**МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ**

**МИКОЛАЇВСЬКИЙ НАЦІОНАЛЬНИЙ УНІВЕРСИТЕТ**

**ІМЕНІ В.О. СУХОМЛИНСЬКОГО**

**КАФЕДРА ІНОЗЕМНИХ МОВ**

**МЕТОДИЧНІ РЕКОМЕНДАЦІЇ**

**ДЛЯ САМОСТІЙНОЇ РОБОТИ З ДИСЦИПЛІНИ**

**"ІНОЗЕМНА МОВА (ЗА ПРОФЕСІЙНИМ СПРЯМУВАННЯМ)"**

**ДЛЯ СТУДЕНТІВ І-ІІ КУРСУ**

**МЕХАНІКО-МАТЕМАТИЧНОГО ФАКУЛЬТЕТУ**

**МИКОЛАЇВ – 2017**

|  |  |
| --- | --- |
|  | Друкується за рішенням вченої ради  Миколаївського національного університету  імені В.О. Сухомлинського  протокол №\_\_\_\_\_\_\_\_від\_\_\_\_\_\_\_\_ |

**Укладач:** Айзікова Л.В., викладач кафедри іноземних мов Миколаївського національного університету імені В.О. Сухомлинського

|  |  |
| --- | --- |
| **Рецензенти:** |  |
| **Заскалєта С. Г.** | доктор педагогічних наук,  доцент кафедри іноземних мов  Миколаївського національного  аграрного університету |
| **Остапчук Т. П.** | кандидат філологічних наук,  доцент кафедри англійської філології  Чорноморського національного університету  імені Петра Могили |
| **Т.І.Філіпп’єва** | кандидат педагогічних наук,  доцент кафедри англійської мови і літератури  Миколаївського національного університету  імені В.О.Сухомлинського |

Методичні рекомендації призначені студентам механіко-математичного фкультету, які вивчають іноземну мову (англійську) за професійним спрямуванням протягом І-ІІ семестрів, та розраховані супровід їхньої самостійної роботи.

Методичні рекомендації складаються з чотирьох частин: основного курсу самостійної роботи, комплексу вправ для систематизації граматичних навичок, граматичного довідника та термінологічного словника. Кожен блок курсу включає лексичні, граматичні вправи та вправи з розвитку комунікативних умінь. Базові і додаткові тексти уроків дібрані з урахуванням змісту спеціальних дисциплін, які вивчаються студентами протягом першого і другого року навчання.

**ЗМІСТ**

|  |  |
| --- | --- |
| **ОСНОВНИЙ КУРС** |  |
| *Module One.* **PHYSICS IN GENERAL** | 5 |
| *Module Two.* **COLOURS** | 21 |
| *Module Three.* **LIGHT** | 28 |
| **ГРАМАТИЧНІ ВПРАВИ** |  |
| The simple present tense | 42 |
| The simple past tense | 44 |
| The future simple tense | 47 |
| The present continuous tense | 48 |
| The simple present and the present continuous | 50 |
| The past continuous tense | 52 |
| The simple past and the past continuous | 53 |
| The future continuous and the future simple | 54 |
| The present perfect tense | 57 |
| The present perfect and the simple past | 58 |
| The future perfect tense | 59 |
| The present continuous tense as a future form | 61 |
| The *be going to* form | 62 |
| The present continuous and the *be going to* form | 63 |
| The present continuous and the future simple | 64 |
| Passive Voice | 66 |
| Indirect speech: statements | 67 |
| Indirect speech: questions | 69 |
| Indirect speech: commands, requests, advice | 70 |
| **ГРАМАТИЧНИЙ ДОВІДНИК** |  |
| Теперішній простий час | 72 |
| Минулий простий час | 74 |
| Майбутній простий час | 76 |
| Теперішній тривалий час | 78 |
| Минулий тривалий час | 82 |
| Майбутній тривалий час | 83 |
| Теперішній завершений час | 84 |
| Минулий завершений час | 86 |
| Майбутній завершений час | 88 |
| Теперішній перфектно-тривалий час | 89 |
| Минулий перфектно-тривалий час | 90 |
| Майбутній перфектно-тривалий час | 91 |
| Наказовий спосіб | 93 |
| Узгодження часів | 94 |
| Пряма і непряма мова | 95 |
| Модальні дієслова | 98 |
| **ГРАМАТИКА В ТАБЛИЦЯХ ТА СХЕМАХ** |  |
| Структура речення | 106 |
| Система часів | 107 |
| Артикль | 107 |
| Ступені порівняння прислівників і прикметників | 109 |
| Множина іменників | 110 |
| Числівник | 111 |
| Способи вираження майбутньої дії | 112 |
| *Література* | 113 |
| **КОРОТКИЙ ТЕКМІНОЛОГІЧНИЙ СЛОВНИК** | 114 |

**MODULE 1**

**MATHEMATICS IN EVERYDAY LIFE**

1. **Answer the following questions**

* What does mathematics deal with?
* What are its main subdivisions?
* What tools are used to do mathematics?

