 years ago, an expert of the time proposed the idea that the Druids built Stonehenge. Unfortunately, it was this theory that remained in most people's minds. Even today visitors to the site ask, 'Didn't the Druids build Stonehenge?' The answer is a definite 'NO!' The Druids did not reach the British Isles until 1,000 years after construction at Stonehenge had ceased.

(3) Today, archaeological evidence confirms that Stonehenge was built by the prehistoric people who lived in the area. About 3000 B.C., even before the stone circle was built, wooden posts were erected and surrounded by a henge (see page 10). Over the next 1,500 years, leaders in the area directed their architects and workers to build various structures within the henge. The main reason for this construction was probably to hold seasonal ceremonies. It seems that there were different phases and arrangements over the 1,500 years of building; however, the heel stone, set a few yards outside the circle, was always the focus. The stones were placed so an observer could see through them to watch the rays of the rising midsummer sun light up a place near the heel stone. But Stonehenge is not just stones. It is surrounded by an enormous bank and ditch, outside of which are 56 holes, called the Aubrey Holes after their discoverer, John Aubrey. Their purpose is not known. Nearby are other sacred places, including what is called The Avenue, which leads from the Avon River up to the stones. There are also many burial places around Stonehenge called barrows.

(4) In 2002, archaeologists were asked to investigate the site of a future housing development located near Amesbury, a few miles from Stonehenge. To their amazement, a burial was uncovered that contained more objects than any other burial site in Britain from this period. Among the finds were the bones of a man dating to 2300 B.C. Archaeologists named him the Amesbury Archer because there were stone wrist guards buried with him, as well as many stone arrowheads and a stone toolkit for butchering carcasses and making additional arrowheads. Nearby, the remains of a younger man from the same period, with gold hair fasteners beside him, were uncovered. Analysis of the bone structure of both men revealed that the two were related. A year later, the bones of four adults and two children were found just three

miles from Stonehenge. They, too, were from the same period. Archaeologists determined that the huge sarsens came from 20 to 30 miles north of Stonehenge. Chiefs or directors must have organized the transport of such tremendous weights. How they moved the stones is still not certain – perhaps with sleds, rollers, or even a greased wooden trackway. As for the smaller bluestones – archaeologists still disagree about their origins and transport. Were they brought from the mountains of Wales and floated on rafts down the Bristol Channel? Or did the retreating glaciers leave a few bluestones on nearby Salisbury Plain, where people collected them? Construction at Stonehenge finally stopped about 1500 B.C. Why building came to an end is unclear. Probably beliefs had changed, and it was no longer important to use stones in sacred ceremonies.

(5) Today, Stonehenge has a modern problem – too many visitors, about 1,000,000 each year. Thus, the question is how to preserve Stonehenge for the future while, at the same time, making its stones and the surrounding historic landscape accessible to all. One solution involves the two highways that run by the site. Most agree that one should be closed. The other could have a partial tunnel that would take vehicles below ground as they ride by the site, thereby reducing noise, earth movement, and exhaust pollution. Another solution would be for visitors to travel about the site on a small train that offers a recorded tour. Such a project is being discussed, along with the problems it presents: the route of the track and the location of the path that will allow visitors an opportunity to see the stones up close. There are many details to be resolved, but, as one expert says, ‘Stonehenge has been here for thousands of years; let’s not be hasty!’

(6) The word ‘megalith’ traces its roots to the Greek words mega (‘great’) and lithos (‘stone’). Megaliths come in many shapes, sizes, and forms and can be found throughout the world. Those that are freestanding are known as menhirs; others are rows of stones called alignments. Still others form circles. There are also upright stones topped with a capstone to form a burial place. These are dolmens. Sometimes, they form a long passageway that leads to a burial chamber. The earliest megaliths are found on Malta and date to about 3500 B.C.

1. Read the article, ‘Mystery of Stonehenge’ below then answer the eight reading comprehension questions that follow.

1. Which of the following questions about Stonehenge can be answered based on archeological evidence?

A. Why was Stonehenge built?
B. When was Stonehenge built?
C. Who built Stonehenge?
D. What is the purpose of the Aubrey Holes?

2. Modern Britain is to Cemetery as Ancient Britain is to _____ .

A. Barrow
B. Ceremony
C. Stonehenge
D. Druid

3. One thousand years ago, people Stonehenge was built by _____ .

A. the Druids
B. the Celts
C. Merlin the Magician
D. eastern Europeans

4. Under what circumstances did archeologists locate the burial site and remains of the ‘Amesbury Archer?’

A. while investigating the site of a housing development in 2002
B. while conducting a geophysics survey
C. while studying prehistoric images
D. when an expert proposed that the Druids built Stonehenge

5. Which of the following was NOT found buried with the remains of the man known as the ‘Amesbury Archer’?

A. wrist guards
B. arrowheads
C. gold hair fasteners
D. a stone toolkit

6. Why do Stonehenge’s many visitors pose a threat to the site?

A. Many people steal stones as souvenirs.
B. Archeologists cannot study the site when tourists are around.
C. Crowded highways nearby cause pollution and underground motion.
D. Tourists get too close to the ancient stones.

7. According to the article, which is the most likely reason work on Stonehenge ceased?

A. The Romans conquered England.
B. Beliefs changed and stones were were no longer sacred.
C. The supply of sarsens and bluestones was used up.
D. Ceremonies were moved to the Avebury Circle.

8. This article is most likely written to _____ .

A. teach young people about the facts and mysteries of Stonehenge
B. inform scientists of the archeological finds at stonehenge
C. persuade tourists to visit Stonehenge
D. convince archeologists to further study Stonehenge

2. Find the correct headings of the paragraphs.

1. An Important ‘Heel’
2. False Facts
3. Trains and Tunnels
4. Everyone has a theory about these mysterious, giant standing stones, but is anyone right?
5. Bone Finds
6. Mega... What??

3. Choose the right word. Read the statements after the text and find out if they are true or false.

circular	dated to	downland	earthworks	site
erected	location	monument	the most famous	stones

Stonehenge is a Neolithic and Bronze Age megalithic (1) _____ located near Amesbury in the English county of Wiltshire, about 8 miles (13 km) north of Salisbury. Its geographical (2) _____ is 51°10’43.87’N, 1°49’35.07’W.

It is composed of (3) _____ surrounding a circular setting of large standing (4) _____ and is one of (5) _____ prehistoric sites in the world.

Archaeologists think that the standing stones were (6) _____ between 2500 BC and 2000 BC although the surrounding (7) _____ earth bank and ditch, which constitute the earliest phase of the monument, have been (8) _____ about 3100 BC.

The (9) _____ and its surroundings were added to the UNESCO’s list of World Heritage Sites in 1986 in a co-listing with Avebury henge monument, and it is also a legally protected Scheduled Ancient Monument. Stonehenge itself is owned and managed by English Heritage whilst the surrounding (10) _____ is owned by the National Trust.

1. Stonehenge lies near Amesbury. ( )
2. It is about 8 miles north of Wiltshire. ( )
3. Archaeologists think that the stones were erected 4000 years ago. ( )
4. One part of the monument was built around 3100 BC. ( )
5. In 1986 Stonehenge was declared a World Heritage Site. ( )

TEXT 2. Big Ben

Big Ben is the nickname of the Great Bell of Westminster, the hour bell of the Great Clock, hanging in the Clock Tower of the Palace of Westminster, the home of the Houses of Parliament in the United Kingdom.

One theory holds that the bell was named ‘Big Ben’ after Sir Benjamin Hall, the Chief Commissioner of Works. Another theory suggests that at the time anything which was heaviest of its kind was called ‘Big Ben’ after the then-famous prizefighter Benjamin Caunt, making it a natural name for the bell.

Big Ben is commonly taken to be the name of the clock tower itself, but this is incorrect – the tower is simply known as The Clock Tower. Sometimes, the tower is referred to as St. Stephen’s Tower, but this title is not used by staff of the Palace of Westminster.

The bell weighs 13.8 tonnes, with a striking hammer weighing 203.2kg, and was originally tuned to E. There is delay of 5 seconds between strikes. It is a common misconception that Big Ben is the heaviest bell in Britain. In fact, it is only the third heaviest, the second heaviest being Great George found at Liverpool Cathedral (14 tons), and the heaviest being Great Paul found at St Paul’s Cathedral (16 tons).

The original tower designs demanded a 14 ton bell to be struck with a 6cwt hammer. A bell was produced by John Warner and Sons in 1856, weighing 16 tons. However, this cracked under test in the Palace Yard. The contract for the bell was then given to the Whitechapel Bell Foundry, who in 1858 re-cast the bell into the 13 ton bell used today. It too started to crack under the 6cwt hammer, and a legal battle

arose. After two years of having the Great Bell out of commission, the 6cwt hammer was replaced with a lighter 4cwt hammer, and the bell itself was turned 90 degrees so the crack would not develop any further, coming back into use in 1862. However, the crack, now filled, and the turn meant that it no longer struck a true E.

The belfry also houses four quarter bells which play the Westminster Chimes, derived from Handel's Messiah, on the quarter hours. The C note in the chime is repeated twice in quick succession, faster than the chiming train can draw back the hammers, so the C bell uses two separate hammers.

The clock is famous for its reliability. This is due to its designer, the lawyer and amateur horologist Edmund Beckett Denison, later Lord Grimthorpe. As the clock mechanism, created to Denison's specification by clockmaker Edward John Dent, was completed before the tower itself was finished, Denison had time to experiment with the clock. Instead of using the deadbeat escapement and remontoire as originally designed, Denison invented the double three legged gravity escapement. This escapement provides the best separation between pendulum and clock mechanism. Together with an enclosed, wind-proof box sunk beneath the clockroom, the Great Clock's pendulum is well isolated from external factors like snow, ice and pigeons on the clock hands, and keeps remarkably accurate time.

The clock had its first and only major breakdown in 1975. The famous quarter bells broke in late April 2004, and were reactivated again on May 9. During this time BBC Radio Four had to make do with the pips.

The idiom of *putting a penny on*, with the meaning of slowing down, sprung from the method of fine-tuning the clock's pendulum by adding or subtracting penny-coins. Even to this day, only old pennies, phased out of British currency during the 1971 Decimalization, are used.

A 20-foot metal replica of the clock tower known as Little Ben, complete with working clock, stands on a traffic island close to Victoria Station. Several turret clocks around the world are inspired by the look of the Great Clock, including the clock tower of the Gare de Lyon in Paris and the Peace Tower of the Parliament of Canada in Ottawa.

Big Ben is a focus of New Year celebrations in the UK, with radio and TV stations tuning to its chimes to welcome the 'official' start of the year. Similarly, on Remembrance Day, the chimes of Big Ben are broadcast to mark the 11th hour of the 11th day of the 11th month and the start of two minutes silence.

For many years ITN's 'News at Ten' began with an opening sequence which featured Big Ben with the chimes punctuating the anouncement of the news headlines. This has since been dropped, but all ITV1 and ITV News Channel bulletins still use a graphic based on the Westminster clock face. Big Ben can also be heard striking the hour before some news bulletins on BBC Radio 4 and the BBC World Service, a practice that began on December 31, 1923.

The clock features in John Buchan's spy novel The Thirty-Nine Steps and makes for a memorable climax in Don Sharp's 1978 film version, although not in Alfred Hitchcock's 1935 original adaptation. A similar scene is recreated in the 2003 film, Shanghai Knights which culminates with Jackie Chan hanging from the hands of the clock. The clock also appears in the animated cartoon Basil, the Great Mouse

Detective.

An earlier film climax on the clock face of Big Ben appears in Will Hay's 1943 film My Learned Friend, although the scene is more slapstick than thriller.

1. Read the statements and find out if they are true (T) or false (F).

1. The Palace of Westminster is where the Houses of Parliament reside. ( )
2. Great George, the bell at Liverpool Cathedral is heavier than Big Ben. ( )
3. Little Ben looks exactly like Big Ben. ( )
4. The clock was never used for any film. ( )

2. Choose the correct answer.

1. How many quarter bells are there in the belfry?

A. Three. **B.** Four. **C.** Five.

2. When did the clock break down?

A. 1975. **B.** 1971. **C.** 1923.

3. BBC Radio started broadcasting the chimes on news bulletins in _____ .

A. 1923 **B.** 1935 **C.** 1978

3. There are 4passages in this part. Each passage is followed by questions or unfinished statements. For each of them there are four choices marked A), B), C) and D). You should decide on the best choice.

Every evening, some part of the British Commonwealth hears the chimes of Big Ben, largest of the bells in the clock tower of the Palace of Westminster. The tower is popularly called Big Ben, but it is this bell which chimes out the quarter hours to the people of London. For Britons at sea or living in distant lands, the sound of Big Ben is still a link with home, for the chimes are broadcast each evening by the British Broadcasting Corporation.

Big Ben has been chiming out the quarter hours now for just a century. It started chiming on June 11,1859.

At that time, Parliament couldn't decide what to name the bell. A light-hearted member of Parliament called attention, in a speech, to the impressive bulk of Sir Benjamin Hall, Queen Victoria's Chief Lord of the Woods and forests.

'Call it Big Ben', said the speaker, and the name stuck.

Big Ben is 9 feet in diameter, 7 feet 6 inches tall, and the thickness where the hammer strikes is 8.75 inches.

The clock that regulates the chiming of Big Ben keeps good time. In 1939, the Royal Astronomer made a 290-day check on the performance of the clock. He found that during this test the margin of error was less than two-tenth of a second in 24 hours on 93 days and greater than one second only on 16 of the 290 days.

There was an unexpected lapse on August 12, 1945, and consternation swept through the Ministry of works. On that dark day, the clock was five minutes slow. A flock starlings had roosted on the minute hand.

1. A side from popular usage, Big Ben is really the _____.

A. clock tower of the Palace of Westminster
B. great bell in the clock tower of the Palace of Westminster
C. exclusive radio signal of the BBC
D. both A and B

2. The year 1959 was the _____ .
A. 59 anniversary of Big Ben
B. last year Big Ben was heard
C. 100 anniversary of Big Ben
D. year in which Big Ben was restored

3. The thickness where the hammer strikes Big Ben is _____ .
A. 8.75 inches
B. 7 inches
C. 76 inches
D. 9 inches

4. In the Royal Astronomer's 290-day check, the clock's margin of error was _____.
A. less than one-tenth of a second every day
B. greater than one second on 16 days
C. 16 seconds a day
D. 5 minutes a week

5. On August 12, 1945, Big Ben's clock was _____ .
A. bombed
B. 5 minutes slow
C. Being checked for accuracy
D. 5 minutes fast

4. Choose the right word. Use your research skills to answer the questions after the text.

bell	clockfaces	commissioner	constructed
hammer	hour hand	landmarks	mechanism
tower	minute handthe	largest	weighing

The Clock Tower of the Palace of Westminster, known as the Big Ben, is one of London's most famous (1) _____ . The Clock Tower of the Palace of Westminster is commonly referred to as the 'Big Ben', but in fact the name Big Ben refers to the clock's hour (2) _____, the largest of the clock's five bells, the others being used as quarter bells.

There were two bells cast as the clock tower's hour bell. A first, 16 ton (3) _____ bell was cast by John Warner and Sons in 1856. Since the Clock Tower was not yet completed, the bell was hung temporarily in the Palace Yard. The bell soon cracked so it was recast in 1858 in the Whitechapel Bell Foundry as a 13.5 ton bell. Unfortunately soon after this bell was placed in the belfry in July 1859, it cracked yet again. This time, instead of recasting the bell, the crack was repaired and a lighter (4) _____ was used.

The hour bell was probably named after Benjamin Hall, the first (5) _____ of works. Some sources however claim the bell was named after Benjamin Caunt, a British heavyweight boxing champion.

The clock was the largest in the world and still (6) _____ in Great Britain. The (7) _____ have a diameter of almost 7.5m. The (8) _____ is 2.7m long and the (9) _____ is 4.25m long. The clock is known for its reliability, it has rarely failed during its long life span. Even after the nearby House of Commons was destroyed by bombing during World War II, the clock kept on chiming. The clock's (10) _____, designed by Edmund Beckett Denison, has a remarkable accuracy. The clock's rate is adjusted by simply adding small pennies on the shoulder of the pendulum.

The tower was (11) _____ between 1843 and 1858 as the clock tower of the Palace of Westminster, now better known as the Houses of Parliament. The clock (12) _____ is 96m high and consists of a 200ft high brick shaft topped by a cast iron framed spire. The clockfaces are 180ft / 55m above ground level.

1. Where is Big Ben located?
2. What is Big Ben?
3. What is the size of Big Ben?
4. Who may visit the clock tower?
5. Which political institution shares a building with Big Ben?
6. Who designed the clock tower, and when?
7. What is an interesting fact about this landmark?
8. Would you like to visit this landmark? Why or why not?

TEXT 3. The Eiffel Tower
PART 1

The Eiffel Tower in Paris is one of the most popular places in the world. Every year, more than two million tourists visit this iron tower. It was built in 1889 by a French engineer, Gustave Eiffel. It is 300m high, which is nearly 108 stories, and weighs up to 7000 tons. It was considered the tallest structure in the world until the Empire State Building was built in New York 40 years later.

The Eiffel tower was one of the first structures in the world to have passenger elevators. The steel elevator allowed visitors to see the beautiful gardens and buildings around the tower. This attracted even more tourists and the entire cost of the tower was recovered in just one year.

1. Choose the correct answer.

1. From the passage, find a word which has the same meaning as:
   A. well-known (paragraph '1')
   B. a building (paragraph'1')
   C. something that carries people from one floor to another (paragraph'2')
   D. complete (paragraph '2')

2. Answer the following questions.

1. Is the Eiffel Tower taller than the Empire State building?
2. How many stories does the Eiffel Tower nearly have?
3. What is the benefit of the steel elevator in the Eiffel Tower?

PART 2

The Eiffel Tower is a global monument. It is the tallest building in Paris, France, and it was the tallest building in the world until 1930. It is one of the most well-known buildings in the world, and it is the most visited paid monument.

The Eiffel Tower was built for the 1889 World's Fair in Paris. This fair was going to celebrate the *centennial*, or 100th anniversary, of the French Revolution. The Eiffel Tower served as the entrance to the fair. It is named after its designer, Gustave Eiffel.

It took three hundred workers and two years to build the Eiffel Tower. They used over eighteen thousand pieces of iron, and two and a half million rivets. The Eiffel Tower weighs over seven thousand tons. It is three hundred meters tall (324 meters including the spire), which would be about 80 levels in a regular building.

The Eiffel Tower is split into three levels. The first level can be reached by stairs (328 steps) or an elevator. The second level can also be reached by stairs (340 steps) or elevator. The third level can be reached only by elevator.

When the Eiffel Tower was built, there was a lot of controversy. Many people did not like the design. Some people thought it was too tall to be sturdy. In fact, the designers were used to working with bridges and knew how to make their structure stable. Some people protested it because they thought it was very ugly. Now it is generally considered to be one of the most elegant structures in the world.

The Eiffel Tower was built as a temporary structure that was only meant to stand for twenty years. However, after it had been standing for twenty years, it was still in good shape. It was also performing a function – as a radio antenna. Instead of tearing down the 'temporary' building, the City of Paris decided to keep it. Over a century after its construction, the Eiffel Tower still stands, and serves as a landmark and symbol of France.

Answer the questions about the Eiffel Tower.

1. Where is the Eiffel Tower located?
   A. New York
   B. Paris
   C. Barcelona
   D. Eiffel City

2. Why was the Eiffel Tower built?
   A. It was meant to be a symbol of France.
   B. It was part of the World's Fair in France.
   C. It created controversy.
   D. It was a temporary structure.

3. How did the Eiffel Tower get its name?
   A. It is named after the designer.
   B. Eiffel is the French word for Structure.
   C. 'Eiffel' is French slang for 'awful'.
   D. none of the above.

4. How many levels does the Eiffel Tower have?
   A. eighty
   B. two
   C. three
   D. The article doesn't say.

5. What material is the Eiffel Tower made of?

A. granite
B. iron
C. a combination of a and b
D. none of the above

6. How old is the Eiffel Tower?

A. It is now two hundred years old.
B. The French Revolution was in 1879.
C. It is over one hundred years old.
D. It is just over twenty years old.