1. **The words below are key math terms. Translate them into Ukrainian and practice their pronunciation.**

|  |  |  |
| --- | --- | --- |
| number  to count  capital letters  complex algebraic geometric calculations  to add  addend  sum  plus  minus  greater than | to represent  symbol  number-sounds  number-symbols  Roman system of numbers  to make smaller  to take away  to diminish  to subtract  minuend  subtrahend  remainder  equal | difference  multiplicand  multiplier  product measures  distance  dividend  divisor  quotient  Adding  Subtraction  multiplication  division  whole numbers |

**3. Read the text.**

**HOW THE USE OF NUMBERS BEGAN**

Many thousands of years ago this was a world without numbers. Nobody missed them. Everyone knew just what belonged to him and what not. If a cow was missing, the owner knew it was gone, not by counting cows, but for the same reason your mother would know if you did not come home for dinner.

But some people acquired more and more property. They would count one cow, two cows, three cows; one vase, two vases, three vases; always one, two, three or more of something they owned or saw.

Primitive man knew only ten number-sounds. The reason was that he counted in the way a small child counts today, one by one, making use of his fingers. The needs and possessions of primitive man were few: he required no large numbers.

When he wished to express a number greater than ten he simply combined certain of the ten sounds connected with his fingers. Thus, if he wished to express "one more than ten" he said "one-ten" and so on.

The Romans used seven capital letters to represent numbers. They mixed them together to form many different combinations. The Roman system of numbers is based upon the letters, I, V, X, L, C, D and M.

Our present-day number-symbols are Hindu characters. It is important to notice that no symbols for zero occur in any of these early Hindu number systems. They contain symbols for numbers like twenty, forty, and so on. A symbol for zero had been invented in India. The invention of this symbol for zero was very important, because its use enabled the nine Hindu symbols 1, 2, 3, 4, 5, 6, 7, 8 and 9 to suffice for the representation of any number, no matter how great. The work of a zero is to keep the other nine symbols in their proper place.

How far we have advanced from the time of our ancestors! Today, using numbers, numerals and mathematics, man builds bridges, skyscrapers, flies off the earth like a bird, even measures the distance to the moon and the brightness of the light given off by the firefly. But just as important though not so exciting, is that he can tell the time, pay the grocer, count the runs in a baseball game and use the same numbers in many different ways in everyday life.

So you see, mathematics and numbers, from simple arithmetic to complex algebraic and geometric calculations, are important to life in our time.

**4. Answer the questions using the text:**

1. When did people begin to count?

2. What letters did the Romans use to represent numbers?

3. What is the origin of modern number-symbols?

4. For what purposes do we use numbers?

5. Why are mathematics and numbers important?

**5. Make up sentences of your own using the words and expressions given below:**

acquire, property, advance, measure, important, calculations, for the same reason, just as important, to make use of, in everyday life, in the same way, in a different way.

1. **Match the terms to their definitions.**

|  |  |
| --- | --- |
| 1. circle 2. cone 3. cube 4. decimal fractions 5. equation 6. formula 7. graph 8. maximum 9. metric system 10. minimum 11. octagon 12. parallel lines 13. positive number 14. radius 15. right angle 16. square 17. straight angle 18. symbol 19. symmetry 20. term 21. triangle 22. volume | 1. A system of weights and measures based on the decimal system. 2. A part of a whole expressed by using a decimal point. 3. The distance or straight line from the centre to the circumference of a circle. 4. An angle which contains 90°. 5. The greatest value of a quantity. 6. A statement showing the equality of two quantities. 7. A statement of a general rule expressed by means of letters and numbers. 8. A solid figure having a circular base and curved surface which comes to a point at the vertex. 9. A representation by means of a sign or a letter. 10. Lines that extend in the same direction and are the same distance apart no matter how far extended. 11. A rectangular solid with 6 equal square faces or, the product obtained by multiplying a number by itself three times. 12. A member of an expression. 13. A representation of relationships by means of lines, bars, circles or symbols. 14. A closed plane figure with three sides and three angles. 15. A plane figure containing 8 sides and 8 angles. 16. A closed plane curve all points of which are the same distance (called the radius) from a point within (called the centre). 17. The number of cubic units in a solid figure. 18. The correspondence of parts such as lines or points. 19. A rectangle all of whose sides are equal, or the product obtained by multiplying a number by itself two times. 20. A number whose value is greater than zero and which is sometimes preceded by plus sign. 21. An angle containing 180°. 22. The smallest value of a quantity. |

1. **Match the headings with the corresponding paragraph.**

**ARITHMETIC OPERATIONS**

* **Signs Of Operations Used In Arithmetic**
* **Adding**
* **Multiplying**
* **Subtracting**
* **Dividing**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The result of additions of numbers is called the sum or total of the numbers. The numbers to be added are called the addends. In adding a series of numbers, begin with the column at the right. If the sum of a column of digits is ten or larger, carry the tens digits and add it to the sum of the digits in the next column to the left. Careless mistakes are sometimes made because the work was not checked. It is always wise therefore to check your answer.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

In subtracting whole numbers, the number which is to be made smaller2, or diminished is called the minuend; the number "taken away" or subtracted is called subtrahend. The answer is the difference between the minuend and the subtrahend and it is called the remainder, or difference. In checking a subtraction example, add the remainder and the subtrahend. If your answer is correct, the result obtained by addition equals the minuend.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

In multiplication, the number by which you multiply is called the multiplier, the number being multiplied is called the multiplicand. The number resulting from the multiplication is called the product. Multiplication can be checked by interchanging the multiplier and multiplicand and multiplying again. Remember that the product of any number multiplied by zero is zero. The product of any number multiplied by one is the same number. The order in which numbers are multiplied does not change the product.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

In division, the number that is to be divided is called the dividend. The number by which the dividend is to be divided is called the divisor. The answer is called the quotient. The remainder is what is left over after the dividend has been divided into equal parts. If there is a remainder, it may be written over the divisor and expressed as a fraction in the quotient.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The signs most used in arithmetic to indicate operations with numbers are plus (+), minus (—), multiplication (х), and division ( : ) signs. When either of these is placed between any two numbers it indicates respectively that the sum, difference, product, or quotient of the two numbers is to be found. The equality sign (=) shows that any indicated operation or combination of numbers written before it (on the left) produces the result or number written after it.

**8. Answer the questions using the text:**

1. How is the result of addition called?

2. What do we do while adding a series of numbers?

3. Why do we sometimes make mistakes in adding numbers?

4. What is the result of subtracting whole numbers called?

5. How do we check a subtraction example?

6. What is the result of multiplication called?

7. What is the result of division called?

8. What are the most used signs in arithmetic?

9. What does each of them indicate?

10. What does the equality sign mean?

**9. Translate into English:**

Числа, які потрібно скласти, називаються доданками, а результат додавання, тобто число, отримане при додаванні, називається сумою.

Відніманням називається дія, за допомогою якої (by means of which) пo даній сумі і одному даному доданку відшукується інший доданок.

Число, яке множать, називається множене; число, на яке множать, називається множником. Результат дії, тобто число, отримане при множенні, називається добутком.

Число, яке ділять, називається діленим; число, на яке ділять, називається дільником; число, яке здобувається в результаті ділення, називається частка.

**10. Revise the arithmetic terms and solve the examples with the comments in English**

**Adding – addition**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| І доданок | + | ІІ доданок | = | сума |
| addend | + | addend | = | sum |
| 12 | plus | 15 | is | 27 |
| 63 |  | 7 |  | 70 |
| 51 |  | 8 |  | 59 |

**Subtracting –**

to make smaller – to take away

to di`minish to sub`tract

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| зменшуване | - | від’ємник | = | різниця |
| `minuend | - | `subtrahend | = | remainder  difference |
| 58 | minus | 14 | is | 44 |
| 30 |  | 20 |  | 10 |
| 321 |  | 123 |  | 198 |

**Multiplying – multiplication – to multiply by**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| І множник | **\*** | ІІ множник | **=** | добуток |
| multipli`cand | **\*** | `multiplier | **=** | product |
| 35 | multiplied by | 35 | are | 1225 |
| 42 | times | 6 | make | 252 |
| 34 |  | 0 |  | 0 |