PART 3

If you'd lived in Paris between 1889 and 1930, you would have enjoyed the sight of the world's tallest building. La Tour Eiffel was named after its head contractor, Gustave Eiffel, and was built to commemorate the centennial of the French Revolution. It remained the world's tallest structure until it was surpassed by New York City's 319-meter-high Chrysler Building in 1931.

Today's towers built close to the Eiffel's height are most often used for communication. Television, radio, and cell phone companies depend on such towers to transmit their signals. But the Eiffel Tower was built before radio communication was necessary, and even before the radio was invented.

As one of the world's most famous monuments, the tower has attracted a lot of attention, but not all Parisians welcomed its construction. The French writer Guy De Maupassant supposedly hated the structure, but ate at its restaurant every day. When asked why, he remarked that it was the only place in the city from which he couldn't see the tower. During the years between 1925 and 1930, the tower acted as the world's largest sign, advertising cars for the French company, Citroen. When the German army invaded Paris in 1940, the lift cables were cut as Hitler's men stormed the city. However, German soldiers still climbed all the way to the tower's flagpole in order to fly the swastika.

Modern structures make the Eiffel Tower look small in comparison. Today's architects design populated buildings that surpass 500 meters – nearly double the height of the Eiffel Tower. Even so, the romance continues, and the tower welcomes over 6 million visitors per year. To keep the 118-year-old structure looking fresh, 60 tons of paint are reapplied every 8 years! Through it all, the grand old tower lives on.

Choose the correct answer.

1. The Eiffel Tower was constructed to _____ .

A. honor its head contractor, Gustave Eiffel
B. celebrate the 100th anniversary of the French Revolution
C. be the tallest structure in the world
D. compete with New York City's Chrysler Building

2. The tower was not built to be a radio tower because _____ .

A. it wasn't high enough
B. radios were illegal in France
C. it was built before the time of radios
D. radio waves cannot be broadcast from over 300 meters

3. Why were German soldiers forced to climb to the tower's top?

A. A sudden storm damaged the electrical systems.

B. They wanted to send radio signals from that height.

C. Parisians cut the elevator cables.

D. Parisians were attacking them

TEXT 4. The Derzprom

There are buildings that create the impression about the whole city. The House of State Industry (the Derzprom) became the face of the Soviet Kharkiv. It was the first high-altitude ferroconcrete building in the country. The building was erected in 1925 – 1928, being an embodiment of the first steps of Soviet building engineering. It marked the beginning of formation of the new architectonic shape of city.

Having become the capital of the Ukrainian Soviet Socialistic Republic since 1918 till 1934 Kharkiv became its coordination centre, the leadership residence. It was then when it became necessary to organize the new public center of Kharkiv: large areas for accommodation of technology personnel, design organizations; design bureau were necessary.

The decision to construct the building and to finance it from the Soviet budget was made by Felix Dzherzhynsky. The cost of the buildings construction was 9 million rubles. In 1924 it was decided to start construction of an administrative building. The place for the new public centre was chosen in the Highland part of Kharkiv, in one of its outskirts on the former University's lands. The further development of city was planned in this very direction.

Under the project of an architect V. Trotsenko, the ground for layout of the centre was a round square, on which contour the office buildings and radial streets of living houses blocks, departing from it were placed.

In May 1925, all-Union competition for the best project of the building of the House of State Industry was announced. In the Derzprom it was supposed to place boards, trusts, banks, central technical library with reading hall and book keeping facilities, two conference halls, restaurant, hotel of 50 rooms, automatic telephone station, post office and telegraph, in the cellars – subsidiary premises, various workshops, boiler-room, ventilation installation, coal warehouse.

The project of Leningrad architects S. Serafimov, M. Delferg, and S. Kravets, carried out in the forms of constructivism, was unanimously recognized to be the best. The architects presented the project of a large structure, which included 9 cases of different heights (from 6 to 13 floors), located radialiy and grouped in three blocks, each having its own center. In the art solution of the fronts and interiors of the Derzprom moulding; painting, sculpture is absent.

The project of Leningrad architects was accepted to construction.

In autumn of 1925, on the site, allocated for the giant house, preparatory works started. The erection of an outstanding structure was headed by a famous engineer and builder P. Rottert.

The first turn of the building was put into operation in 1927. The construction of the Derzprom was completed in 1928.

The House of State Industry became the first building erected on Dzerzhinsky Square (nowadays – Freedom Square). The height of the Derzhprom building is 63 m. With the television tower added in 1955 it was 108 m.

The office area of the Derzhprom building is 60 000 sq.m, the areas of the base is 10760 sq.m.

Initially the building was built by hand using primitive instruments such as shovels, wheelbarrows etc. By the time it was finished the construction techniques employed where mechanised 80%. 5000 workers were involved in its construction working in three shifts.

At the time of its completion it was the largest 'skyscraper' in the USSR and the second in Europe. 1315 carriages of cement, 9000 tonnes of metal, 2700 cars of granite and 40000 m² of glass were used.

The interior walls, windows, door handles etc were decorated with an exclusive relief of the letters DHP (ДГП) standing for Derzhprom.

By the recommendation of the Kharkiv department of Hygiene, all of the door handles were made of copper which was thought at that time to have antibacterial characteristics and would kill microbes.

7 of the 12 original elevators still function without being replaced since 1928.

The length of the bridges that unite the 3 sections of the buildings is 26 metres.

The reconstruction and renovation of the Derzhprom building took more time (7 years) than the construction of the building itself. (3 years)

Nowadays there are more than 300 institutions in the Derzprom, among them are the Region Council of the people's deputies, administration of the President of Ukraine, its departments, coordinating activity of national economy of Kharkiv region, design organizations, trusts, television studio, etc.

1. Find out if the following statements are true (T) or false (F).

1. Since 1918 till 1934 Kharkiv was the capital of the Ukrainian Soviet Socialistic Republic, its coordination centre, the leadership residence. ( )
2. The House of State Industry is a large area for accommodation of technology personnel, design organirations, and design bureau. ( )
3. It was decided to start construction of an administrafiue building in the bedinng of the 20th century. ( )
4. The place for the Derzprom was chosen near the river Lopan and the buildings of the Kharkiv University. ( )
5. The Derzprom was built in the form of Constructionism. ( )
6. The House of State Industry was being built during one year. ( )
7. Leningrad architects presented the project of a large structure, which included 7 cases of different heights, grouped in three blocks. ( )
8. It was supposed reading hall and book keeping facilities, institutes and Kharkiv State Univer sity, cafes, restaurant, hotel of 50 rooms, post office, telegraph and so on. ( )
9. The construction of the Derzprom began in autumn of 1925. ( )
10. The Derzprom is the face of the Soviet Kharkiv nowadays. ( )

2. Choose the correct answer A, B or C to make up sentences below.

1. The Derzprom became the first high-altitude _____ building in the country.
   A. concrete **B.** ferroconcrete **C.** block

2. At that time Kharkiv needed the building that _____ the impression about the whole city.
   A. composed **B.** made **C.** create

3. The project of the Hause of State Industry was made by _____ .
   A. architect V. Trotsenko
   B. architects S. Serafimov, M Delferg, and S. Kravets
   C. engineer and builder P. Rottert

4. 9 cases of different heights were located _____ and grouped in three blocks.
   A. seperatly **B.** radialy **C.** back-to-back

5. In Soviet Kharkiv the House of State Industry became the first building elected on _____ .
   A. The Square of Independence
   B. Dzerzhinsky Square
   C. Freedom Square

6. The first _____ of the building was made and put into operation in 1927.
   A. turn **B.** part **C.** block

7. There is no _____, _____ , _____ in the art solution of the fronts and interiors of the building.
   A. door, window
   B. moulding, painting, sculpture
   C. different institutions

8. _____ headed the erection of an outstanding structure.
   A. The famous engineer and builder P. Rottert
   B. The architect V. Trotchenko
   C. Leningrad architects

9. Kharkiv needed in _____ because of it became the capital of the Soviet Ukraine.
   A. coordination centre
   B. the leadership residence
   C. the new public center

3. Choose the correct answer A, B or C.

1. What did the Derzprom mark?
   A. The beginning of new of life.

B. The beginning of an administrative building.
C. The beginning of formation of the new architectonic shape of city.

2. Where was the place for the new building chosen?
A. In the Higland part.
B. In the old Kharkiv University.
C. Near the Shevchenkov's park.

3. What project was made by architect V. Trotchenko?
A. The project of the round square.
B. The project of the new public center.
C. The project of the building of Kharkiv University.

4. When did the works begin?
A. In May 1925. **B.** In autumn of 1925. **C.** In 1928.

5. What is the name of the square nowadays where the Derzprom is?
A. The Independence Square.
B. Freedom Square.
C. Dzerzhinsky Square.

4. Answer the questions below.

1. Why did Kharkiv need in the new public center?
2. Who was the initiator of a project of the square and the adjacent new residential area?
3. What was connected with the construction of an administrative building?
4. What is in the Derzprom nowadays?
5. When was the Derzprom built at all?

5. According to the text write down the correct ending of the following sentences.

1. The title of the article is _____ .
2. The author of it is _____ .
3. The article is about _____ .
4. It deals with the problem of _____ .
5. The aim of the article is to show _____ .
6. The author start by telling the readers that _____ .
7. At the very beginning of the author tells about _____ .
8. The second part develop to _____ .
9. Further on the author informs us that _____ .
10. In conclusion _____ .

TEXT 5. Best of Megastructures

In the last 100 years, 11 different skyscrapers have held the title of world's tallest building. With improvements in technology and materials, humans are pushing the

limits of what buildings can do. The National Geographic Channel reports on designers pushing the limits in Best of Megastructures.

Dubai is developing a reputation for being the home of the most extreme buildings on the planet. Measuring more than 320 meters high, Dubai's Burj Al Arab is the tallest hotel in the world. As if being taller than the Eiffel Tower wasn't enough, it also stands on a massive man-made island 270 meters off the coast. Inspired by the shape of a traditional sail, the Burj Al Arab has faced, and withstood, numerous challenges to become Dubai's Dream Palace.

Down the beach from the Burj Al Arab and four kilometers into the Persian Gulf, another mammoth construction project is underway. This one won't break any records for height, but The World will become the largest man-made group of islands ever created. Requiring more than 320 million cubic meters of sand, The World will recreate a map of the globe in the form of 300 islands. After it's completed, 250,000 people are expected to become residents of the World Island Wonder.

Of course, the best plans require the best materials. A variety of buildings, from the Roman Pantheon to the Panama Canal, have stood the test of time because of concrete. Over 9,000 years after inventing bricks, we're still using them by the billions. And speaking of the world's most amazing buildings, it's impossible to ignore steel. The past and future of these amazing building materials are revealed in Megastructures: Concrete, Megastructures: Brick, and Megastructures: Steel.

With the breathtaking structures that are being planned, the sky is literally the limit. Take a look at what architects are achieving and how they're doing it in Best of Megastructures.

1. Choose the best answer.

1. Dubai's Burj Al Arab is notable for being the world's _____ .

A. biggest motel
B. longest island
C. tallest hotel
D. largest building

2. What will most likely be true about The World after it is completed?

A. It will be made up of 320 million islands.
B. It will be the world's largest artificial island.
C. It will require exactly 320 million cubic meters of sand.
D. It will be home to 250,000 residents.

3. What is similar about the Roman Pantheon and the Panama Canal?

A. They were constructed with concrete.
B. They are both ancient buildings.
C. They include a mix of steel, bricks, and concrete.
D. They used to be the world's tallest buildings.

4. In the fourth paragraph, the author is trying to _____ .

A. explain which building material is the best
B. list all of the building materials that have ever been used
C. give examples of some interesting building materials
D. show the history of materials that have replaced each other

5. Match

1.	mammoth	**A.**	it is still popular, strong, etc. after a long time
2.	stand the test of time	**B.**	there is no limit
3.	the sky is the limit	**C.**	extremely large

2. Vocabulary Exercises

1. Read the text and do tasks after it.

The Leaning Tower of Pisa

The Leaning Tower of Pisa, in Pisa, Italy, is famous because it looks like it might fall over. This circular bell tower stands next to Pisa's cathedral. It is 187 feet high and has 8 floors. Over 293 steps lead to 7 bells at the top. The outside is decorated with arches and columns.

Construction began in 1173. After the first three floors were finished in 1178, the tower leaned to the north. Construction then stopped until 1275 because Pisa was at war. The next three floors were built even with the ground, instead of the bottom floors, to try to correct the lean. When they were finished about 1319, the tower leaned to the south. The last two floors were added about 1350.

During the long building delays, the tower's weight compressed the ground under it. This strengthened its base enough to keep it from falling, but it still leaned a bit more each year. The tower leans because it is too heavy for the ground it is built on. The uneven layers of soft sand and clay beneath it have caused the tower to sink more in certain places.

Over the years, the tower became a symbol of Italy and an important tourist attraction. Several attempts were made to straighten the tower, but some just made it worse. By 1990, the top floor leaned 17 feet to the south.

In 1990, the government closed the tower to the public and began a 10-year effort to stabilize it.

International experts tried different solutions but nothing worked. Then, in 1999, a British engineering professor suggested that soil be removed slowly from the high side so that the tower could settle back into the ground. This worked and, by 2001, the tower was 16 inches straighter. Experts believe it is now safe for another 300 years.

The tower re-opened to the public in June 2001.

A. Choose the word(s) with the closest meaning to the underlined words in the following sentences.

1. The outside of the tower is <u>decorated</u> with arches and columns.
   A. painted **B.** made beautiful **C.** built

2. Construction began in 1173, but there were many <u>delays</u> and the tower wasn't finished until 1350.
   A. wars **B.** storms **C.** situations in which something is slow or late

3. The circular bell tower stands next to Pisa's cathedral.
A. circus **B.** large **C.** round

4. The government began a ten year effort to stabilize the tower.
A. remove **B.**rebuild **C.** make firm; stop movement

5. International experts tried different solutions but nothing worked.
A. builders **B.** examiners **C.** people with special skills

B. Match the words on the left with the correct meaning on the right.

1.	lean	**A.**	answer to a problem
2.	cathedral	**B.**	lowest part of something
3.	step	**C.**	go down below the surface
4.	arch	**D.**	type of church; building for prayer
5.	compress	**E.**	try
6.	base	**F.**	come to rest; stop moving
7.	clay	**G.**	a kind of sticky earth or mud
8.	sink	**H.**	stair
9.	solution	**I.**	earth
10.	attempt	**J.**	curved structure
11.	soil	**K.**	be in a sloping position, not straight up
12.	settle	**L.**	push or press into a smaller space

C. Read the statements below. If the statement is true, write T beside the sentence. If it is false, write F. If it is false, correct the information.

1. The Leaning Tower of Pisa is 293 feet high ( )
2. The Leaning Tower has 17 stories ( )
3. It took over 100 years to complete the building of the tower ( )
4. The ground beneath the tower is very hard and solid ( )
5. Several attempts to straighten the tower failed ( )
6. The tower is closed to the public because it is not safe ( )

D. Answer the following questions.

1. Why is the Leaning Tower of Pisa so famous?
2. Why was the tower built in several different stages?
3. Why does the tower lean?
4. What did the Italian government do in 1990?
5. Who proposed the successful solution to stabilize the tower?
6. What was his suggestion and what was the result?

2. Study the words below. Then do the exercises for the reading the text 'London Eye'.

aboard	career	girder	rotate	strand
blast	cautious	invent	story	tower

A. Match the words with the corresponding definition.

1.	**aboard**	**A.**	is a strong wind or movement of air. is a loud noise.
2.	**a blast**	**B.**	is the kind of work a person does for many years.
3.	**to blast** smth	**C.**	is a large, strong piece of metal or wood. It is used to support bridges or parts of buildings.
4.	**to blast** off	**D.**	is a person who thinks up or makes something for the first time.
5.	a **career**	**E.**	is to make it for the first time.
6.	**to** be **cautious**	**F.**	is a report of something that happened. is a tale that is made up. Often it may be written down for people to read.
7.	a **girder**	**G.**	is one of the threads that are twisted together to make string, yarn, or rope. It is also a single hair.
8.	an **inventor**	**H.**	is to leave in a difficult or helpless position.
9.	to **rotate**	**I.**	is the space or rooms that make up one level of a building.
10.	to **invent** smth	**J.**	is to turn in a circle around a center. is to take turns in a certain order.
11.	**a story**	**K.**	is to be careful in order to avoid mistakes, trouble, or danger.
12.	**a story**	**L.**	is to go up in the air or into space.
13.	a **strand**	**M.**	something is to blow it up.
14.	to **strand**	**N.**	means in or on a ship, train, or airplane.
15.	a **tower**	**O.**	is to rise high in the air.
16.	to **tower**	**P.**	is a building or a part of a building that is taller than it is wide.

B. Look at the group of words on the left. Then circle the letter of the word on the right that has the same meaning.

1.	a loud noise	**A.**	strand	**B.**	blast	**C.**	girder	**D.**	inventor
2.	a metal support	**A.**	girder	**B.**	story	**C.**	tower	**D.**	strand
3.	to make for the first time	**A.**	tower	**B.**	rotate	**C.**	blast	**D.**	invent
4.	work for years	**A.**	strand	**B.**	career	**C.**	story	**D.**	tower
5.	one level of a building	**A.**	inventor	**B.**	strand	**C.**	story	**D.**	tower

C. Now look at the word on the left. Then circle the letter of the group of words on the right that has the same meaning.

1.	aboard	**A.**	in a helpless state	**C.**	going in a circle
		B.	left behind	**D.**	on a ship
2.	cautious	**A.**	avoiding mistakes	**C.**	taking risks
		B.	getting hurt	**D.**	speaking loudly
3.	rotate	**A.**	stay in one place	**C.**	fall quickly
		B.	jump into the air	**D.**	go in a circle
4.	tower	**A.**	a twisted thread	**C.**	a news report
		B.	a tall building	**D.**	a strong wind
5.	strand	**A.**	move quickly	**C.**	leave in a helpless position

B. blow up **D.** send to the wrong place

D. Look at each group of words below. Three of the words are alike or related in some way. One word does not belong in the group. Find the word that does not fit and circle it.

1.	girder	road	path	track
2.	circle	rotate	turn	wave
3.	chimney	roof	boat	tower
4.	cautious	careful	watchful	foolish
5.	tie	strand	fasten	knot

E. Circle the letter of the correct answer to each question below. Circle one letter only.

1. Which of the following can be a <u>career</u>?
   A. relaxing **B.** dreaming **C.** sleeping **D.** teaching

2. Which of the following was not <u>invented</u>?
   A. the ocean **B.** the telephone **C.** the can opener **D.** the light bulb

3. Which of the following can you go <u>aboard</u>?
   A. a cavern **B.** a sailboat **C.** a school **D.** a shoe

4. Where will you not find a <u>story</u>?
   A. in a library **B.** in a newspaper **C.** in an orange **D.** in a tall building

5. Which of the following can make a <u>blast</u>?
   A. a horn **B.** a pillow **C.** a feather **D.** a carrot

F. Find the BEST way to finish each sentence or to answer each question. Then fill in the circle next to your answer.

1. A castle's <u>tower</u> is _____ .
   A. a lake beside a castle **C.** part of a castle that is taller than it is wide
   B. a castle's kitchen **D.** part of a castle that is deep underground

2. To <u>rotate</u> a job is to _____ .
   A. stop doing it **C.** do it very slowly
   B. take turns doing it **D.** tell another person to do it

3. Which of these might need metal <u>girders</u> to hold it up?
   A. a bridge **C.** a wooden tabletop
   B. a bookcase **D.** a mountain

4. A newspaper <u>story</u> is a _____ .
   A. person who writes for a newspaper
   B. newspaper report telling about an event
   C. made-up tale printed in a newspaper
   D. person who sells newspapers

5. Workers blasted a hole in the side of the mountain. This means that they _____ .
A. dug a hole in the side of the mountain
B. drilled a hole in the side of the mountain
C. blew a hole in the side of the mountain
D. ruined a tunnel when they accidentally blew it up

6. Which word means the SAME as cautious?
A. kind **B.** careful **C.** helpful **D.** neat

7. A shipwreck stranded many people on an island. To strand is to _____ .
A. kill
B. rescue from a difficult situation
C. leave in a difficult position
D. make new homes

8. High on the mountain, an icy blast hit our tent. In this sentence, blast means ____ .
A. strong wind **B.** heavy snow **C.** heavy rain **D.** boulder

9. A Birthday for Frances is a talking animal story. In this sentence, story means ___ .
A. a newspaper report
B. a magazine article
C. a level of a building
D. a made-up tale

10. To invent something is to _____ .
A. make it for the first time
B. make it worse
C. tell a story about it
D. think it is amazing

11. 'All aboard!' yelled the train conductor. The conductor meant _____
A. 'Please get off the train!'
B. 'Please get out of the way!'
C. 'Please get on the train!'
D. 'The train is stopping!'