**Division – dividing**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ділене | / | дільник | = | частка |
| dividend | / | divisor | = | quotient |
| 18 | divided by | 9 | is | 2 |
| 56 |  | 7 | equals | 8 |
| 42 |  | 6 |  | 7 |

9 <10 is less than, 67>56 is greater than

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 18+36:9 | 72-27:9 | 54:(6+3) | 54:6+3 | 63:9\*3 | 63+9\*3 |

# **11. Read the text “The Use of Mathematics in Everyday Life” by Linda Emma and add your own example to every section**

Even those suffering from math-related anxieties or phobias cannot escape its everyday presence in their lives. From home to school to work and places in-between, math is everywhere. Whether using measurements in a recipe, or deciding if half a tank of gas will make the destination, we all use math.

## **At Home**

Some people aren't even out of bed before encountering math. Setting an alarm and hitting snooze, they may quickly need to calculate the new time they will arise. Or they might step on a bathroom scale and decide that they’ll skip those extra calories at lunch. People on medication need to understand different dosages, whether in grams or milliliters. Recipes call for cups and teaspoons – all measurements, all math. And decorators need to know that the dimensions of their furnishings and rugs will match the area of their rooms.

|  |
| --- |
|  |
|  |
|  |

## **In Travel**

Travelers often consider their miles-per-gallon when fueling up for daily trips, but they might need to calculate anew when faced with obstructionist detours and consider the cost in kilometers, time and money. Air travelers need to know departure times and arrival schedules. They also need to know the weight of their luggage unless they want to risk some hefty baggage surcharges ['sɜːʧɑːʤ]. Once on board, they might enjoy some common aviation-related math such as speed, altitude and flying time.

|  |
| --- |
|  |
|  |
|  |

## **At School and Work**

Students can’t avoid math – most take it every day. However, even in history and English classes they may need to know a little math. Whether looking at time expanses of decades, centuries or eras or calculating how they’ll bring that B in English to an A, they’ll need some basic math skills. Jobs in business and finance may require sophisticated knowledge of how to read profit and earning statements or how to decipher graph analyses. However, even hourly earners will need to know if their working hours times their rate of pay accurately reflects their paychecks.

|  |
| --- |
|  |
|  |
|  |

## **At the Store**

Whether buying coffee or a car, basic principles of math are in play. Purchasing decisions require some understanding of budgets and the cost and affordability of items from groceries to houses. Short-term decisions may mean only needing to know cash-at-hand, but bigger purchases may require knowledge of interest rates and amortization charts. Finding a mortgage *(іпотека)* may be much different than choosing a place to have lunch, but they both cost money and require math.

|  |
| --- |
|  |
|  |
|  |

## **Pastimes**

Even off-time can be math time. Sport fans know a lot about statistics. And individual athletes, whether runners, bikers, sailors or hikers, often have their own ways of charting their progress, from time to mileage to elevation.

|  |
| --- |
|  |
|  |
|  |

**12. Solve these quantitative problems:**

Here you will find some problems which you have to solve. Example:

A student works in a factory during the holidays. He is paid a wage of 10 Euros an hour. He works 8 hours a day and 5 days a week. How much has he earned after four weeks of work?

(A) 800 Euros

1. 1,200 Euros
2. 1,600 Euros
3. 2,000 Euros

Answer:

(C) 1,600 Euros

How to reach the solution:

Daily wage = 10 Euros x 8 hours

Weekly wage = Daily wage x 5 days

Wage after 4 weeks = Weekly wage x 4 weeks

1. Chuck earns twice as much per hour as Susan. Becky earns as much as Chuck and Susan together. In total they earn 30 Euros an hour. How much does Susan earn an hour?

1. 8 Euros
2. 7 Euros  
   (C) 6 Euros

(D) 5 Euros

2. Six students want to buy a car together to go on a trip. Just before starting the trip, one of the students says he cannot go along. So each of the five remaining students has to pay 120 Euros more for the car. How much money do the students have to pay for the car in total?

1. 2,400 Euros
2. 3,000 Euros  
   (C) 3,600 Euros

(D) 4,200 Euros

3. 12 chickens lay 480 eggs in 20 days. How many days does it take 9 chickens to lay 360 eggs?