12. When you have a career you have _____ .
A. a car out of control
B. work for a number of years
C. time to relax
D. chores

13. A bicycle wheel rotates. This means that the wheel _____ .
A. turns in a circle around its center
B. moves along a straight line
C. has lost air from the tire
D. spins very quickly

14. The train's whistle gave a sharp blast. In this sentence, blast means _____ .
A. surprise **B.** song **C.** soft cry **D.** loud noise

15. Our apartment is on the third story. In this sentence, story means _____ .
A. a newspaper report
B. a level of a building
C. a made-up tale
D. a magazine article

16. Which of these has strands?
A. a fork **B.** soap **C.** an apple **D.** yarn

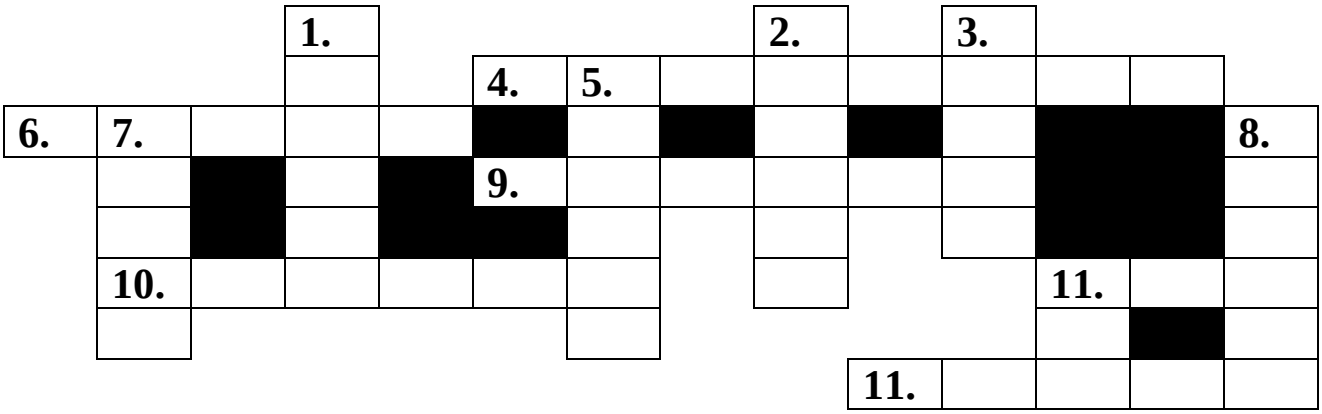
17. To tower over someone is to be _____ .
A. much taller than that person
C. a little shorter than that person

B. a little taller than that person **D.** about the same height as that person

18. The rocket blasted into space. This means that the rocket _____ .
A. fell to earth **C.** circled the earth
B. shot up into space **D.** crashed on a distant planet

19. Which of these describes an inventor?
A. a doctor who helps patients get well
B. a scientist who creates a new medicine
C. a patient who is suffering from a disease
D. a patient who gets well after taking medicine

G. Look at the thirteen sentences at the bottom of the page. Each one has a word missing. Write that word in the correct boxes of the puzzle. Look at the number of each sentence. Then find the same number on the puzzle. Put the first letter of the word in the box with the number. Write the letters going across if the sentence is in the ACROSS column. Write the letters going down if the sentence is in the DOWN column. All of the answers are from Lesson 9 except 11 ACROSS and 7 and 11 DOWN.



ACROSS

4. Be _____ when you cross this busy street.
6. The _____ tells how Mister Toad got lost in the woods.
9. The wheels on the bus _____ when it moves.
10. A _____ in nursing can be very rewarding.
11. You _____ with your eyes.
12. Three, two, one, _____ off.

DOWN

1. The _____ supports one end of the bridge.
2. Each _____ in this silk cord is a different color.
3. These giant redwoods _____ over the other trees.
5. We went _____ the ship at noon?
7. Mr.Grove wants to _____ second grade.
8. Jon wants to _____ a better mouse-trap.
11. Rivers empty into the _____ .

H. Put the following word in the sentences below.

aboard	career	girder	rotate	strand
blast	cautious	invent	story	tower

1. As of the year 2000, the London Eye was the tallest Ferris wheel in the world. It _____ over central London and can be seen for miles around.
2. The cars move so slowly that they hardly seem to be moving. The wheel takes thirty minutes to _____ once.
3. The very first Ferris wheel was a big hit at the 1893 Chicago World's Fair. Its _____ was a bridge builder names George Ferris.
4. Bridges and Ferris wheels have something in common. Both are made from steel _____ held together with a special kind of bolt called a rivet.
5. As a bridge builder Ferris was careful not to take chances with the public's safety. He was very _____ when he planned the world's first big wheel.
6. At first, the crowds at the Chicago World's Fair were nervous about getting on the wheel. They were afraid something might happen that could _____ them up in the air.
7. George Ferris decided to show them they had nothing to fear. With his wife and a reporter, he went _____ the big wheel while a strong wind was blowing.
8. As the three people on the wheel reached the highest point, the wind was blowing even harder. The reporter had a great _____ to tell in the next day's newspaper.
9. The wind at the top of the wheel was blowing that day at 110 miles per hour. The reporter wrote that the deafening _____ shook the windows but left the cars unharmed.
10. History remembers Ferris for just one thing. Although his whole _was _____ spent building bridges, it was the Ferris wheel that brought him lasting fame.

I. Read the passage below and then answer the questions that follow it.

Do you like to ride Ferris wheels? Let us explore the biggest one in the world. It is in London, England, and was built to mark the year 2000.

This giant wheel stands almost 450 feet high in the center of the city next to the Thames River. From a distance, it looks like a great bicycle wheel. The wheel **rotates** very slowly. It does not even seem to be moving. There are thirty-two cars. Each one can carry about two dozen people. The riders have plenty of time to enjoy the views of London. It takes fifteen minutes for each car to go from the ground up to the highest point. At the top, people can see things as far away as twenty-

five miles. Maybe that is why this huge wheel is named the London Eye.

After the wheel opened in January 2000, more than a million people visited it. Those going **aboard** were not afraid. People know that these giant wheels are very safe. But that was not the case when the first Ferris wheel was **invented** over a hundred years ago.

It was 1893, the year of the Chicago World's Fair. The people planning the fair wanted something special and surprising to draw a crowd. They chose the design of George Ferris, a man who had built many bridges in his **career.** His idea was very different. He planned to make a huge steel wheel that was supported by two tall **towers.** The power from two steam engines would turn the wheel. There would be thirty-six cars. Each could hold sixty people. The wheel would slowly carry people high in the air and return them to the ground. This looked like fun, but was it safe?

At first, people were **cautious.** The wheel was very high. Chicago already had buildings that were ten **stories** high. But George Ferris's wheel was going to be at least two times as high. In addition, Chicago often had very strong winds. Maybe the powerful winds would shake the wheel or twist it out of shape. Could the people in the cars be **stranded** if the engines stopped?

George Ferris believed his wheel was safe. He decided to prove this to everyone. Ferris, his wife, and a brave newspaper reporter chose a windy day to take a ride. With the wind blowing 110 miles per hour, the three riders stepped into one of the cars and were slowly carried up into the storm. Later, the reporter wrote that the **blast** from the wind made it impossible to hear. It screamed through the thin **girders** and shook the windows. But all three returned safely to the ground.

The first Ferris wheel became a very popular ride. Thousands of people rode it all through that summer. Before long, more wheels were built, and they kept getting bigger. In the year 2000, the London Eye was the tallest wheel in the world.

1. When did George Ferris **invent** his wheel?
2. Why did people not need to be **cautious** about riding the London Eye in 2000?
3. Why did people think they might be **stranded** on Ferris wheel?
4. How did George Ferris spend most of his **career?**
5. How did the **blast** of wind affect the ride of §rris, his wife, and the reporter?
6. Why is it correct to say that Ferris wheel **towered** over Chicago?
7. How many people went **aboard** the Ferris wheel during the Chicago Worlds Sir?
8. How long does it take for the London Eye to **rotate** once?
9. What do you think the **girders** of Ferris wheel were made of?
10. How many **stories** taller was Ferris wheel than the tallest buildings in Chicago in 1893?

J. Check the information in the text in detail. Be careful: Sometimes there is more than one possibility!

1. The London Eye is _____ .

A. an attraction for visitors from all over the world

B. the largest Ferris wheel in the world

2. Each capsule can take _____ .
A. more than 25 passengers **B.** a maximum of 25 passengers

3. Which of the following information is correct?
A. The ride takes 30 minutes.
B. The wheel stops when new passengers want to get on.
C. Inside each capsule passengers get detailed information about the sights.
D. The top of the Ferris wheel is about 140 meters above the ground.

The London Eye – an Eye-Opening Experience

The first passengers who went for a ride on London's giant Ferris wheel, the 'London Eye', had a fantastic view over London and the River Thames. They could see famous London landmarks like St. Paul's Cathedral, the Millennium Dome or Nelson's Column. The London Eye is the world's largest Ferris wheel and will be one of the largest and most impressive attractions for visitors from the UK and overseas for years to come.

There are 32 transparent passenger cabins, called capsules. They are heated in winter and cooled in summer and each capsule can take up to 25 passengers. One full 360 degree rotation takes thirty minutes. The wheel doesn't stop for riders to get on – passengers simply step into the passing capsules from a platform. At the top, passengers have a fantastic view of the world below from a height of about 140 m while they listen to a guide's commentary giving detailed information about the sights below.

The Eye was designed by the architects David Marks and Julia Barfield to celebrate the Millennium and built at a total cost of $56 million.

K. Do the following tasks. Find out if the statements are true (T) or false (F).

1. The London Eye became an important landmark soon after it was built. ( )
2. The London Eye is not easily seen in London. ( )
3. The London Eye was built as a celebration of the new millennium. ( )
4. The whole of London can be seen from the Wheel everyday. ( )
5. The project was partly sponsored by the British Airways. ( )

Tick the correct answer in questions (6) and (7).

6. The London Eye offers _____ .
A. birds a beautiful view **C.** a worthwhile experience
B. a short flight across the river Thames **D.** information about the English weather

7. The London Eye was a great achievement _____ .
A. when it was ready **C.** when it was being put into place
B. when it was being constructed **D.** from beginning to end

What do the following refer to?

8. Tens of thousands _____ .
9. Thirty-minute _____ .
10. Twenty-five _____ .

The London Eye

Within a short space of time the London Eye has become a familiar sight on the London landscape. Each year tens of thousands of residents and tourists take a short but memorable thirty-minute flight and experience, first hand, a bird's eye view of the capital city.

Originally named 'The Millennium Wheel' (because it was built to mark the new millennium), it is more commonly known today as 'The London Eye'. With views across London of up to 30 miles, passengers feel as though they can see the whole of the city at once. And sometimes, depending on the English weather, they can.

The London Eye is located right in the heart of London across the River Thames from the Houses of Parliament and Big Ben. The structure itself is an impressive sight: a giant white, bicycle-like wheel adorned with viewing capsules – each of which is large enough to carry twenty-five passengers at a time. The airline company, British Airways, sponsored the whole project. Erecting the wheel was a giant civil achievement, not only during its construction phase, but also while it was being lifted into place by massive cranes.

A ride on the London Eye is called a 'flight'. Flights are available through the day and well into the night. The best time to take a flight on the London Eye is at sunset or at night when passengers can view London lit up beneath them. The London Eye itself is also lit up at night and looks magnificent against the night sky.

The Eye takes approximately half an hour to complete just one revolution, so people have plenty of time to get used to the gentle movement of the giant Ferris wheel. Once on top the views are really worth it.

3. Vocabulary Development

A. Use the words given in capitals in brackets to form a word that fits in the space and read the text. Consult a dictionary if required.

British Telecom Tower, London
Built: 1961 – 1965
Architects: Eric Bedford & G. R. Yeats

(1) _____ (ORIGINALY) called the Post Office Tower, it was built as an (2) _____ (OPERATION) unit to carry 21st century telephone, television and data traffic. A memorial to 1960's optimism, this was the country's tallest building until eclipsed by the NatWest Tower in 1981and was famous for its (3) _____ (REVOLVE) restaurant at the top of the tower. It remains an (4) _____ (INNOVATE) design built (5) _____ (MAIN) of pre-stressed concrete and glass and has not been copied since. Lean, practical and futuristic, it epitomised the technical and (6) _____

(ARCHITECTURE) skills of the time.

The Lloyd's Building, London

Built: 1979 – 1984

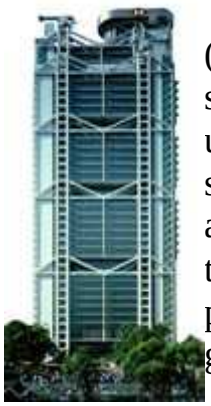
Architect: Richard Rogers

This (7) _____ (BUILD) challenged the (8) _____ (TRADITION) concept of the office block. Described as hi-tech it looks like (9) _____ (MACHINE) with hard shiny surfaces and (10) _____ (INDUSTRY) elements like gantries, walkways and (11) _____ (MOVE) parts. The structures and services, a (12) _____ (COMBINATE) of cranes, ladders, pipes and tubes, are displayed on the outside of the building rather than hidden in the inside.

Hongkong and Shangahai Banking Corporation Headquarters, Hong Kong

Built: 1981 – 1985

Architect: Foster Associates



This office building represents a technological (13) _____ (ACHIVE). It was constructed in a short time period and on a restricted site out of vertical slices to allow the bank to continue work uninterrupted and allow for (14) _____ (FLEX) planning of the space. The design integrates modern materials (steel, concrete, foil, aluminium, and glass), and structural engineering. Using the Chinese tradition of Feng-Shui, (15) _____ (ESCALATE) are positioned on a diagonal to create a dramatic entrance hall and dynamic geometry. Drawing on the plan of Greek temples, a giant (16) _____ (CENTRE) atrium makes use of (17) _____ (NATURE) sunlight and serves to develop a sense of (18) _____ (COMMUNE) amongst the workers.

One Canada Square, Canary Wharf, London

Built: 1991

Architect: Cesar Pelli

Number One, Canada Place, better known as the Canary Wharf tower, is one of the most (19) _____ (RECOGNISE) buildings in Britain, designed by Cesar Pelli and (20) _____ (COMPLETE) in 1991. The centre of a cluster of other towers, it stands as a symbol of the brave new world of the London Docklands. The tower at Canary Wharf is the tallest building in England and the United Kingdom at 244 metres above sea level, or 235.1 metres above ground level. It is the sixth tallest building in the (21) _____ (EUROPE) Union.

Clad in (22) _____ (STAIN) steel it is 50 stories high and dominates the London skyline by being visible up to 2 kilometer away. It is used as an office building. The tower has 3,960 windows and 4,388 steps. Lifts travel from the lobby to the 50th floor in just 40 seconds. The building is designed to sway 13 and three

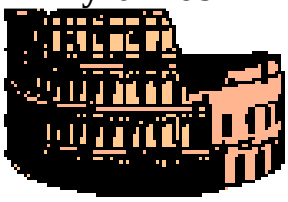
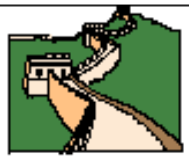
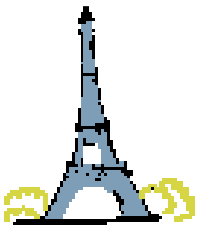
quarter inches in the strongest winds that might occur once every 100 years. The aircraft (23) _____ (WARN) light at the very top of the tower flashes 40 times a minute, 57,600 times a day. The building's design is (24) _____ (REMARKABLE) simple. This tower relies principally on sheer mass and height to impress. Inside and out all is sleek.

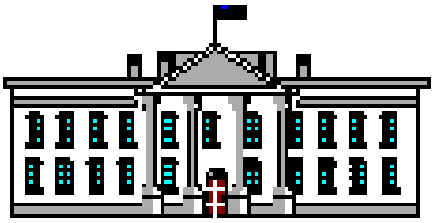
4. Speaking Practice

A. Build a quiz for your partner using these facts and question words below.

QUESTION WORDS:

1. How old...?	4. How high...?	7. Why...?	10. How wide...?
2. How far...?	5. How many...?	8. How long...?	11. What...?
3. Who...?	6. How much...?	9. Where...?	12. When...?

WONDERS	FACTS
Pyramids	***Country*:** Egypt ***Capital of Egypt:*** Cairo
 **Colosseum**	***Person behind:*** Emperor Titus ***Year:*** 80 A.D. ***Capacity:*** 50,000 spectators
 **Great Wall**	***Length:*** 1500 miles (2400 kilometers) ***Person Behind:*** Emperor Qin ***Started:*** 7th century B.C.
 **Eiffel Tower**	***Dates:*** Started 23 January 1887 to completed March 1889 ***Length of Time:*** (2years, 2months, 5days) ***Height (including television antenna)*:** 320.755 meters
Big Ben	***Number of faces:*** 4 faces ***Height*:** 96 meters (314 feet)



White House

Tokyo, Japan

Age: 200 years old (about)
Started: in 1792
Completed: in 1800
Number of rooms: 132 rooms, 35 bathrooms
Number of doors & Windows: There are also 412 doors, 147 windows, 28 fireplaces, 8 staircases, and 3 elevators
Capital of Japan: Tokyo
Population of Tokyo: 12 million people
Population of Japan: 127 million people

B. Make up a conversation about one of the old or modern famous building. Use the following questions.

1. Who built your structure?
2. Who thought of the idea? Where did the idea come from?
3. Who was it in honor / memory of?
4. Why was it built?
5. What year was it built? When was it destroyed? How long did it exist?
6. If your structure was still in existence, how old would it be today?
7. How long did it take to build?
8. How many people did it take to build this structure?
9. What was your structure made of? How was it made? Why was it made of those materials?
10. How was your structure destroyed? Why was your structure destroyed?
11. Where is your structure now?
12. Is there anything left of your structure?
13. What was inside your structure?
14. Where is your structure located?
15. Why is it located in ‘that’ spot?
16. What are the dimensions of your structure (height, length, width)?
17. How much did your structure weigh?
18. What does your structure look like (if you were standing in front of it)?
19. How much land does your structure cover?
20. Are there any myths / legends / stories about your structure?
21. Does your structure represent / symbolize something? Does it have a special meaning?
22. How did your structure get its name?
23. Did your structure have a practical use? What was it used for?
24. Does your structure have a religious purpose?
25. What color was it?

26. Is this a natural or human-made wonder?
27. What's where your structure used to be? What surrounds the area where your structure was/is?
28. Does your structure go by any other names?
29. Was your structured changed at all during its existence?
30. Could a person go inside your structure? If so, who was allowed inside the structure?
31. Who discovered your structure?
32. Did your structure resemble (look like) anything in the modern world?
33. Did your structure influence any modern-day ideas and/or structures?
34. How do you know that your structure actually existed?

C. Have you ever been on a short tour in Kharkiv? How did you go and what did you see?

Read the conversation between a tour guide and a tourist. Put the names of the following Kharkiv sights in the dialogue:

Derzhprom	Vasyl Karazin Kharkiv National University
Mirror Stream Fountain	The Uspensky Cathedral
Concert Hall Ukrayina	The Shevchenko Garden
Svobody (Freedom) Square	The Pokrovsky Cathedral

Tour Guide: Now we are in Universitetska Street. It is the ancient centre of the city. The oldest building of 17th and 18th century are here.

Tourist: What is the cathedral with gold-domed bell tower over there between two streets?

Tour Guide: It is _____ . It is situated at the central part of the University Hill. It is one of city's wonderful architectural monuments built in 1771 – 1777 in the style of Russian Baroque. To commemorate victory of Russian troops over Napoleon, architect Ye. Vasilyev designed a new bell tower built in 1821 – 1844. The gold-domed bell tower attracts attention with its simplicity, stateliness, and austere forms. This is the highest building in Kharkiv rising 89.5 meters tall. The bell tower has a chiming clock, whose melodious signal is heard hourly over the city. An organ has been installed in the cathedral and now it is also known as an organ music hall, hosting prominent Kharkiv and guest performers of chamber and organ music. Thanks to its good acoustics, the organ music hall is a popular concert venue for classical music performers and folklore groups.

Let's go to the one of Kharkiv square, Constitution Square.

Tourist: What is the cathedral opposite the tanks located close to the Constitution Square?

Tour Guide: It is _____ . It is the oldest city building and a valuable monument of the Ukrainian architecture of the second half of the 17th century. It was built in 1689. This is a typical Ukrainian three-domed church. Its exterior decorations have some elements of Russian

architecture testifying to links between the Russian and Ukrainian cultures. The cathedral was severely damaged in the years of the Second World war. The restoration of the cathedral began in early 1990s. Now it is an acting orthodox temple.

Now we are in Sumska Street. It is the main city street. Many famous places are there. We are near Kharkiv Opera and Ballet Theatre.

Opposite the Opera Theater and you can see the one of the symbols of Kharkiv _____. It is the most outstanding architectural construction in Kharkiv and is under protection of UNESCO. It was constructed in 1947 in honor of the victory of soviet people in the Great Patriotic war. Now it is surrounded by small picturesque public garden, there is a pavilion from under which a mirror stream is flowing. In front of the fountain there is a beautiful ground with a flower bed, and behind it you will find romantic pond of irregular shape.

Tourist: What is the large park in the main city street? I have never seen parks in the city centre.

Tour Guide: It is _____. It is the oldest green area in the city center. It was planted as far back as 1804. The gardens central path is a beautiful chestnut-tree alley leading from the Taras Shevchenko Monument to the University building. Its area of 25 hectares has over 15,000 trees and bushes of more than 100 varieties. It also has gigantic oaks, which are over 200 years old. One of these grows close to the monument to the great Kobzar. The gardens are being expanded and improved every year. After the war, their western slope was reconstructed with a water cascade and stairs leading down to the Klochkovska Street. A color and music fountain is located in the center of the gardens.

Tourist: Oh, I have read about this garden. It is said there is a Kharkiv Zoo in the Shevchenko Garden.

Tour Guide: Yes, you are right. And _____ also is at the far end of the Shevchenko Garden. There are 1,850 seats there and it is known for its excellent acoustics. The originally shaped building merges well with the gardens green environment. It was designed by architects V. Vasilyev, Yu. Plaksiyev, V. Reusov, and L. Fridhan, and engineer A. Biletsky. It was inaugurated in August 1963.

Let’s go along the garden to the the largest square in Ukraine and the third largest city-centre square in Europe.

It is _____. It is From 1926 till 1996 its name was Dzerzhinsky Square after Felix Dzerzhinsky. It was renamed after Ukraine became independent in 1991. A monumental statue of Lenin was erected in 1964 and continues to dominate the square. The main part of it is limited to the west by the statue of Lenin, to the east by Sumska street and the building of the Oblast Council of People’s Deputies erected in 1954 by architects V.Orekhov and V.Kostenko on site of the old one destroyed by Nazis during the war, to the north by the eight-story building of the Hotel Kharkiv and to the south by Shevchenko Garden. It is

approximately 690 – 750 meters long and 96 – 125 meters wide. The complete square is approximately 12ha. Its interesting landmark is the Derzhprom building, one of the prime examples of Constructivist architecture.

Tourist: What is the interesting building with antenna?

Tour Guide: It is _____ . It occupies the central part of Freedom square. It is one of city's unique architectural and historic sights. It was built in 1925 – 1928 to become the first high-rise building in the country. It consists of a group of blocks connected by passages running on different levels. The following figures signify the scope of the structure: total site area occupies 11,000 square meters and the facade length is 300 meters. The building was designed by architects S. Serafimov, S. Kravets, and M. Feldher. The construction work was headed by prominent civil engineer and academician of architecture, P. Rottert.

Tourist: What is to the left?

Tour Guide: You would like to ask about the building to the left of the Derzhprom?

Tourist: Yes. Is it the part of the Derzhprom? I think they are built in the same style.

Tour Guide: It is _____ , one of the oldest and largest higher education institutions founded in 1805. The University building has about 2,500 lecture rooms and laboratories. A monument to its founder V. Karazin is located nearby on the side of the Shevchenko Gardens. The monument was unveiled in 1906, designed by sculptor I. M. Andreoletti and architect A. I. Beketov.

5. Writing Skills

Make up a story of the famous building you like best of all using the plan below.

- Proper name of landmark
- Common name of landmark
- What is it?
- Who built the landmark?
- For whom was it built?
- Where did the ideas for this landmark originate?
- When was it built?
- What are the physical characteristics of this landmark?
- What is it made of? Why?
- How was it built?
- Is the landmark natural or human-made
- How do your landmarks reflect their natural surroundings?
- How has this landmark changed over time?
- What is special or important about it?
- Specific location of landmark:
- Significance of landmark (why was it built?)
- How is it used today?
- Interesting fact(s)

UNIT FOUR. TUNNELS AND CANALS

1. Reading Comprehension

TEXT 1. How to Buil the Tunnel

Since the dawn of civilization, people have been building tunnels for accessing tombs or underground quarries, or in the hill slopes for allowing the flow of water from porous rocks. Romans were skilled tunnel builders, who made several kilometers long underground passages using the work of slaves. They made a 5.6 km long tunnel for draining the Fucino Lake, east of Rome. The project, aimed for impeding the flooding of the area, required the work of 30,000 people for 10 years.

Modern construction of tunnels started in the 1760's in England, when channels were constructed for inner transport. If hills were in the way, the top could be overcome by modifying it in platforms and building of locks, so that ships reached the next level. This method depended on a good alimentation with water to the top, as water descended through the system each time locks were used. That's why the first channels tended to eschew hills, making the journeys very long and therefore the technique of building tunnels through the versants emerged.

Tunnels provide some of the last available space for cars and trains, water and sewage, even power and communication lines. Today, it's safe to bore through mountains and burrow beneath oceans – but it was not always this way. In fact, it took engineers thousands of years to perfect the art of digging tunnels.

By the 17th century, tunnels were being constructed for canals.

Without roads or railways to transport raw materials from the country to the city, watery highways became the best way to haul freight over great distances.

With trains and cars came a tremendous expansion in tunnel construction.

During the 19th and 20th centuries, the development of railroad and motor vehicle transportation led to bigger, better, and longer tunnels.

Today, not even mountains and oceans stand in the way.

With the latest tunnel construction technology, engineers can bore through mountains, under rivers, and beneath bustling cities. Before carving a tunnel, engineers investigate ground conditions by analyzing soil and rock samples and drilling test holes.

There are three steps to a tunnel's success. Today, engineers know that there are three basic steps to building a stable tunnel. The first step is excavation: engineers dig through the earth with a reliable tool or technique. The second step is support: engineers must support any unstable ground around them while they dig. The final step is lining: engineers add the final touches, like the roadway and lights, when the tunnel is structurally sound.

Based on the setting, tunnels can be divided into three major types.

Soft-ground tunnels are typically shallow and are often used as subways, water-supply systems, and sewers. Because the ground is soft, a support structure, called a tunnel shield, must be used at the head of the tunnel to prevent it from collapsing.

Rock tunnels require little or no extra support during construction and are often used as railways or roadways through mountains. Years ago, engineers were forced to

blast through mountains with dynamite. Today they rely on enormous rock-chewing contraptions called tunnel boring machines.

Underwater tunnels are particularly tricky to construct, as water must be held back while the tunnel is being built. Early engineers used pressurized excavation chambers to prevent water from gushing into tunnels. Today, prefabricated tunnel segments can be floated into position, sunk, and attached to other sections.

The world's longest tunnel (54 km) connects the Japanese islands Honshu and Hokkaido, under the Tsugaru Strait. It consists in a larger railway tunnel and two smaller road tunnels, also employed for maintenance, draining and ventilation.

The EuroTunnel (under the English Channel) is 50 km long and each of its twin tunnels are 7.6 m wide. It was built with an average speed of 12 cm per minute.

1. Read the statements below. If the statement is true, write T beside the sentence. If it is false, write F. If it is false, correct the information.

1. Before building a tunnel, detailed ground analyses and probe drills are made. ( )
2. Tunnels are excavated generally using tunnel digging machines ( )
3. Tunnels dug in stone are excavated through perforation and dynamiting. ( )
4. A tunnel is an underground passageway. ( )
5. Tunnels are dug in various types of materials, from soft clay to hard rock, and the method of excavation depends on the ground conditions. ( )

2. Answer the following questions.

1. Why do people build any tunnel?
2. What are the main steps to build any tunnel?
3. What types of tunnels are there?

3. Match the words with the corresponding definition.

1.	tunnel shield	**A.**	a blasting explosive, based on nitroglycerin, but much safer to handle than nitroglycerin alone
2.	dynamite	**B.**	to make a hole in the ground
3.	tunnel boring machine	**C.**	is a passage that has been dug under the ground for cars, trains etc to go through
4.	tunnel	**D.**	a cylinder pushed ahead of tunneling equipment to provide advance support for the tunnel roof; used when tunneling in soft or unstable ground
5.	dig	**E.**	a mechanical device that tunnels through the ground

TEXT 2. The Panama Canal

The Panama Canal is a waterway that crosses the Central American country of Panama and connects the Atlantic and Pacific Oceans. Ships can pass from one ocean to the other without making the long journey around the tip of South America. The canal opened officially on August 15, 1914.

From the Atlantic, ships pass through a set of locks (sections of the canal that are closed off with gates) that raise them 85 feet above sea level to a lake. After passing

through the lake, they are lowered to the Pacific through another series of locks. Small locomotives tow them through the locks, which are paired so ships can pass in both directions. The canal is 51 miles long and ships take about 15 hours to pass through it.

A French company began digging the Panama Canal on January 20, 1882. By the time it abandoned the project in 1888, thousands of workers had died in flood waters or mud slides or from the extreme heat, poisonous snake bites, or tropical diseases. It had spent over $285 million to build 11 miles of the canal.

The United States government took over its construction in 1904, but little progress was made in the first year.

In 1905, John Stevens became project leader and made two important changes. First, he had swamps drained to prevent disease-carrying mosquitoes from breeding and he made sure that workers were safely housed and well fed. Second, he changed the building plan from a sea-level canal to a lock-based canal. Nine years later, the canal was finished.

The canal took 34 years to build and cost over $600 million. Of the 80,000 people who worked on it, over 30,000 died while doing so.

Today, over 14,000 ships pass through the Panama Canal each year. This includes cruise ships carrying thousands of tourists who want to see one of the greatest engineering feats in the world.

In 1920, after some thirty-nine years of problems with Jisease, high costs, and politics, the Panama Canal was officially opened, finally linking the Atlantic and Pacific Oceans by allowing ships to pass through fifty-mile canal zone instead of traveling some seven thousand miles around Cape Horn. It takes a ship approximately eight hours to complete trip through the canal and costs an average of fifteen thousand dollars, one-tenth of what it would cost an average ship to round the Horn. More than fifteen thousand ships pass through its locks each year.

The French initiated the project but sold their rights to the United States. The latter will control it until the end of the twentieth century when Panama takes over its duties.

1. Read the statements below. If the statement is true, write T beside the sentence. If it is false, write F. If it is false, correct the information.

1. A French company started the original work on the Panama Canal. ( )
2. The French government completed the construction of the Panama Canal. ( )
3. It takes about 51 hours for a ship to pass through the Panama Canal. ( )
4. Thousands of people lost their lives during the building of this canal. ( )
5. Ships can only pass through the locks in one direction at a time. ( )

2. Practice asking and answering the following questions with your partner. Then write the answers in complete sentences.

1. Look at a world map and find the Panama Canal. How did the building of this canal change world shipping transportation?
2. Do you know when the Panama Canal was officially opened?
3. How long do you think it took to build the canal?

4. What kind of problems do you think were involved in the building of this canal?
5. How many ships do you think pass through the canal every year?
6. How did ships pass from the Atlantic to the Pacific before the Panama Canal was built?
7. Explain briefly how ships pass through the Panama Canal.
8. How long is the canal and how long does it take for ships to pass through it?
9. Why did the original French company abandon the project?
10. What changes did John Stevens make that resulted in the completion of the canal?
11. How long did it take to build the Panama Canal and what was the cost?
12. Why do many tourists want to see the Panama Canal?

3. Choose the correct answer A, B, C or D.

1. Who currently controls the Panama Canal?
   A. France **B.** United States **C.** Panama **D.** Canal Zone

2. In approximately what year will a different government take control of the Panama Canal?
   A. 2000 **B.** 2100 **C.** 3001 **D.** 2999

3. On the average, how much would it cost a ship to travel Cape Horn?
   A. $1,500 **B.** $15,000 **C.** $150,000 **D.** $1,500,000

4. In what year was construction probably begun on the canal?
   A. 1881 **B.** 1920 **C.** 1939 **D.** 1999

5. What can be inferred from this reading?
   A. This is a costly project which should be reevaluated.
   B. Despite all the problems involved, the project is beneficial.
   C. Many captains prefer to sail around Cape Horn because it is less expensive.
   D. Due to all the problems, three governments have had to control the canal over the years.

4. DISCUSSION QUESTIONS

1. The building of the Panama Canal cost thousands of human lives. What other construction projects around the world have also resulted in many deaths?
2. The Panama Canal is considered one of the greatest engineering feats in the world. Name several others. Where are they located?
3. Do you think the Panama Canal would have been completed if John Stevens hadn't improved the working conditions for the people working on the project?

TEXT 3. The Chunnel

The Chunnel is a railway tunnel that runs beneath the English Channel, connecting southern England with northern France. Officially called the Channel Tunnel, it is a modern-day wonder of engineering and technology.

Britain and France co-sponsored the project, and work began in 1987. Over 13,000 engineers, technicians, and workers took over 7 years to complete the Chunnel. Digging started from both ends, using gigantic earth-boring machines. The construction crews met near the middle of the Channel about 3 years later, on December 1, 1990.

Almost 90 acres of dirt and rubble were removed from under the seabed and added to Britain's coastline. A park was built on top of it.

The Chunnel is 31 miles long; 24 miles of this are undersea. On average, it runs 150 feet below the seabed. Its estimated cost was $21 billion or about $5 million a day.

It is not a single tunnel, but three separate tunnels (95 miles of tunnels in all). The two larger outside tunnels are for passenger, ferry, or freight trains. Service trains use the smaller middle tunnel, which also provides an escape route in an emergency. Cross-over tracks throughout the tunnel allow trains to move from one track to another. In November 1996, 31 passengers escaped a fire onboard a train through the middle tunnel.

The Chunnel has a passenger rail service that links London with Paris and Brussels. These trains can reach 100 mph during the 20-minute trip through the tunnel. Rail ferry services carry vehicles and their passengers, and freight trains carry cargo or container loads.

The Chunnel opened for business in late 1994. As of 2000, its services had carried 28 million passengers and 12 million tons of freight between England and France.

1. True or False. Read the statements below. If the statement is true, write T beside the sentence. If it is false, write F. If it is false, correct the information.

1. The Chunnel connects northern England and southern France. ( )
2. England and France shared the costs of building the Chunnel. ( )
3. It took about three years to complete the Chunnel. ( )
4. People can drive their cars through the Chunnel. ( )
5. The trip through the Chunnel takes about 95 minutes. ( )

2. Practice asking and answering the following questions with your partner. Then write the answers in complete sentences.

1. Do you know where the Chunnel is located?
2. Have you ever traveled through an undersea tunnel?
3. Can you guess how much it cost to build the Chunnel?
4. How long do you think it took to build the Chunnel?
5. Do you know the official name for the Chunnel?
6. How much work was involved in building the Chunnel?
7. Where did the digging of the Chunnel begin?
8. What is the length of the Chunnel and how long does it take to travel through it?
9. Which is the smallest tunnel and what is it used for?
10. What did it cost to build the Chunnel and who paid for it?
11. Have there ever been any emergency situations in the Chunnel?

12. How deep is the Chunnel?
13. Can a person travel through the Chunnel with his/her car?
14. Do you think that the building of the Chunnel was worth the huge cost of 21 billion dollars? Explain your answer.
15. What other long undersea tunnels do you know about? How long are they and where are they located?
16. What other modern-day engineering wonders can you think of? Where are they located? Can you think of any ancient engineering wonders that have been built? Describe several of each.
16. If you wanted to travel between England and France with your car, would you prefer to go by ferry boat or use the Chunnel? Explain your answer.

TEXT 4. The Channel Tunnel

The Channel Tunnel (Chunnel) is a rail tunnel beneath the English Channel at the Straits of Dover, connecting Cheriton in Kent, England and Sangatte in northern France. A long-standing and hugely expensive project that saw several false starts, it was finally completed in 1994. It is the second longest rail tunnel in the world, surpassed only by the Seikan Tunnel in Japan. It is operated by Eurotunnel plc.

In 1957 the Channel Tunnel Study Group was formed. It reported in 1960 and recommended a railway tunnel of two main tunnels and a smaller service tunnel. The project was launched in 1973 but folded due to financial problems in 1975 after the construction of a 250 m test tunnel.

In 1984 the idea was relaunched with an Anglo-French government request for proposals to build a privately funded link. Of the four submissions received the one most closely resembling the 1973 plan was chosen and announced on January 20, 1986. The Fixed Link Treaty was signed by the two governments in Canterbury, Kent on February 12, 1986 and ratified in 1987.

The planned route of the tunnel took it from Calais to Folkestone (a route rather longer than the shortest possible crossing) and the tunnel was to follow a single chalk stratum (which meant the tunnel was deeper than the previous attempt). For much of its route, the tunnel is nearly 40 m under the seafloor, with the southern section being deeper than the northern.

Digging the tunnel took 15,000 workers over seven years, with tunnelling operations conducted simultaneously from both ends. The prime contractor for the construction was the Anglo-French TransManche Link, a consortium of 10 construction companies and 5 banks of the two countries. Engineers used large tunnel boring machines (TBMs), mobile excavation factories that combined drilling, material removal, and the process of shoring up the soft and permeable tunnel walls with a concrete liner. After the British and French TBMs had met near the middle, the French TBM was dismantled while the British one was diverted into the rock and abandoned. Almost 4 million cubic metres of chalk were excavated on the English side, much of which was dumped below Shakespeare Cliff near Folkestone to reclaim 90 acres of land from the sea.

The Channel Tunnel consists of three parallel tunnels: two primary rail tunnels, which carry trains north and south, and a smaller access tunnel. This access tunnel, which is served by narrow wheeled vehicles, is interconnected, by means of transverse passages, to the main tunnels at regular intervals. It allows maintenance workers access to the tunnel complex and provides a safe route for escape during emergencies.

When the two tunnels met 40 m beneath the English Channel seabed on December 1, 1990, in what was to become one of the 'crossover halls' that allow diversion of trains from one main tunnel to the other, it became possible to walk on dry land from Britain to mainland Europe for the first time since the end of the last ice age, over 13,000 years ago. The British and French efforts, which had been guided by laser surveying methods, met with less than 2 cm of error.

The tunnel was officially opened by Queen Elizabeth II and French President Franзois Mitterrand in a ceremony held in Calais on May 6, 1994.