(A) 20

1. 30
2. 40
3. 60

4. An MP3 player still has 250 MB of free memory space (1 MB = 1,024 KB). Now 80 songs with an average of 640 KB each are to be stored on the player. How much memory space will still be free afterwards?

1. less than 200 MB
2. 200 MB
3. 210МВ
4. more than 210 MB

5. A businessman has 350 US dollars ($). At a German bank, he would like to exchange them for South African rands. For 100 *%* he receives 90 Euros; for 100 rands he has to pay 15 Euros. How many rands does he receive from the bank?

(A) 6,000 rands

(B) 2,100 rands

1. 1,500 rands
2. 1,050 rands

6. Tim gets 5,000 Euros. He takes them to a bank that pays him 4 % interest per year. How long will Tim have to wait until the 5,000 Euros have increased to 5,100 Euros including interest?

1. 4 months
2. 5 months  
   (C) 6 months

(D) longer than 6 months

7. In the month of June, Mr. M. paid 17 Euros to use the Internet. In that month, he was on the Internet for 720 minutes. Mr. M. has two free hours per month (= hours in which he can be on the Internet without having to pay) and a basic fee of 5 Euros (= a fee he has to pay every month). In the month of July, Mr. M. was on the Internet for 920 minutes. How much will Mr. M. have to pay for July?

(A) 21 Euros

1. 15 Euros
2. 22 Euros
3. 16 Euros

8. It takes a car 6 hours and 30 minutes to travel the 715 km from location X to location Z via location Y. The car leaves location X at 8.30 a.m. Location Y is 440 km from location X. If the car travels at a constant speed, when will it arrive at location Y?

(A) at 12.30 p.m.

1. at 12.40 p.m.
2. at 12.45 p.m.
3. later than 12.45 p.m.

9. 30 litres of 20-percent and 70 litres of 10-percent alcohol are mixed. How many percent of alcohol does the mixture contain?

(A) 12%

(B) 13%

1. 14%
2. 15%

10. In a city there are 1,500 households and one store. Youths live in 3/4 of these households. 4/5 of the households with youths are customers of the store. How many households with youths (from this city) are thus customers of the store?

(A) 900 households

(B) 975 households

1. 1,050 households
2. 1,200 households

11. A train travels from town X to town Y, which is located exactly west of X. Since a large lake is situated between X and Y, the train has to make a detour: first it travels from X 100 km exactly to the southwest, then 500 km exactly to the west and finally 100 km exactly to the northeast. How many kilometres to the west of X is town Y located?

(A) 400 kilometres

(B) 500 kilometres

1. 600 kilometres
2. 700 kilometres

12. The cost of cleaning a company's floor is calculated according to the area to be cleaned. The total area of 1,320 square metres costs 2,400 Euros to clean. What is the cost of cleaning a floor 110 square metres in size?

1. 240 Euros
2. 200 Euros
3. 180 Euros
4. 150 Euros

13. A pack of chewing gum costs 20 cents more than a bag of candy. Fifteen bags of candy cost exactly as much as ten packs of chewing gum. How much does a pack of chewing gum cost?

1. 60 cents
2. 50 cents
3. 40 cents
4. 25 cents

14. A bookshop sells books for an average price of 22 Euros per book. Of all the books sold, 20 percent are specialised books. Each specialised book costs 20 Euros. 60 percent of the books sold are textbooks. Each textbook costs 25 Euros. The shop earns its remaining income with novels. How much does a novel cost?

1. 12 Euros
2. 14 Euros
3. 15 Euros
4. 20 Euros

15. A plane travels between the towns A and B. It sometimes lands in C, which is located between A and B.

On day 1, the plane is en route for a total of 20 hours. It flies from A to B, back to A and then to В again. On each of the flights from A to В it stops in C; from В it travels back directly to A without a stopover.

On day 2, the plane travels back to A from В without a stopover. This takes five hours. The flight time from A to В and from В to A respectively is always the same, and the duration of the stopover in С is also always the same. How long is the stopover in C?

1. 1 hours
2. 1.5 hours
3. 2 hours
4. 2.5 hours

16. A volleyball team has won 50 of the 75 games it has played until now; it still has 45 games to play in this season. How many of these games does the team have to win if it wants to have won 60 % of all games when the season ends?

1. 25 games
2. 22 games
3. 20 games
4. 15 games

17. In a test series, the measuring value 1.60 mm occurs 50 times, the measuring value 1.55 mm 100 times and the measuring value 1.50 mm 150 times. What is the average measuring value?