1. Read the statements and find out if they are true or false.

1. The Channel Tunnel was completed in 1994. ( )
2. It took ten years to finish the tunnel. ( )
3. The tunnel runs 40m under the sea. ( )
4. There are three parallel tunnels inside the Chunnel. ( )
5. The tunnels from both ends met in 1990. ( )

2. Read and decide which of these events are the most interesting to you.

Other Interesting Crossings

1785 John Jeffries and Jean Pierre Blanchard first crossed the Channel by balloon.

1875 Captain Matthew Webb swam across the channel. Thousands of people have done this since then.

1883 William Terry rode from Midlands of England to Dover on tricycle, which changed into a rowing boat and took him across to France.

1934 The Frenchman Monsieur Flourens tried to cross from France on a huge rubber ball.

1959 The first British hovercraft crossed from Calais to Dover in two hours three minutes.

Every year 'mad' Englishmen try to cross the Channel in all kinds of 'boats'. Here are some of the sillier examples: a large bed, a giant gin bottle, a jacuzzi, a beer barrel, a parachute behind a boat.

2. Vocabulary Exercises

A. Read the text given below and decide which answer A, B, C or D best fits each space.

Chunnel or Brunnel?

In the 1856 a French engineer, Thomè de Gamond, suggested the building of a tunnel (1) _____ the English Channel. The well-known British engineers

Brunel and Stephenson became interested and the French government agreed to the (2) _____. But in 1883 the British government stopped the plans for political reasons.

In the 1950's and 1960's engineers again worked on plans for a Channel link. (3) _____ looked at three different ideas: a tunnel through the rock under the sea-bed, a tunnel on the sea-bed and a bridge.

But in 1975 the British government again decided not to start the building (4) _____. This time the cost of the scheme (5) _____ too high.

In 1984 the idea came up for the third time. Both the British and the French governments showed interest. (6) _____ time there are two main suggestions: the Chunnel and the Brunnel.

The Chunnel was the favourite and cheapest plan. It was a double rail tunnel. Motorists couldnot drive through this, but trains carried cars and lorries through the tunnel between England and France.

The Brunnel was the idea of the Euroroute company. It wass for trains and road traffic. Trains used a tunnel all the (7) _____ way from England to France. Cars used a tunnel only for the middle of the journey. At (8) _____ ends there were bridges, from the land to islands several miles off the coast.

The cost of both ideas was very high, and work couldnot start (9) _____ the two governments agree. Some people thought this would be 100 years too late. Others, mainly British people, did not want a link of any kind between Britain and the continent of Europe. But it was taking them a short time to get used to the idea (10) _____ being Europeans. Nowadays Englishpeople prefer to travel to France and Belgium throught the Channel Tunnel.

1.	**A.**	under	**B.**	into	**C.**	on	**D.**	near
2.	**A.**	design	**B.**	scheme	**C.**	circuit	**D.**	schedule
3.	**A.**	the	**B.**	there	**C.**	they	**D.**	their
4.	**A.**	action	**B.**	activity	**C.**	job	**D.**	work
5.	**A.**	are	**B.**	is	**C.**	was	**D.**	be
6.	**A.**	that	**B.**	this	**C.**	these	**D.**	those
7.	**A.**	route	**B.**	path	**C.**	way	**D.**	road
8.	**A.**	neither	**B.**	either	**C.**	no	**D.**	both
9.	**A.**	until	**B.**	since	**C.**	for	**D.**	because
10.	**A.**	for	**B.**	of	**C.**	from	**D.**	to

B. Look at this schedule of 'Important Dates' in the programme of the Channel Tunnel construction. Underline the key words in each statement. (Don't underline more than FOUR words in any one statement).

Important Facts

2 April 1985	The French and British governments ask for proposals for the design and construction of a 'fixed link' between their two countries.
20 January 1986	A twin-bore rail tunnel, to be built by a company called Transmanche Link, is chosen as the way forward.

29 July 1987	The necessary formalities for the link are completed (namely the ratification of the treaty).
1 December 1987	Tunnelling under the seabed begins in the UK.
8 February 1988	Tunnelling under the seabed on the French side begins.
28 June 1988	Tunnelling under the land on the French side begins.
30 September 1988	Tunnelling under the land on the English side begins.
21 April 1990	Total length of tunnelling is now 75.7 km – half the total for the complete tunnel.
13 August 1990	The total length of tunnelling now reaches 100 km – two thirds of the total.
1 December 1990	The first breakthrough between tunnels started from France and from England is made. This is the first time in twelve thousand years that it has been possible to walk between the two countries.
28 June 1991	Tunnelling completed.

Find the words given in column A in the 'Important Dates' and match them with their very brief explanations in column B.

A.	**B.**
1. proposals for the design and construction	**A.** when the tunnel from France met the tunnel from England
2. fixed link	**B.** the official arrangements
3. twin-bore	**C.** a permanent / solid connection
4. necessary formalities	**D.** suggestions for what the Tunnel should look like and how it should be built
5. the first breakthrough	**E.** two holes

1	2	3	4	5

Read these 'Fascinating Facts' about the Channel Tunnel and:

Put a tick beside the two which give permission for something; underline the one you think is the most important.

Fascinating Facts

1. All the train drivers are bi-lingual.
2. There is a system in the Tunnel for electrocuting stray animals.
3. It took 170 billion hours of work to complete the tunnel.
4. The boring of the Tunnel took three and a half years.
5. The police in England and in France have the power to arrest wrong-doers on each side of the Tunnel.
6. National frontiers are about 55 m beyond the toll-booth which you pass at the start of your journey.

7. The Eurotunnel company has the concession to run the Tunnel for 65 years but it is required to make a proposal for a drive-through tunnel by the year 2000 and this tunnel should be in use by 2020.

8. The main tunnels are between 25 m and 40 m below the sea.

9. There is a system for X-raying whole cars.

Read through the 'Fascinating Facts' again and put a circle round the key words in each statement. (Don't circle more than FIVE words in any one statement.)

3. Vocabulary Focus

A. Choose the word(s) with the closest meaning to the underlined words in the following sentences.

1. The tunnel runs beneath the English Channel connecting England and France.
   A. between **B.** under **C.** across

2. Britain and France co-sponsored the project.
   A. supported it together **B.** built **C.** designed

3. Gigantic earth-boring machines were used.
   A. soil digging **B.** expensive **C.** technical

4. The estimated cost of the tunnel was 21 billion dollars.
   A. total **B.** huge **C.** approximate

5. As of the year 2000, 12 million tons of freight had been carried through the Chunnel.
   A. cars **B.** cargo **C.** passengers

6. The Chunnel is a modern-day wonder of engineering and technology.
   A. building **B.** tunnel **C.** a very surprising accomplishment

B. Match the words on the left with the correct meaning on the right.

A.

1.	dig	**A.**	give
2.	gigantic	**B.**	car, truck, bus, etc.
3.	rubble	**C.**	in or on a ship, train, or airplane
4.	ferry	**D.**	connect, join
5.	provide	**E.**	make a hole
6.	escape	**F.**	something used for holding or transporting things
7.	onboard	**G.**	very large, huge
8.	link	**H.**	little bits of broken stones
9.	vehicle	**I.**	get free
10.	container	**J.**	something that carries people and goods across water

B.

1.	abandon	**A.**	assume control
2.	tow	**B.**	movement forward, improvement
3.	locomotive	**C.**	reproducing, making more
4.	poisonous	**D.**	let water flow away; empty water
5.	progress	**E.**	pull
6.	swamp	**F.**	an action showing great skill
7.	drain	**G.**	part of a canal where the water level changes
8.	breeding	**H.**	go away from
9.	cruise	**I.**	causing death or injury
10.	feat	**J.**	an engine used for pulling
11.	take over	**K.**	soft, wet land
12.	lock	**L.**	travel by sea

C. Put the words into the gaps in the text.

Tunnel Planned between Russia and USA

Russian officials have (1) _____ there are plans to build an (2) _____ new tunnel between Russia and the USA. The proposed link would cost $60 billion and take 15 years to complete. The (3) _____ project would go under the Bering Strait, which is a thin (4) _____ between Russia's Far East and Alaska in the USA. Russian businessmen are very eager for the scheme to go ahead. They say it would (5) _____ increase the amount of trade between Asia and North America and would (6) _____ travel costs between the two continents. Representatives of Russian President Vladimir Putin said: 'It is planned to (7) _____ on the governments of Russia, the United States and Canada to sign an agreement to study and go (8) _____ with the project.'

The (9) _____ to build a tunnel across the 85-kilometre Bering Strait is not new. People discussed it first more than 100 years ago, but it was forgotten about (10) _____ the Soviet era. However, since the end of the Cold War, the plan has come back into politicians' (11) _____ and it is now a serious possibility. (12) _____, there are people who think the project is a bad idea. Reuter's news agency reports a Russian official who (13) _____ concern over the link, saying: 'To be honest, anyone who looks at a map will (14) _____ that the project is too hard to do.' Alternatively, many others see a transport link that could (15) _____ New York City in the USA with Shanghai in China. This would become the world's greatest train journey. The tunnel could also pipe much-(16) _____ energy from Russia to North America.

ambitious
cut
amazing
greatly
ahead
announced
call
waterway
connect
minds
realize
naturally
needed
idea
expressed
during

1. Look at the article's headline and guess whether these sentences are true (T) or false (F).

1. Politicians want to build a tunnel that links the USA and Russia. ( )

2. The tunnel would take 50 years to construct. ( )
3. Russian businessmen are against the project. ( )
4. Vladimir Putin's government is eager for the project to go ahead. ( )
5. The tunnel would be 850 kilometres long. ( )
6. The idea of the tunnel was first thought of over a century ago. ( )
7. A Russian official said the tunnel looks very easy looking at a map. ( )
8. The tunnel would create the world's longest train journey. ( )

2. Match the following synonyms from the article.

1.	officials	**A.**	transport
2.	proposed	**B.**	keen
3.	ambitious	**C.**	period
4.	eager	**D.**	suggested
5.	call on	**E.**	on the other hand
6.	era	**F.**	bureaucrats
7.	concern	**G.**	link
8.	alternatively	**H.**	ask
9.	connect	**I.**	challenging
10.	pipe	**J.**	worry

3. Match the following phrases from the article (sometimes more than one combination is possible).

1.	there are plans to build	**A.**	for the scheme to go ahead
2.	The ambitious project would go	**B.**	first more than 100 years ago
3.	businessmen are very eager	**C.**	under the Bering Strait
4.	cut travel costs	**D.**	concern over the link
5.	go	**E.**	from Russia to North America
6.	People discussed it	**F.**	an amazing new tunnel
7.	the plan has come back	**G.**	hard to do
8.	a Russian official who expressed	**H.**	into politicians' minds
9.	the project is too	**I.**	ahead with the project
10.	pipe much-needed energy	**J.**	between the two continents

4. Answer the questions.

STUDENT A's QUESTIONS

1. What did you think when you read the headline?
2. Do you think the tunnel is a good idea?
3. What are the main advantages of building this tunnel?
4. Do you think it will be possible to drive around the world one day?
5. Are there any very useful tunnels in your country?
6. What do you think the tunnel will do for US-Russian relations?
7. Who will benefit most and least from the tunnel?
8. Do you have any favourite tunnels or bridges?
9. What name would you give to the new tunnel?
10. What kinds of things might the governments have to study before they build the tunnel?

STUDENT B's QUESTIONS

1. Did you like reading this article?
2. Do you think they could have built the tunnel a century ago?
3. Do you think there the tunnel will cause any problems?
4. What do you know about the Soviet era and the Cold War?
5. Why do you think some politicians think it's a bad idea?
6. Would you like to take the train from Shanghai to New York?
7. What future transport schemes would you like to see happen?
8. There are also plans to link Spain and Morocco and Yemen with Somalia. What do you think of these ideas?
9. What do you think of the idea of a bridge to the moon?
10. Did you like this discussion?

DISCUSSION QUESTIONS

1. What was the most interesting thing you heard?
2. Was there a question you didn't like?
3. Was there something you totally disagreed with?
4. What did you like talking about?
5. Which was the most difficult question?

D. Read the following text and choose the best word A, B, C or D for each numbered blank.

Today, most countries in the world have canals. Even in the 20th century, goods can be moved more (1) _____ by boat than by any other (2) _____ of transport. Some canals, such as the Suez or the Panama, (3) _____ boats weeks of time by making their (4) _____ a thousand miles shorter. Other canals permit boats to reach cities that are not (5) _____ on the coast. (6) _____ other canals (7) _____ landsswheresthere is too much water, help to (8) _____ fieldsswheresthere is not enough water, and (9) _____ water power for factories and mills. The (10) _____ of canals depends on the kind of boats going through it. The canal must be wide enough to permit two of the largest boats using it (11) _____ each other easily. It must be deep enough to leave about two feet of water (12) _____ the keel of the largest boat using the canal. Some canals have (13) _____ sides while others have sides that are nearly vertical. Canals that are cut through rock can have nearly vertical sides. (14) _____ , canals with earth banks may collapse if the angle of their sides is too (15) _____ .

Some canals are (16) _____ with brick, stone or concrete to keep the water from (17) _____ sintosthe mud. This also permits ships to go (18) _____ greater speeds, since they cannot make the banks fall in by (19) _____ the water. In small canals with mud banks, ships and barges must (20) _____ their speed.

1. **A.** frequently **B.** cheaply **C.** regularly **D.** routinely

2.	**A.**	methods	**B.**	ways	**C.**	channels	**D.**	means
3.	**A.**	consume	**B.**	reserve	**C.**	take	**D.**	save
4.	**A.**	excursion	**B.**	voyage	**C.**	travel	**D.**	expedition
5.	**A.**	located	**B.**	perched	**C.**	stationed	**D.**	founded
6.	**A.**	Still	**B.**	Yet	**C.**	Even	**D.**	Also
7.	**A.**	drown	**B.**	drift	**C.**	drain	**D.**	draw
8.	**A.**	cultivate	**B.**	exploit	**C.**	evaporate	**D.**	irrigate
9.	**A.**	furnish	**B.**	equip	**C.**	facilitate	**D.**	generate
10.	**A.**	scale	**B.**	size	**C.**	scope	**D.**	span
11.	**A.**	to pass	**B.**	passed	**C.**	pass	**D.**	to passing
12.	**A.**	under	**B.**	beyond	**C.**	beneath	**D.**	across
13.	**A.**	tilting	**B.**	curving	**C.**	smooth	**D.**	sloping
14.	**A.**	However	**B.**	Moreover	**C.**	Though	**D.**	Somehow
15.	**A.**	stable	**B.**	level	**C.**	prominent	**D.**	steep
16.	**A.**	decorated	**B.**	solidified	**C.**	lined	**D.**	trimmed
17.	**A.**	dripping	**B.**	filtering	**C.**	penetrating	**D.**	soaking
18.	**A.**	with	**B.**	in	**C.**	at	**D.**	on
19.	**A.**	touching up	**B.**	stirring up	**C.**	mixing up	**D.**	clearing up
20.	**A.**	restrain	**B.**	confine	**C.**	limit	**D.**	prohibit

4. Speaking Practice

A. Read the conversation from London Life programme choosing the correct Pobert Holse's answers below.

The Thames Tunnel

One of the great engineering achievements of all time is celebrated in London Life programme. The first tunnel to be built under a river anywhere in the world is the Thames Tunnel. Isambard Kingdom Brunel, who was born 200 years ago in 1806, and his father were the engineers behind this historic tunnel.

Pobert Holse's Answers

1. They needed a way of moving stuff across the river as well as up and down it. You can't build a bridge here because you've got 3,000 tall-masted ships. The only way to do it is to move stuff under the river but no-one had ever done that before and we're standing more or less directly above the first tunnel under a river anywhere in the world.

2. They build here on the river bank a 50-foot tall tower – now that's taller than any of the buildings here now. And as the weight of the bricks gets heavier and heavier it sinks under its own weight into the soft earth. And then they lower people inside … So the shaft sinks itself under its own weight, the men go down 50 feet, when they hit the bottom, they start digging, hacking at the walls and they're heading northwards across to the other side of the river.

3. For the first time anywhere in the world they understood the best way to build below the ground is to build above the ground and sink it.

Anna: Hello, I'm Anna Jones and this is London Life.

Two hundred years ago in 1806 Isambard Kingdom Brunel was born. He was the son of a French civil engineer – civil engineers plan, design and build roads, bridges and public buildings. And Isambard Kingdom Brunel was destined to follow the same career path as his father and become one of the world's most famous engineers. During his life Brunel designed and built docks – enclosed areas of water where ships are loaded, unloaded and repaired. He also designed and built railways, steamships and much more. With his father, Brunel designed and built the historic Thames Tunnel which is now used by the East London line of the London Underground train system. The Thames Tunnel is 35 feet wide and 1,300 feet long, beneath the River Thames between Rotherhithe and Wapping. A BBC reporter recently met Robert Holse who is the director of the Brunel Museum in East London. As you listen to Robert, try to answer this question – why did they need to build the tunnel?

ROBERT HOLSE: _____ .

Anna: Did you get the four other prepositions? They were: up, down, under and above.

Robert goes on to explain how Brunel and his father decided to go about building the tunnel. What did they decide they had to do?

ROBERT HOLSE: _____ .

Anna: Well he uses the prepositions below and above. Robert explains how they start to build the tunnel. What is the first thing they build and why?

ROBERT HOLSE: _____ .

Answer the following questions.

1: Who built the Thames Tunnel?
2: Why did they need to build a tunnel?
3: Who uses the tunnel today?

Choose the correct answer A, B or C.

1. Is the Thames tunnel _____ ? – Yes, it is.
   A. over the River Thames
   B. across the River Thames
   C. under the River Thames

2. Why didn't they build a bridge?
   A. There were too many ships with tall masts.
   B. The ground was too soft.
   C. The river was too wide.

Find the words in the conversation which mean the following.

1. someone who plans, designs and builds roads, bridges and public buildings
2. to move downwards
3. a tall, narrow building
4. the act of cutting at something with a sharp tool

5. towards the north

5. Writing Skills

Read information about some tunnels and write down necessary facts in the table below. If you don't find some information try to get it from Internet.

	Big Dig	Chesapeake Bay Bridge-Tunnel	Holland Tunnel	New York Third Water Tunnel	Seikan Tunnel
Location					
Completion Date					
Cost					
Length					
Purpose					
Setting					
Materials					
Engineer(s)					

Central Artery / Tunnel Project (Big Dig)

Some call the Central Artery/Tunnel Project in Boston, Massachusetts, the 'largest, most complex and technologically challenging highway project in American history.' Others consider it one of the most expensive engineering projects of all time. Locals simply call it the 'Big Dig.' By the time it's finished in 2004, the tunnel will be eight lanes wide, 3.5 miles long, and completely buried beneath a major highway and dozens of glass-and-steel skyscrapers in Boston's bustling financial district. What does it take to dig a tunnel like this? A lot of hard work and a handful of engineering tricks.

Today, engineers use special excavating equipment, called 'clamshell excavators,' that work well in confined spaces like downtown Boston. These special machines carve narrow trenches – about three feet wide and up to 120 feet deep – down to bedrock. In Boston, engineers are pumping liquid slurry (clay mixed with water) into the trenches to keep the surrounding dirt from caving in. Huge reinforcing steel beams are lowered into the soupy trenches, and concrete is pumped into the mix. Concrete is heavier than slurry, so it displaces the clay-water mix. The side-by-side concrete-and-steel panels form the walls of the tunnel, which will allow workers to remove more than three miles of dirt beneath the city.

As if tunneling beneath a city isn't hard enough, the soil beneath Boston is actually landfill – it's very loose and soggy. Engineers had to devise a few tricks to keep the soggy soil from collapsing. Their solution: freezing the soil! Engineers pump very cold saltwater through a web of pipes beneath the city streets. The cold pipes draw heat out of the soil little by little. Once frozen, the soil can be excavated

without sinking. Engineers also inject glue, or grout, into pores in the ground to make the soil stronger and less spongy during tunnel construction.

Chesapeake Bay Bridge-Tunnel

Distinguished as an 'Outstanding Civil Engineering Achievement' by the American Society of Civil Engineers in 1965, the Chesapeake Bay Bridge-Tunnel is nothing short of a modern engineering wonder. Dipping over and under open waters with a complex chain of artificial islands, tunnels, and bridges, the Chesapeake Bay Bridge provides a direct link between Southeastern Virginia and the Delmarva (Delaware, Maryland, and Virginia) Peninsula. The bridge-tunnel complex is 17.6 miles long from shore to shore, and it cuts 95 miles from the journey between Virginia Beach and points north of Wilmington, Delaware.

The majority of the bridge-tunnel complex is above the water, supported by more than 5,000 piers. But due to the importance of shipping in the bay, the crossing was sunk deep beneath the bay in two mile-long tunnels, to allow the passage of ships. Four artificial islands, each with approximately ten acres of surface, provide the portals by which the road enters the tunnels. It's quite an eerie experience to be driving along and see the road you're on disappear into the bay. Millions of cars have crossed the Chesapeake Bay Bridge-Tunnel since it opened in 1965. It's possible that many just crossed it for the thrill of it!

Holland Tunnel

By the early 1920's, ferries across the Hudson River, the only mode of travel between New York City and New Jersey, strained to handle more than 20,000 vehicles a day. Fed up with the traffic congestion to and from the city, New York City officials decided to build an automobile tunnel under the Hudson River – one that would double the daily traffic load across the river. The biggest challenge was ventilation. Without some way of eliminating all the poisonous carbon monoxide from the automobiles in the tunnel, most drivers would pass out before reaching the other side!

Engineer Clifford Holland came up with a brilliantly simple solution: big fans. Inside four massive ventilation buildings on both ends of the tunnel are 84 powerful electric fans that draw fresh air into the tunnel and blow dirty air out. Each fan is 80 feet in diameter. That's almost as tall as a 10-story building!

Unfortunately, fans this big can also be quite dangerous. In 1949, a chemical truck loaded with 80 drums of carbon disulfide exploded in the tunnel, injuring 69 people and causing $600,000 in damage to the structure. The ventilation buildings actually fanned the flames of the fire. As a result, strict standards were established in tunnels throughout the world for the transportation of chemicals and explosives.

New York Third Water Tunnel

Six hundred feet below the busy streets of New York City, engineers are boring a 60-mile-long tunnel – the largest tunnel in America. This tunnel won't carry cars,

trains, or even people, but it will deliver 1.3 billion gallons of water daily to nine million area residents. New York City's $6 billion Third Water Tunnel is one of the nation's largest and most complex public works projects ever attempted.

In 1954, New York City recognized the need for a new tunnel to meet the growing demand on its 150-year-old water supply system. Construction began in 1970 on the Third Water Tunnel, a tunnel designed to improve the dependability of New York City's entire water supply system. The majority of the tunnel is being carved with a 450-ton, 19-foot diameter rock-chewing device called a tunnel boring machine. Unlike the older water supply tunnels in New York City, water control valves in the Third Water Tunnel will be housed in large underground chambers, making them accessible for maintenance and repair.

When completed in 2020, the size and length of the Third Water Tunnel, its sophisticated valve chambers, and its depth of excavation will represent the latest in state-of-the-art tunnel technology.

Seikan Tunnel

In 1954, a typhoon sank five ferry boats in Japan's Tsugaru Strait and killed 1,430 people. In response to public outrage, the Japanese government searched for a safer way to cross the dangerous strait. With such unpredictable weather conditions, engineers agreed that a bridge would be too risky to build. A tunnel seemed a perfect solution. Ten years later, work began on what would be the longest and hardest underwater dig ever attempted.

Engineers couldn't use a tunnel boring machine to carve the Seikan Tunnel because the rock and soil beneath the Tsugaru Strait was random and unpredictable. Instead, tunnel workers painstakingly drilled and blasted 33 miles through a major earthquake zone to link the main Japanese island of Honshu with the northern island of Hokkaido. Today, the Seikan Tunnel is the longest railroad tunnel in the world at 33.4 miles in length, 14.3 miles of which lie under the Tsugaru Strait.

Three stories high and 800 feet below the sea, the main tunnel was designed to serve the Shinkansen, Japan's high-speed bullet train. Unfortunately, the cost of extending the Shinkansen service through the new tunnel proved to be too expensive. In fact, air travel today between Honshu and Hokkaido is quicker and almost as cheap as rail travel through the tunnel. Despite its limited use, the Seikan Tunnel remains one of the greatest engineering feats of the 20th century.

UNIT FIVE. UNDERGROUND

1. Reading Comprehension

The Construction of London Underground

Location: London, England
Completion Date: 1863 (first line)
Length: 19,800 feet (3.75 miles)
Purpose: Subway
Setting: Soft ground
Materials: Cast iron, brick
Engineer(s): Sir John Fowler

The London Underground is a public transport network, composed of electrified railways that run underground in tunnels in central London and above ground in the city's suburbs. The oldest metropolitan underground network in the world, first operating in 1863, the London Underground is usually referred to as either simply 'the Underground' by Londoners, or (more familiarly) as 'the Tube'.

Shortly after the opening of the Thames Tunnel, Parliament authorized construction of the first subway system in the world, the London Underground. Work began in 1860 on the first stretch of the underground subway, the Metropolitan Railway. By all accounts, it was a royal mess. Tunnel diggers used the cut and cover method: they carved huge trenches in the streets, lined the trenches with brick, covered the trenches with arch roofs, and then restored the street above. This sloppy method paralyzed traffic and made canyons out of city avenues. Cut-and-cover construction on the District line necessitated the demolition of a number of houses over the site of the line between Paddington and Bayswater, but it was a huge success. The new subway carried more than nine million people in its first year!

Soon, Londoners were craving more, and they got it. This time, with the help of James Henry Greathead's tunnel shield, London engineers could tunnel under the city without completely destroying the streets above. Greathead's round iron shield supported the soft soil as it moved forward and carved a perfectly round hole hundreds of feet below London's bustling city streets. Inside the shield, tunnel workers laid cast-iron segments end to end. These segments eventually formed a stiff, waterproof tube, perfect for subways.

Lines on the Underground can be classified into two types: sub-surface and deep level. The sub-surface lines were dug by the cut-and-cover method, with the tracks running about 5 metres below the surface. Trains on the sub-surface lines have the same loading gauge as British mainline trains.

The deep-level or 'tube' lines, bored using a tunnelling shield, run about 20 metres below the surface (although this varies considerably), with each track running in a separate tunnel lined with cast-iron rings. These tunnels can have a diameter as small as 3.56m and the loading gauge is thus considerably smaller than on the sub-surface lines, though standard gauge track is used.

The first trains were steam-hauled, which required effective ventilation to the surface. Ventilation shafts at various points on the route allowed the engines to expel steam and bring fresh air into the tunnels. One such vent is at Leinster Gardens, W2. In order to preserve the visual characteristics in what is still a well-to-do street, a five-foot-thick (1.5 m) concrete façade was constructed to resemble a genuine house frontage.

Following advances in the use of tunnelling shields, electric traction and deep-level tunnel designs, later railways were built even further underground. This caused far less disruption at ground level than the cut-and-cover construction method did. It was therefore cheaper and preferable. The City & South London Railway (now part of the Northern line) opened in 1890. It was the first 'deep-level', electrically operated, route.

1. Choose the correct answer A, B or C.

1. According to the passage, the other name of the subway in London is '_____'.
   A. the tube **B.** the underground **C.** the lines

2. The London Underground runs _____ .
   A. underground **B.** above the ground **C.** under and above the ground

3. The sub-surface lines run about _____ .
   A. 5 m below the surface
   B. 15 m below the surface
   C. 20m below the surface

2. Fill in the gaps with one of the words given in the box.

construction	opened
covered trenches	shallow line
cut-and-cover method	stretch
deep-level tunnel construction methods	to build
deep-tunneling 'tube' system	tunnelling shields
engineer	ventilation shafts

How Built the First Underground

In 1854 it was decided that the Metropolitan Railway Company would be allowed to build a short (1) _____ of underground railway between Paddington and Farringdon. John Fowler worked as an (2) _____ on most of the extensions of the Metropolitan Railway (the early London Underground), which was the world's first subway system. So he became the pioneer of underground railways. He helped (3) _____ the first underground railway in London, the Metropolitan line in the 1860s, a (4) _____ built by the 'cut-and-cover' method.

The relatively simple (5) _____ was used, because (6) _____ were not sufficiently advanced to construct anything more than (7) _____.

This first part of the Metropolitan Railway was (8) _____ in 1863 using steam locomotives to haul trains, which meant that (9) _____ had to be built at regular intervals.

John Fowler also designed and built a locomotive known as 'Fowler's Ghost' for the railway. Later he was an engineer for the (10) _____ extensively adopted for London electric railways. Advances in deep-level tunnel design came thick and fast. (11) _____ allowed stable tunnels to be constructed deep underground, and the world's first underground tube railway was the Tower Subway beneath the River Thames south of Tower Hill in 1870.

He was also the engineer for the (12) _____ of Victoria Station.

2. Vocabulary Focus

The Budapest Metro

A. Read the following text and choose the best word A, B, C or D for each numbered blank.

Part 1

The Budapest Metro is the metro system in the Hungarian capital Budapest. It is the second-oldest underground metro system (1) _____ the world. Its iconic Line 1 (dating from 1896) was declared a World Heritage Site in 2002.

It consists of three lines, each designated by a number and a colour. Metro Line 4 is currently (2) _____ construction; the first section is to begin operation in 2011. A fifth line has also been included in medium to long-term plans.

The original purpose of the first metro line was to carry passengers (3) _____ Budapest City Park, although the capital always opposed any surface transport on Andrássy Avenue, which has since become the most elegant road in Budapest and part of the World Heritage Site. The National Assembly accepted the metro plan in 1870, and the German firm Siemens & Halske AG was commissioned (4) _____ the construction, which started in 1894. It took 2,000 workers using state-of-the-art machinery (5) _____ two years to complete it. This section was built entirely from the surface (6) _____ the cut-and-cover method. Completed (7) _____ the deadline, it was inaugurated on May 2, 1896, the year (8) _____ the millennium (the thousandth anniversary of the arrival of the Magyars), (9) _____ Emperor Franz Joseph. One of the original cars is preserved at the Seashore Trolley Museum. The train ran (10) _____ Andrássy Avenue, from the centre to City Park, in a northeast-southwest direction, but its terminus was the Zoo (this has since been replaced). It had eleven stations: nine underground and two aboveground. The length of the line was 3.7 kilometres at that time; trains ran every two minutes. It was able to carry (11) _____ 35,000 people a day (today 103,000 people travel on it (12) _____ a workday).

1.	**A.** in	**B.** over	**C.** on	**D.** by
2.	**A.** in	**B.** under	**C.** on	**D.** below

3.	**A.**	in	**B.**	for	**C.**	of	**D.**	to
4.	**A.**	under	**B.**	for	**C.**	in	**D.**	from
5.	**A.**	less than	**B.**	less then	**C.**	less	**D.**	then
6.	**A.**	by	**B.**	of	**C.**	from	**D.**	with
7.	**A.**	by	**B.**	to	**C.**	on	**D.**	until
8.	**A.**	of	**B.**	for	**C.**	–	**D.**	till
9.	**A.**	to	**B.**	against	**C.**	for	**D.**	by
10.	**A.**	along	**B.**	by	**C.**	to	**D.**	in
11.	**A.**	many	**B.**	as	**C.**	as many as	**D.**	as much as
12.	**A.**	on	**B.**	in	**C.**	at	**D.**	for

B. Read the following text and choose the best word A, B, C or D for each numbered blank.

Part 2

Plans for the next two metro lines were made as early as 1895, defining the main directions of north-south and east-west. The first plans for today's two lines were made in 1942, and a Council of Ministers' decree (1) _____ construction in 1950. Metro 2 was originally planned to connect two major railway stations. It was originally supposed to have been completed by 1955, but construction was (2) _____ financial and political reasons from 1954 till 1963. It was finally (3) _____ seven stations on April 4 (a Communist holiday) in 1970. It (4) _____ an east-west direction, and as yet it is the only line to cross the River Danube and reach Buda, the western part of Budapest. It has a joint station with the existing metro at Deák Ferenc Square, which has since become a transfer point for the third line as well.

The first line underwent a thorough refurbishment between 1970 and 1973, including replacement of its rolling stock. When it reopened, the first line, which had previously run on the left, was (5) _____ right-hand running, like the other lines. In 1973, both lines were extended – the first with one station, the second with four – and the first line reached its current length of 4.4 kilometres, as well as the second at 10.3 kilometres, serving eleven stations. The Budapest Transport Company (6) _____ maintenance in 1973, and this company still runs the metro. The colour-marking of the metro lines was introduced in 1976, when the first section of the third line was (7) _____ the public. This was when the first line was given the colour yellow, the second line red, and the third, blue. Additionally, green is used to mark the suburban railways in and around Budapest.

1.	**A.**	kicked off	**B.**	kicked in	**C.**	kicked over	**D.**	kicked out
2.	**A.**	ceased to	**B.**	ceased in	**C.**	ceased for	**D.**	ceased of
3.	**A.**	opened by	**B.**	opened with	**C.**	opened for	**D.**	opened to
4.	**A.**	runs in	**B.**	runs along	**C.**	runs to	**D.**	runs at
5.	**A.**	switched off	**B.**	switched on	**C.**	switched from	**D.**	switched to
6.	**A.**	took off	**B.**	took over	**C.**	took out	**D.**	took on
7.	**A.**	opened with	**B.**	opened by	**C.**	opened to	**D.**	opened fot

C. Usinf the words given in capitals in brackets to form a word that fits in the space and read the text. Consult a dictionary if required.

Part 3

The first decree for the third line was made in 1963, its (1) _____ (CONSTRUCT) started in 1970, and its first section was opened in 1976, (2) _____ (CONSIST) of six stations. Its southern (3) _____ (DIRECT) was complemented with five more stations in 1980, and the (4) _____ (NORTH) in 1981, 1984, and 1990 with nine stations, reaching its current length of 20 stations, 17 kilometres, the longest line in Budapest. Line 3 runs in a north-south direction (more exactly, from north-northeast to southeast).

In the ‘80s and ‘90s, the first line underwent major (5) _____ (CONSTRUCT). Of its 11 stations, eight are (6) _____ (ORIGIN), and three were added during reconstruction. The stations recall the time of the millennium, including the floor, the benches, the wooden window frames, and the lighting. Every station is a little museum as well, with photos and (7) _____ (INFORM). There is a Millennium Underground Museum in the Deák Ferenc Square concourse where many other artifacts from that time can be seen.

D. Put in the following words in each space in the text below.

to (*2)	in (*3)	by (*2)	e.g. for example

Part 4

Metro 4 (as of 2007, under construction) has a long history, reaching back (1) _____ 1972. (2) _____ the past decades, difficulties arose from the medicinal springs around its planned route ((3) _____ , Gellért Baths). There was a long debate over whether its construction would be safe, what part should be paid (4) _____ the government and the capital, whether it could be paid for from the Russian state debt towards Hungary, whether its route was appropriate, and whether it was needed, rather than, (5) _____, helping the conurbation’s growth and access with a connector line, and how long it should be made (6) _____ the first phase of construction. If it is finished (7) _____ 2010 (which is the best case), its history will cover 37 years, the longest time of all the metro lines (8) _____ Budapest.

3. Writing Skills

A. Write down a short composition about Kharkiv Underground using the following information.

Underground in Kharkiv

Lines and Stations	Name	Opened	Length	Stations
1	Kholodnohirsko-Zavodska Line	1975	17.3 km	13

2	Saltivska Line	1984	10.3 km	8
3	Oleksiivska Line	1995	7.9 km	7
	Total:		35.4km	28

23 Aug 1975	Kholodna Gora (formerly Ul. Sverdlova) – Moskovs'kyi prospekt	
23 Aug 1978	Moskovs'kyi prospekt – Proletars'ka	
11 Aug 1984	Istorychnyi Muzey – Barabashova	7.7 km
26 Oct 1986	Barabashova – Heroiv Pratsi	
06 May 1995	Metrobudivnykiv – Naukova	
21 Aug 2004	Naukova – 23rd Serpnia	2.6km

Number of escalators – 47
Number of depots – 2
The deepest station – Pushkinska
The station with the longest stage – Kievska – Academika Barabashova (2407m)
The station with the shortest stage – Atchitector Beketov – Derzprom (771m)

B. Put the following passages into the right order to make up a story about Kiev Underground.

_____ The construction of the second line began in the early 1970s and the first three stations were opened in 1976. It was Kurenivsko-Chervonoarmiyska Line what continued expanding. In 1982 it reached Obolon, the largest residential district, in the northern Kiev. At the same time the construction continued to the southwest of the city and new stations were added in 1981 and 1984.

_____ The third, Syretsko-Pecherska Line began to build in 1981. The first three station segment opened in 1989 in the centralpart of Kiev. Following a northwest-southeast axis, in 1991 it continued up to the left bank of the Dnieper and by 1992 crossed the river and continued into the rapidly developing Poznyaky and Kharkivsky residential districts which it reached in 1994. In mid late 1990s construction began on expansion to the Syrets district in the northwest direction with stations opening in 1996, 2000 and 2004. Some of the intermediate stations were deliberately left unfinished and opened later: Pecherska (1997) and Vyrlytsia (2006).

_____ After the Bolshevik victory in the Civil War, Kiev became a provincial city and no large scale proposals to improve the city were drawn. In 20 years all this changed when in 1934, the capital of the USSR was moved to Kiev. In 1936 the presidium of the Kiev Municipal Soviet analysed the first report by the Moscow Institute for Transport Engineering proposing an underground system for the reconstruction of the new capital.

_____ Following the terrible destruction suffered by the city in the war, a massive reconstruction was opened for the capital of the third largest city in the USSR. This time the Metro was in the plan and construction began in August 1949. Eleven years later the first 5.2 kilometre segment from the Vokzalna to Dnipro.

_____ Like all Metro systems in the former Soviet Union which are known for

their vivid and colourful decorations, Kiev's is no exception. The original stations of the first stage are elaborately decorated, showing the postwar Stalinist architecture blended with traditional Ukrainian motifs. However as the stations were built in a time when the richly decorated Stalinist feature was already seen as nothing but an extra, the stations of the second stage that opened in 1963 had an ascetic and strict appearance. Functionality became the most important factor in the new designs, and stations built at that time were almost identical save the design of tile patterns and pillar riveting material. Only in the 1970s did decorative architecture start to make a rapid recovery. The stations built from the 1980s onwards show more innovative design comparing with the stations in other cities in former USSR.

_____ Presently, there are 46 stations of which almost half are deep level and the rest sub-surface. The former comprise 20 stations, of which 15 are of pylon type, 3 are of column type, and 2 stations are wall-columned. Of the 20 sub-surface stations, 12 stations are of pillar-trispan type, two are side-platform pillar bi-spans, 5 more are single-vaults, and a further one is an asymmetrical double deck trispan. In addition, 6 stations are located above ground, of which four are surface level, and two are flyover. Most of the stations have large vestibules, some on surface level whilst others are underground interlinked with subways.

_____ Some of the older stations have undergone upgrades to lighting and renovation of some decorative material. After the declaration of Ukrainian independence following the breakup of the Soviet Union in 1991, some of the Soviet symbols originally incorporated into decor were adapted to modern times or removed altogether by altering architectural composition of those stations, making them lose some of their original splendour.

__1__. The Kiev Metro is the first rapid transit system in Ukraine and the third one built in the USSR (after Moscow and St. Petersburg). It has three lines of overall length 56.6 kilometres and 46 stations. One of the deepest stations in the world, Arsenalna at 102 metres, is found on the system. The metro follows a standard Soviet triangle three line, six radii layout that intersects in the centre where the stations are built very deep underground and could potentially double as bomb shelters.

_____ The story for a rapid transit system in Kiev originates back to 1916 when businessmen of the Russo-American trading corporation attempted to collect funds to sponsor construction of a metro in Kiev, which previously has been a pioneering city for Imperial Russian rapid transit, like opening of the first Russian tram system. After the downfall of the Tsarist government Hetman Skoropadsky was also much interested in building the system, but after the downfall of the Hetmanate in the autumn of 1918 Ukraine plunged into chaos of Civil War and the project was shelved for good.

_____ Those five stations formed the central part of what is today known as the Sviatoshynsko-Brovarska Line, which runs from the west to the east of the city. The line crossed the Dnieper river in 1965 across a newly constructed Metro Bridge and went east to the large residential areas being built on the left bank of the river, with subsequent extensions in 1968 and 1971. At the same time it extended to Kiev's westernmost residential areas of Sviatoshyn and Bilychi in three stages 1963, 1971 and 2003.

UNIT SIX. PARKS AND GARDENS

1. Reading Comprehension

Disneyland

Disneyland is an amusement park in Anaheim, California. When it opened in 1955, it was called ‘the happiest place on earth,’ and over 500 million people have visited it since then.

Disneyland was created by Walt Disney. He and his brother Roy ran Disney Studios in California and their animated films, with characters like Mickey Mouse and Donald Duck, were very popular. Many people wanted to visit the studio and have their picture taken with their favorite character.

Walt Disney came up with the idea of building an amusement park close to the studio, where adults and children could have fun together and get their picture taken with a Disney character. He wanted a place that would be fun, safe, and clean. Tivoli Gardens, an amusement park in Denmark, was one of his models for Disneyland.

At first, Disney planned to build just a small park, but his plans slowly grew into a large park, with rides, live entertainment, restaurants, and other attractions. He bought 160 acres of land in Anaheim and construction started on July 18, 1954. The park opened to the public on July 18, 1955. It cost $17 million to build.

The original park consisted of 5 ‘lands’ – Main Street USA, Adventureland, Frontierland, Fantasyland, and Tomorrowland. Three more were added – New Orleans Square (1966), Critter Country (1972), and Mickey’s Toontown (1993). Visitors use a steam train or one of three monorails to get around.

Disneyland was so successful that others were built. Walt Disney World opened in Orlando, Florida, in 1971, Disneyland Resort Paris in 1992, Tokyo Disneyland in 1983, and Hong Kong Disneyland in 2005.

In the 1990s, a vacation resort area was built around Disneyland to attract more people from farther away and to encourage them to stay longer.

Disneyland celebrated its 50th anniversary in 2005. Many of the oldest and most popular attractions, such as Space Mountain, the Jungle Cruise, and the Tiki Room, were restored for the anniversary.

1. Read the statements below. If the statement is true, write T beside the sentence. If it is false, write F. If it is false, correct the information.

1. The original Disneyland was built close to Disney Studios. ( )
2. Disney Studios produced Mickey Mouse films. ( )
3. It was Roy Disney’s idea to build Disneyland. ( )
4. The original Disneyland was modeled after an amusement park in Florida. ( )
5. It cost $500 million to build the first Disneyland. ( )

2. Practice asking and answering the following questions with your partner. Then write the answers in complete sentences.

1. What is Disneyland?
2. When and where the original Disneyland was built?

3. Where the other Disneylands are located?
4. Who created Disneyland?
5. What was the idea behind the building of Disneyland?
6. What was Disneyland called when it first opened?
7. How many different lands are there in Disneyland and how do tourists travel from one to another?
8. Where was the most recent Disneyland built?
9. Why was a vacation resort built around Disneyland in the 1990s?
10. What are some of the most popular attractions at Disneyland?

2. Vocabulary Exercises

A. Choose the word(s) with the closest meaning to the underlined words in the following sentences.

1. Many people wanted to visit the studio and have their picture taken with their favorite Disney character.
   A. study room **B.** place where films are made **C.** amusement park

2. Walt Disney came up with the idea of building an amusement park close to the studio.
   A. talked about **B.** first thought of **C.** borrowed

3. Tivoli Gardens, an amusement park in Denmark, was one of his models for Disneyland.
   A. examples to copy **B.** rides **C.** monorails

4. The original park consisted of five lands.
   A. ordinary **B.** very large **C.** first

5. In the 1990s, a vacation resort was built to encourage people to stay longer.
   A. amuse
   B. help make something happen; give support
   C. take a holiday

6. Many of the oldest and most popular attractions were restored for the anniversary.
   A. bought
   B. started again
   C. brought back to good condition

B. Match the words on the left with the correct meaning on the right.

1.	amusement	**A.**	liked by many people
2.	create	**B.**	building
3.	animated	**C.**	yearly return of the date of an event
4.	popular	**D.**	make, produce something new
5.	ride	**E.**	holiday place to visit and stay at

6.	attract	**F.**	having fun
7.	acre	**G.**	be made up of
8.	construction	**H.**	cartoon; giving life to drawings
9.	public	**I.**	get people's attention
10.	consist	**J.**	people
11.	resort	**K.**	measure of land
12.	anniversary	**L.**	kind of attraction at an amusement park; ex. rollercoaster, Ferris wheel, etc.

3. Writing Skills

Translate into English the following information about Shevchenko Garden in Kharkiv.

Сад Шевченко – городской парк в центре Харькова. Он распологается между Сумской и Клочковской улицами, площадью Свободы и Рымарской.

Сад был заложен на окраине города в 1804 –1805 годах Каразиным, основателем Харьковского университета. На верхней террасе расположен ландшафтный парк, на нижней – ботанический. С момента своего основания сад назывался Университетским. В 1808 году в саду была построена астрономическая обсерватория. В 1896 году на западной оконечности парка был открыт старейший на Украине, третий по возрасту в Российской империи Харьковский зоопарк.

В 30-е годы XX века была проведена реконструкция парка. Её проводил архитектор В. П. Ширшов, профессор А. И. Колесников и дендролог К. Д. Кобезский. Были построены новые аллеи, высажены деревья и кустарники, появился фонтан. После открытия памятника Тарасу Григорьевичу Шевченко в 1935 году сад был переименован в честь поэта.

Во время Великой Отечественной войны парк сильно пострадал. Было уничтожено около 60% растений парка.

На протяжении 1945 – 1946 годов проводилась реконструкция и восстановление парка архитектором А. С. Маяк и дендрологами И. Б. Меликенцевым, А. Д. Ганаевой. В рамках подготовки к 300-летию города в 1955 году в западной части сада была построена каскадная лестница архитектором А. С. Маяк и инженером Ф. И. Савускан. По каскаду стекал фонтан, а с верхней смотровой площадки открывался вид на долину реки Лопань. В 1963 году в парке построили киноконцертный зал «Украина» на 1750 зрителей (архитекторы В. С. Васильев, Ю. А. Плаксиев, В. А. Реусов, инженер Л. Б. Фридган). В 1967 году на центральной аллее построили фонтан по проекту архитектора Б. Г. Клейна, а с 1977 года он стал свето-музыкальным. На протяжении 1970 – 1990 годов в южной части сада строилось новое здание Харьковского государственного украинского академического театра оперы и балета имени Н. Лысенко в постмодернистском стиле.

UNIT SEVEN. BRIDGES

1. Reading Compehension

TEXT 1. The Golden Gate Bridge

The Golden Gate Bridge is one of the symbols of the United States of America. It is located in San Francisco, California, and spans the Golden Gate Strait – a mile-wide strait that connects the Pacific Ocean to the San Francisco Bay.

It is surely one of the most beautiful bridges in the world, and also one of the tallest (the height of a bridge is the height of the towers). The bridge as it is today was designed by architects Irving and Gertrude Morrow. However their art deco project was not the first Golden Gate Bridge.

The original plans for the bridge were drawn in 1916, but they were of a very complicated and ugly structure, certainly not something America could ever be proud of. The bridge was a true experiment in its time; such a long suspension bridge had never been tried before. It had the highest towers, the thickest cables and the largest underwater foundations ever built. The foundations were a real problem, because they had to be cast in a depth of more than 100 feet. Extreme depth wasn't the sole problem. The real challenge lay in the sinking of the piers in the violent waves of the open sea, which was thought to be almost impossible.

The construction began in 1933, and was finished in 1937, when the bridge opened to pedestrians. (It was opened to cars one year later.) The bridge was finished ahead of schedule and cost much less than was estimated.

Today, the Golden Gate Bridge has a main span of 4,200 feet (almost a mile) and a total length of 8,981 feet. The towers supporting the huge cables rise 746 feet above the water. Each steel cable is 7,650 feet long and has a diameter of 36 inches.

'International orange' is the color the bridge has always been painted. The architects chose it because it 'blends well with the span's natural setting'. However, if the Navy had had its way, the bridge would have been painted black with yellow stripes – in favor of greater visibility for passing ships.

There are fog horns to let passing ships know where the bridge is, and aircraft beacons on the tops of the towers to prevent planes from crashing into them.

The Golden Gate Bridge is the first sight for many people approaching the United States by boat. It is almost the West Coast's 'Statue of Liberty', and is something everyone should visit at least once.

Choose the correct answer.

1. The Golden Gate Bridge _____ .
   A. spans the San Francisco Bay
   B. is the best-known symbol of the United States
   C. spans the Golden Gate Strait
   D. is painted gold and has a gold-plated gate at each end

2. The first plans of the bridge _____ .
   A. were designed by Irving and Gertrude Morrow in 1916

B. were designed by Irving Morrow but were too complicated
C. were something America could be proud of
D. were not designed in art deco style

3. The construction of the foundations was very complicated because _____ .
A. it was thought to be almost impossible
B. the piers had to be sunk in the open sea through of violent waves
C. they had to be the largest ones ever built
D. they had to be cast by teams of divers, which was very expensive

4. Which one is true?
A. The construction of the Golden Gate Bridge took four years.
B. The bridge was opened to car traffic in 1939.
C. People were allowed to cross the bridge in 1939.
D. The construction of the bridge began exactly seventeen years after the first plans were made.

5. Put the right pairs together:

A. 7,650 feet	**E.** length of bridge
B. 3 feet	**F.** length of main span
C. 4,200 feet	**G.** diameter of cable
D. 8,981 feet	**H.** length of cable

6. What kind of safety precaution concerning marine traffic is used today, and what kind was proposed by the Navy?

TEXT 2. The World's Longest Bridge

The Akashi Kaiyko Bridge in southern Japan is the world's longest bridge. The Akashi Kaiyko Bridge spans the Akashi Strait, connecting Awaji Island to Kobe, an important industrial center. The bridge has a span of 5973 feet (1991 meters), making it over 25% longer than its nearest competition: the Humber Bridge in England. Strangely, there may be longer bridges in the world, but the Guinness Book of World Records measures the longest bridges according to their record-breaking spans.

The Akashi Kaiyko Bridge is a suspension bridge. This means that the roadway is *suspended* from pillars by cables.

The concrete pillars have to be tall enough to support the whole weight of the bridge. The pillars on the Akashi Kaiyko Bridge are 900 feet tall. These pillars had to be built to withstand not only huge waves but also high-speed winds, and possibly even violent earthquakes, which are not uncommon in the area. The bridge has survived one earthquake already: its span was extended by more than 3 feet by the Kobe earthquake of 1995.

The cables weigh 50,000 tons and have a diameter of almost four feet each. Each cable contains 290 hexagonal strands; each strand is composed of 127 steel wires. The total length of the wire used is more than 200,000 miles, enough to circle the Earth 7.5 times!

The first plans to connect Kobe to Naruto via Awaji Island were voiced in 1955, but it took the government thirty years to decide to really build the bridge.

The next three years were spent surveying the site and construction commenced in 1988. In designing the bridge, special consideration was given to its effect on the surroundings, great emphasis was placed on a ‘pleasing balance between light and shade’ and also on the choice of the perfect color.

The construction of the bridge was a very complicated and technologically draining process, which took ten years to complete. Casting concrete in 300 feet of water, installing special pilot ropes over the strait by helicopter, and finally stretching the gigantic steel cables surely wasn’t an easy job. Ten years after construction commenced in 1988, the bridge was finished and the six-lane highway finally opened to traffi**C.** The bridge has made the transportation from island to island much easier, so in addition to breaking a record, the Akashi Kaiyko Bridge achieves the main goal of a bridge: to connect two places.

Choose the correct answer.

1. The longest bridge in the world _____ .
   A. is located in England
   B. has a span of 1991 feet
   C. lies in southern Japan
   D. is not listed in the Guinness Book of World Records

2. The pillars _____ .
   A. are built of steel
   B. have already withstood two earthquakes
   C. are supported by steel cables
   D. are built to survive high-velocity winds

3. The article states that _____ .
   A. each cable is composed of 127 steel wires
   B. cables are made of steel
   C. the Earth is round
   D. the strands are round

4. During construction _____ .
   A. the Earth was circled 7.5 times with 200,000 miles of wire
   B. the steel cables were installed by helicopter
   C. an earthquake took place
   D. concrete was usually cast in 30 feet of water

5. Which of the following sentences is false?
   A. The government decided to build the bridge in 1985.
   B. Surveying the construction site took three years.
   C. The bridge was opened to traffic in 1988.
   D. The highway has six lanes.

6. Which possible dangers to the bridge were mentioned in the article?

A. waves
B. typhoons
C. traffic jams
D. terrorist attacks

TEXT 3. Vasco da Gama Bridge

'I'd like to talk about the cable-stayed bridge, which is a relatively recent type of bridge design. It's characterised by large upright supports, which transmit the load into the ground, and steel cables, which are stretched between the supports and the deck, and give a very elegant appearance to the bridge. A good example of a cable-stayed bridge is the Vasco da Gama Bridge, near Lisbon in Portugal. It's the longest bridge in Europe, with a total length of 17,200 metres, and spans the Tagus River. As an engineering project, the bridge was a great success. It took only eighteen months to construct and was completed in 1998, slightly ahead of schedule.

The technical details of the Vasco da Gama Bridge are impressive. As I said, it's a cable-stayed bridge, using a fan arrangement of the cables, and H-pylons. The pylons are made of reinforced concrete and each pylon is 155 metres high. There are 192 cables in total and the main span of the bridge is 450 metres long. As Lisbon suffered a severe earthquake in 1774, the bridge has been designed to ensure minimum seismic damage should another earthquake occur. The bridge can withstand wind speeds of 250 kilometres an hour and its design life expectancy is 120 years. The length of the bridge meant that engineers had to take the earth's curvature into account when siting the supports.

The Vasco da Gama Bridge is a motorway bridge and allows traffic travelling between the north and south of Portugal to bypass Lisbon, cutting journey times and reducing congestion in Lisbon. Traffic travelling north pays a toll for the fifteen-minute drive across the bridge, but there's no toll for southbound traffic. The bridge was built by an international consortium and financed by European Union funds and the private sector.'

1. Read an engineer's report about the Vasco da Gama bridge in Portugal and choose the correct answer.

1. The Vasco da Gama bridge _____ .

A. is the longest bridge in the world
B. goes over the Tagus River
C. took longer to build than expected

2. The bridge has been designed to withstand _____ .

A. earthquakes **B.** tornadoes **C.** tsunamis

3. The bridge allows traffic to _____ .

A. go into the centre of Lisbon
B. avoid going into Lisbon
C. avoid going on toll roads

2. Correct eight notes in the notes about the bridge.

The Vasco de Gama Bridge

1. total length 16,200 metres _____
2. completed in 1988 _____
3. pylons made of steel _____
4. total of 450 cables _____
5. main span 155 metres long _____
6. expect to last 250 years _____
7. southbound traffic has to pay a toll _____
8. takes 10 minutes to drive across bridge _____

3. GENERAL INFORMATION ABOUT BRIDGES. Decided whether the following statements true or false.

1. A bridge is a a structure built over a river, road etc that allows people or vehicles to cross from one side to the other. ( )
2. A bridge is a structure built to span a gorge, valley, road, railroad track, river, body of water, or any other physical obstacle. ( )
3. A bridge is a structure that spans and provides a passage over a road, railway, river, or some other obstacle. ( )
4. A bridge is designed for trains, pedestrian or road traffic, a pipeline or waterway for water transport or barge traffi**c.** ( )
5. In some cases there may be restrictions in use. For example, it may be a bridge carrying a highway and forbidden for pedestrians and bicycles, or a pedestrian bridge, possibly also for bicycles. ( )

TEXT 4. Ice Bridge Ruptures in Antarctic

An ice bridge linking a shelf of ice the size of Jamaica to two islands in Antarctica has snapped.

Scientists say the collapse could mean the Wilkins Ice Shelf is on the brink of breaking away, and provides further evidence of rapid change in the region.

Sited on the western side of the Antarctic Peninsula, the Wilkins shelf has been retreating since the 1990s.

Researchers regarded the ice bridge as an important barrier, holding the remnant shelf structure in place.

Its removal will allow ice to move more freely between Charcot and Latady islands, into the open ocean.

European Space Agency satellite pictures had indicated last week that cracks were starting to appear in the bridge. Newly created icebergs were seen to be floating in the sea on the western side of the peninsula, which juts up from the continent towards South America’s southern tip.

Professor David Vaughan is a glaciologist with the British Antarctic Survey who planted a GPS tracker on the ice bridge in January to monitor its movement.

He said the breaking of the bridge had been expected for some weeks and much of the ice shelf behind was likely to follow.

‘We know that the Wilkins Ice Shelf has been completely or very stable since the 1930s and then it started to retreat in the late 1990s. But we suspect that it’s been stable for a very much longer period than that,’ he told BBC News.

‘The fact that it’s retreating and now has lost connection with one of its islands is really a strong indication that the warming on the Antarctic is having an effect on yet another ice shelf.’

While the break-up will have no direct impact on sea level because the ice is floating, it heightens concerns over the impact of climate change on this part of Antarctica.

Over the past 50 years, the peninsula has been one of the fastest warming places on the planet.

Many of its ice shelves have retreated in that time and six of them have collapsed completely (Prince Gustav Channel, Larsen Inlet, Larsen A, Larsen B, Wordie, Muller and the Jones Ice Shelf).

Separate research shows that when ice shelves are removed, the glaciers and landed ice behind them start to move towards the ocean more rapidly. It is this ice which can raise sea levels, but by how much is a matter of ongoing scientific debate.

Such acceleration effects were not included by the UN’s Intergovernmental Panel on Climate Change (IPCC) when it made its latest projections on likely future sea level rise. Its 2007 assessment said ice dynamics were poorly understood.

Answer the following questions below.

1. When did scientists start to observe significant changes to the Wilkins Ice Shelf?
2. What is the expected consequence of the shelf breaking off?
3. How long had the Wilkins Shelf been stable for?
4. How has climate change noticeably affected the Antartic over the last 50 years?
5. What is the difficulty in calculating the effect of melting ice on the sea level?

2. Vocabulary Focus

A. Match the words and expressions with their meanings.

1.	upright	**A.**	vertical
2.	load	**B.**	area of bridge between two supports
3.	deck	**C.**	thick rope made of twisted metal
4.	pylon	**D.**	part of the bridge that cars go along
5.	cable	**E.**	amount of money charged for crossing bridge
6.	span	**F.**	spreading out from a central point putting in a particular place
7.	fan affangement	**G.**	amount of weight supported
8.	toll	**H.**	tall vertical support
9.	siting	**I.**	putting in a particular place

1.	beam	**A.**	a rigid, usually horizontal, structural element
2.	pier	**B.**	a vertical supporting structure, such as a pillar

3.	span (n.)	**C.**	the distance a bridge extends between two supports;
4.	span (v.)	**D.**	to traverse a specific distance
5.	steel	**E.**	an alloy of iron and carbon that is hard, strong, and malleable
6.	rigid	**F.**	ability to resist deformation when subjected to a load;
7.	strong	**G.**	ability to carry a realistic load;
8.	concrete	**H.**	a mixture of water, sand, small stones, and a gray powder called cement
9.	truss	**I.**	a rigid frame composed of short, straight pieces joined to form a series of triangles or other stable shapes
10.	bend (v.)	**J.**	to curve; bending occurs when a straight material becomes curved; one side squeezes together in compression, and the other side stretches apart in tension

B. Match types of bridge and its meaning in Russian.

1.	beam bridge	**A.**	балочный мост
2.	cable stayed bridge	**B.**	вантовый мост
3.	composite bridge	**C.**	висячий мост
4.	humpback bridge	**D.**	висячий мост на проволочных канатах, тросах
5.	pedestrian bridge	**E.**	горбатый мост
6.	pile bridge	**F.**	железобетонный арочный мост
7.	pontoon bridge	**G.**	мост на свайных опорах
8.	steel concrete arch bridge	**H.**	пешеходный мост
9.	suspension bridge	**I.**	понтонный мост
10.	swing bridge	**J.**	разводной мост
11.	wire suspension bridge	**K.**	сталежелезобетонный мост

C. Make up sentences matching the information correctly.

1.	Humpback bridge	**A.**	a bridge that can be pulled up for tall ships to go under it.
2.	Pontoon bridge is	**B.**	a bridge that has no supports under it, but is hung from strong steel ropes fixed to towers.
3.	Suspension bridge	**C.**	a floating bridge which is supported by several pontoons.
4.	Swing bridge	**D.**	a short bridge with a steep slope on each side.

3. Vocabulary Exercises

Put the words into the gaps in the text.

Brooklyn Bridge

Location: Manhattan and Brooklyn, New York, USA

Completion Date: 1883
Cost: $18 million
Length: 3,460 feet
Type: Suspension
Purpose: Roadway
Materials: Steel, granite
Longest Single Span: 1,595 feet
Engineer(s):John A. Roebling, Washington A. Roebling

Considered a brilliant feat of 19th-century (1) _____ , the Brooklyn Bridge was a bridge of many firsts. It was the first to use steel for its cable wire. It was the first bridge to use explosives in a dangerous underwater device called a (2) _____ . At the time it was built, the 3,460-(3) _____ Brooklyn Bridge was also crowned the longest (4) _____ in the world.	caisson engineering foot suspension bridge
But the Brooklyn Bridge was plagued with its share of problems. Before construction even began, the bridge's (5) _____, John A. Roebling, died from tetanus. The project was (6) _____ and seen to its completion by his son, Washington Roebling. Three years later, Roebling developed a crippling illness called caisson's disease, known today as 'the bends'. Bedridden but determined to stay in charge, Roebling used a telescope to keep watch over the bridge's (7) _____. He dictated instructions to his wife, Emily, who passed on his orders to the workers. During this time, an unexpected blast wrecked one caisson, a fire damaged another, and a (8) _____ snapped from its anchorage and (9) _____ into the river.	cable chief engineer crashed progress taken over
Despite these problems, (10) _____ continued at a feverish pace. By 1883, 14 years after it began, Roebling successfully guided the (11) _____ of one of the most famous bridges in the world – without ever leaving his apartment.	completion construction

4. Writing Skills

Translate into English the following information about some unusual bridges in the world.

10 необычных мостов со всего мира

Многие мосты являются выдающимися памятниками зодчества и инженерного искусства, которые удивляют не только своими масштабами и красотой, но и своеобразностью архитектуры.

Мост «Волны Хендерсона» (Henderson Waves Bridge) самый высокий пешеходный мост в Сингапуре. Это 9-километровое сооружение соединяет Mount Faber Park с Telok Blangah Hill Park. Мост создан из тысячи деревянных досок и современных строительных материалов, создавая впечатление «змеи».

«Мост – остров» (Aiola Island Bridge) – мост, соединяющий два берега реки Мур в Граце (Австрия), был построен в 2003-м году и своим появлением обязан архитектору из Нью-Йорка Вито Аккончи. Вернее, это даже не просто мост, а мост с «островом» посередине реки, отсюда и название – Aiola Island. На этом причудливом «острове» располагается модный бар и кофейня, а также площадка для желающих позагорать. Ночью же всё это очень красиво подсвечивается и создает неповторимую атмосферу.

«Небесный мост» (Langkawi Sky Bridge) – одно из самых высотных мостовых сооружений в мире. Находится в Малайзии на высоте 700 метров над уровнем моря, протяженность – 125 метров через горы. Удивительным является то, что мост держится всего на одной колонне. А стабилизируется системой тросов, закрепленных на соседних скалах. С моста открываются потрясающие виды гористой части острова и побережья. Так как мост изогнут, то есть точка, где создается иллюзия абсолютно свободного парения над пропастью внизу. На такой высоте и вправду можно ощутить себя птицей высокого полета.

Магдебургский водный мост (Magdeburg Water Bridge) распологается в Германии, этот 918-метровый мост – акведук, соединяет два важных канала: Эльба-Хафель и Среднегерманский канал, через который осуществляется сообщение с индустриальным районом — долиной Рура. Магдебургский мост является самым большим водным мостом в Европе. Строительство его началось в 1997 году и было завершено в октябре 2003 года. На этот судоходный мост было затрачено около полумиллиарда евро, 68 000 м³ бетона и 24 000 т стали.

Мост «Око Тяньцзиня» (Tianjin Eye Bridge) по реке Хэйхэ в городе Тяньцзине (Китай) может похвастаться гигантским колесом обозрения. Высота его составляет 120 метров, что приравнивается к 35 этажам. Так что любой желающий может полюбоваться видами города на различных высотах.

Мост «Октавио Фриас де Оливейра» (Octavio Frias de Oliveira Bridge) расположен в Сан-Паулу, Бразилия. Мост необычен из-за своей формы, подобной букве «Х». Высота этой крестообразной конструкции – 137,16 метра. Мост оборудован светодиодным освещением для захватывающих вечерних шоу.

«Мост – лестница» (Staircase Bridge) – это лестница, которая одновременно является и мостом. Швейцарские проектировщики Jürg Conzett и Rolf Bachofner сочли, что это лучший способ перебраться через ущелье Traversinertobel в Швейцарии, потому как единственные безопасные для крепления точки расположены на разных уровнях, и обычный мост создавал бы ряд проблем. Лестница охватывает расстояние 56 метров и для подвесной конструкции выглядит весьма безопасной и удобной.

«Мост – фонтан» (Banpo Fountain Bridge). Корейские архитекторы тоже решили удивить жителей и гостей своей столицы Сеула необычным мостом, который, кроме основной функции пересекать реку Хан, выполняет еще и функцию фонтана. Уникальный архитектурный шедевр называется «Мост – фонтан», и он выглядел бы как самый обычный мост, если бы не водяные завесы по бокам. Особенно красиво все это выглядит ночью, когда зажигаются разноцветные огни и подсвечивают изнутри водяные струи. Почти 10 тысяч

«носиков.2, через которые, в общей сложности, проходит в день до 190 тонн воды. Это колоссальная работа, которой невозможно не восхищаться.

«Мост – питон» (Python Bridge), красивый змееподобный мост расположен в Восточной гавани Амстердама.

«Скручивающийся мост» (Rolling Bridge). В Петербурге мосты над Невой разводят, а вот в Лондоне появился инновационный мост, который скручивается. Длиной 12 метров, этот «ролл» состоит из 8 секций, сделанных из дерева и стали. Чтобы пропускать по каналу различный водный транспорт, мост поднимается и скручивается, превращаясь в большое колесо. Разработан дизайнером Thomas Heatherwick. Это один из примеров современной архитектуры, являющийся частью объединенной системы каналов столицы Англии.

WHAT IS A SUMMARY?

It is a short statement that gives the main information about something, without giving all the details.

ARTICLE	IMPORTANT DETAILS
Where and How to Cut Your Losses Half the skull in getting ahead on the career front is knowing when to move on. In everyone's life there comes a moment when they should make the break – the world is full if has-beens who, perhaps, just didn't have the courage to take a chance when that chance came. It pays to constantly reassess where you stand. A good stock question to ask yourself is 'Where am I going to be this time next year, if I stay in the same job?' Each career has a different kind of time-scale. The sale scene moves fast – you tent to make your money in the early years, then move on to management before you are too old and too tired to continue with the foot-in-the-door technique and the patter. The same thing goes, to a certain extent, for advertising. But other careers move at a different pace – to become head curator in a museum, for instance, or head librarian, may take years.	IMPORTANT TO KNOW WHEN TO CHANGE JOB MANY MISS THE RIGHT MOMENT TRY TO CONCEDER YOUR POSITION A YEAR AHEAD SOME CAREERS&JOBS MOVE SLOWLY, SOME FAST
Summary In this article on successful careers it says that it's important to know when to change jobs. Many people miss the right moment: so you should always think about where you are now, and where you'll be in a year. Some jobs, though, move slowly, while others move quickly – careers have different time-scales.	

СИНТАКСИЧНІ СТРУКРУРИ, ЯКІ ВИКОРИСТОВУЮТЬСЯ В АНОТАЦІЇ

СТРУКТУРА	ПРИКЛАДИ
1. Пасивний залог з певними дієсловами: **to be concerned with, to be reported with, to be likely, to be based, to have been studied, to be observed, to be discussed, to be applied, to be given** тощо.	1. а) **Подана** нова класифікація деяких видів. – A new classification of some species **is given**. б) **Вивчена** структура різноманітних субстанцій. – The structure of various substances **has been studied.** в) **Викладені** основні принципи. – The main principles **were discussed**.
2. Безособові речення з присудком у пасивному залозі: **it is said, it is reported, it is assumed, it is believed, it is considered, it is expected, it is estimated, it is found, it is supposed, it is understood** тощо.	2. а) **Показано**, що цифровий фотоапарат має значні переваги у певних відношеннях. – **It is shown** that digital camera offers a significant advantage in come respects. б) **Припускається**, що комп'ю-тер має особливе значення для підвищення роботи. – **It has been concluded** that computer is of particular value in work.
3. Дієприкметниковий і герундіальний звороти. Дієприкметник, як правило, стоїть у функції постпозиційного означення: the results **obtained** – **отримані** результати, the problem **investigated** – проблема, **яка досліджується.**	3. а) **Отримані** результати підтверджують значення цього експерименту. – The results **obtained** confirm the importance of such an experiment. б) Вони намагались отримати філософський камінь **шляхом перегону** суміші. – They tried to make the philosopher's stone **by distilling** a mixture.
4. Препозиційні іменники у функції означення: **mass** struggle – **масова** боротьба, **time** dependence – залежність **від часу**.	**4. Показано, що залежність** від часу **впливає на результати експерименту. –It is shown that** time dependence **influences the results of the experiment.**
5. Сталі звороти типу: **it is interesting, it is noteworthy, as well as, that's why, that is, provided that, in order to, so that, in addition, apart from, in question, under consideration, it should be mentioned** тощо.	5. а) **Для спрощення** викладу введені діаграми. – Diagrams are introduced **in order to** simplify the discussion. б) **Крім того**, він легко отримує будь-яку форму. – **In addition**, it is easy to mold it into any shape.

6. Прислівники типу: **increasingly, readily, particularly, practically, notably, currently, consequently** тощо.	6. Ця величина отримана **тео-ретично**. – The value is derived **theoretically**.

НАЙБІЛЬШ ВЖИВАНІ КЛІШЕ ДЛЯ НАПИСАННЯ АНОТАЦІЇ:

КЛІШЕ, ЯКІ СТОСУЮТЬСЯ ЗАГАЛЬНОЇ ТЕМИ ТЕКСТУ	
1.У тексті розповідається про ...	1. The text deals with …
2. Стаття торкається проблем ...	The paper (article) is concerned with the problem … (centers the problem of the)
3. У цьому розділі розглядається важлива проблема ...	3. The chapter discusses (deals with) the important problem of …
4. У даній книзі (статті, праці) - подаються 2основні положення ... - опановується цікавий метод - розповідається про ... - формулюються завдання ...	4. In this paper - the main principles of … are given. - an interesting method of … is suggested. - the paper dwells upon … the problem of … are started.
5. Стаття (праця, книга) - має назву ... - про ... - широко розкриває проблему ... - написана на тему ... - присвячена наступним питанням ... - торкається економічних проблем ... - несе інформацію про ... - інформує читача ...	5. The paper - is headlined (is entitled) - is about … - widely covers the problem of … - deals with - is devoted to the problem of … - touches upon economic issues … - carries information on … - informs the reader of …
6. Назва статті ...	6. The headline (heading, title) of the article is …
7. Автор статті ...	7. The author of the article is …
8. Стаття написана ...	8. The article is written by …
9. Стаття надрукована …	9. The article is published (printed)…
10. У статті (праці, книзі) - розповідається про те, що … - ставиться питання про ... - описується ...	10. The paper - deals with (concerns) … - poses the problem of … - describes …
11. Серед інших проблем стаття підіймає питання ...	11. Among the other problem the paper raises the problem …
КЛІШЕ, ЯКІ ВИЯВЛЯЮТЬ ГОЛОВНУ ДУМКУ, ІДЕЮ ТЕКСТУ	
1. Автор підкреслює думку про те, що ...	1. The author emphasizes the idea (that)…

2. Головна думка тексту у тому, що …	2. The main idea (point, keynote) of the text is (that) …
3. Мета статті - показати ... - подати читачу інформацію про ...	3. The aim (purpose, objective, goal) of the article is - to show … - to give the reader information on …
4. Автор вважає, що ...	4. The author believes (that) …
5. Автор починає з того, що повідомляє читачу ...	5. The author starts by telling the reader …
6. Автор інформує читача про ...	6. The author inform the reader of …
7. Автор подає деякі факти, які стосуються ...	7. The author gives some facts (data) concerning …
8. Автор звертає увагу читача на те, що ...	8. The author draws the reader's attention to the fact that …
9. Він вказує на те, що ...	9. The author (he) points out (that) …
10. Автор - концентрує увагу на ... - стверджує, що ... - підкреслює... - виступає проти ... - думає ... - характеризує ... - показує ... - докладно зупиняється на ... - надає особливого значення ... - аналізує ... - знайомить ... - пояснює ... - описує ... - презентує ...	10. The author - concentrates on … - states that … - stresses … - comes against … - thinks … - characterizes … - introduces… - dwells on … - emphasizes … - analyses … - acquaints … - explains … - describes … - presents …
11. У своїй праці автор - доводить, що ... - встановлює, що ... - демонструє, що ... - підтверджує ідею, що ...	11. In his work (paper) the author - proves that … - finds out that … - shows that … - supports the idea of …
12. Автор виявляє - свою точку зору - сумніви у ...	12. The author expresses - his point of view - his doubts (in)
13. Автор вносить великий вклад …	13. The author makes a great contribution to … (The author contributed greatly to)

14. Автор пропонує - оригінальну гіпотезу про - цікаві міркування про ...	14. The author suggests - a peculiar hypothesis of … - some interesting notations on …
15. Автор висуває - нову гіпотезу - пропозицію - основні принципи ...	15. The author puts forward - the new hypothesis of (on) - suggestion - the basic principles of (on)
16. Автор подає - вичерпний науковий аналіз … - вагомі докази … - виразний виклад основних положень … - наукове обґрунтування … - чітке визначення закону … - точну характеристику метода … - докладний аналіз закономірностей …	16. The author gives - a comprehensive analysis of … - sound proofs - cleancut presentation of the basic principles of … - well-founded explanations - well-formulated statement of the law of … - precise characteristic of the method of … - detailed analysis of the basic regularities of …
17. Автор вивчає - основні закони - деякі особливості - причини виникнення - складні процеси розвитку - різні способи	17. The author investigates - the basic law - some features (peculiarities) of … - the causes of … - complex processes of development of … - various ways …
18. Автор досліджує - питання про вплив ... на .... - залежність ... від ... - проблему взаємодії ... з ...	18. The author investigates - the problem of … effect on - dependence of … upon - the problem of … interaction
19. Автор розробляє - новий промисловий метод отримання - більш досконалу методику дослідження - нову систему (техніку) проведення експерименту	19. The author works out (develops) - the new commercial (large scale) method of obtaining - improved method of investigation (investigation method) - new experimental technique (procedure)
КЛІШЕ, ЯКІ ПОВЯЗАНІ З ВИСНОВКАМИ, ДО ЯКИХ АВТОР ПРИВОДИТЬ ЧИТАЧА	
1. Автор приходить до висновку, що ...	1. The author comes to the conclusion that …
2. Прочитавши статтю ми переконуємося, що ...	2. Upon reading the paper, one realizes that …

3. У висновках розповідається про те, що ...	3. In conclusion the paper point out that …
4. У статті (праці, книзі) - подається короткий огляд - вміщуються цікаві відомості - можна знайти цікаві факти про ... - подається короткий огляд матеріалу з цього питання - розглядаються актуальні питання	4. The paper - surveys briefly - presents some interesting facts concerning - presents some interesting facts about - reviews the literature to the problem - concerns the most important problem of …
5. У статті автор - ставить - торкається - висуває - аналізує - вирішує - викладає наступні питання	5. The author of the paper - poses - touches upon - puts forward - analyses - tries to solve - states the following problems
6. Відповідно до тексту ...	6. According to the text …
7. На думку автора ..	7. In the author's opinion …
8. На завершення ...	8. In conclusion …
КЛІШЕ, ЯКІ ДОПОМАГАЮТЬ ВИРАЗИТИ ВЛАСНУ ОЦІНКУ ПРОЧИТАНОГО	
1. Відомо як факт, що ...	1. It is known as a fact that …
2. Не може бути сумніву, що ...	2. There can be no doubt that …
3. Можна припустити, що ...	3. It may be assumed that …
4. Звичайно вважається, що ..	4. It is generally believed that …
5. Зрозуміло, що ...	5. It is clear that …
6. Само собою зрозуміло, що ...	6. It goes without saying …
7. Нам не треба забувати, що ...	7. We shouldn't forget that …
8. Треба відмітити, що ...	8. It should be noted that …
9. Треба згадати, що ...	9. It must be mentioned that …
10. На мій погляд ...	10. In my opinion …
11. На мій погляд ...	11. To my mind …
12. Підсумовуючи ...	12. To sum it up …
13. Стисло ...	13. In summary …
14. В цілому ...	14. On the whole …
15. Проаналізував інформацію треба сказати ...	15. Having analyzed the information it is possible to say …
16. Беручи до уваги усі речі ми можемо зробити висновки ...	16. All thing considered we can come to the conclusion …

ВІДМІННОСТІ АНОТУВАННЯ ВІД РЕФЕРУВАННЯ

	АНОТУВАННЯ	РЕФЕРУВАННЯ
Мовні засоби	Високий ступінь абстрагування та узагальнення. Формулювання власними словами, використання кліше.	Цитування оригінального тексту. Майстерність у скороченні тексту першоджерела
Обсяг	До 500 друкованих знаків	2000 друкованих знаків 1/8, або 10 – 15% статті (першоджерела)
Структура	а) узагальнення викладу теми усього тексту; б) перелік (без розкриття) основних підтем; в) висновок.	а) формулювання головної думки; б) формулювання кожного питання , висновок до нього і необхідна низка доказів у їх логічній послідовності; в) висновки автора реферованого тексту.
Мета	Повідомлення про існування документа певного змісту і характеру.	Викладення змісту документа з характеристикою методів дослідження, з фактичними кінцевими підсумками роботи.

ЗРАЗОК АНОТАЦІЇ ТА РЕФЕРАТУ

РЕФЕРАТ (PRECIS)	АНОТАЦІЯ (SUMMARY)
A computer is counting machine. There are two kinds of computers: special-purpose and general-purpose computers. F computer can store the information in its memory until it is needed. The process of inputting data into a computer is via punched card reader or punched paper tape reader from magnetic tape. The advantages of a computer are its small size and weight, reliability, speed of operation and little power required for running it.	The text deals with computers. Types of computers and input data are described. Special emphasis is laid on the advantages of the computer.

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НАВЧАЛЬНЕ ВИДАННЯ

ЗБІРНИК ТЕКСТІВ І ЗАВДАНЬ З ДИСЦИПЛІНИ «ІНОЗЕМНА МОВА (ЗА ПРОФЕСІЙНИМ СПРЯМУВАННЯМ)» (англійська мова) (для практичної роботи студентів 2 курсу денної форми навчання напряму 6.060101 «Будівництво»).

Автор: Наталія Іванівна Видашенко

Відповідальний за випуск: І. О. Наумова

Редактор: М. З. Аляб'єв

План 2009, поз. 585М

Підп. до друку 08.01.10	Формат 60х84 1/16	Папір офісний
Друк на ризографі.	Умовн.-друк. арк. 6,6	Обл.- вид.арк. 7,1
Замовл. №	Тираж 50 прим.	

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