1. 1.52 mm
2. 1.53 mm
3. 1.54 mm
4. 1.55 mm

18. A train travels at a constant speed from city A to city В in three hours. On the return trip from В to A, it travels 10 km/h slower than on the trip from A to B. The return trip takes the train 3.5 hours. How far is it from A to B?

(A) 70 km

1. 180 km
2. 210 km
3. 420 km

19. Two years ago, Jimmy threw a ball 4 m, Mimi threw it 5 m and Tim 3 m. Now all three are throwing again. The ratio (Jimmy : Mimi: Tim) is still the same. How far do all three throw the ball today (Jimmy : Mimi: Tim)?

1. 5:6:4
2. 8:7.5:4.5
3. 7:8:6
4. 6 : 7.5 : 4.5

20. A transport container is cubical-shaped and its edges have a length of 50 cm each. How many percent of its original volume will the container have if its edges are prolonged from 50 cm to 100 cm?

1. 100%
2. 200%
3. 400%
4. 800%

**MODULE 2**

**PHYSICS IN GENERAL**

1. **Answer the following questions**

* What does physics study?
* What are its main subdivisions?
* What branches of modern physics can you name?

1. **The words below are key physical terms. Translate them into Ukrainian and practice their pronunciation.**

|  |  |  |
| --- | --- | --- |
| space  matter  energy  motion  physics  classical physics | modern physics  mechanics  acoustics  optics  thermodynamics  electrostatics | electrodynamics  atomic and nuclear physics  physics of elementary particles  high-energy physics  quantum physics  theory of relativity |

**3. Read the description of physics from the free online encyclopedia** **Wikipedia.**

**PHYSICS AS A SCIENCE**

**Physics** is the natural science that involves the study of matter and its motion through space and time, along with related concepts such as energy and force.  More broadly, it is the general analysis of nature, conducted in order to understand how the universe behaves.

Physics is one of the oldest academic disciplines, perhaps the oldest through its inclusion of astronomy. Over the last two millennia, physics was a part of natura philosophy along with chemistry, certain branches of mathematics, and biology, but during the Scientific Revolution in the 17th century, the natural sciences emerged as unique research programs in their own right. Physics intersects with many interdisciplinary areas of research, such as biophysics and quantum chemistry, and the boundaries of physics are not rigidly defined. New ideas in physics often explain the fundamental mechanisms of other sciences while opening new avenues of research in areas such as mathematics and philosophy.

Physics also makes significant contributions through advances in new technologies that arise from theoretical breakthroughs. For example, advances in the understanding of electromagnetism or nuclear physics led directly to the development of new products that have dramatically transformed modern-day society, such as television, computers, domestic appliances, and nuclear weapons; advances in thermodynamics led to the development of industrialization, and advances in mechanics inspired the development of calculus.

**Classical physics**

Physics became a separate science when [early modern Europeans](http://en.wikipedia.org/wiki/Early_modern_Europe) used experimental and quantitative methods to discover what are now considered to be the [laws of physics](http://en.wikipedia.org/wiki/Laws_of_physics).

Major developments in this period include the replacement of the [geocentric model](http://en.wikipedia.org/wiki/Geocentric_model) of the solar system with the helio-centric [Copernican model](http://en.wikipedia.org/wiki/Copernican_model), the [laws governing the motion of planetary bodies](http://en.wikipedia.org/wiki/Kepler%27s_laws) determined by [Johannes Kepler](http://en.wikipedia.org/wiki/Johannes_Kepler) between 1609 and 1619, pioneering work on [telescopes](http://en.wikipedia.org/wiki/Telescope) and [observational astronomy](http://en.wikipedia.org/wiki/Observational_astronomy) by [Galileo Galilei](http://en.wikipedia.org/wiki/Galileo_Galilei) in the 16th and 17th Centuries, and [Isaac Newton](http://en.wikipedia.org/wiki/Isaac_Newton)'s discovery and unification of the [laws of motion](http://en.wikipedia.org/wiki/Newton%27s_laws_of_motion) and [universal gravitation](http://en.wikipedia.org/wiki/Newton%27s_law_of_universal_gravitation)that would come to bear his name. Newton also developed [calculus](http://en.wikipedia.org/wiki/Calculus), the mathematical study of change, which provided new mathematical methods for solving physical problems.

The discovery of new laws in [thermodynamics](http://en.wikipedia.org/wiki/Thermodynamics), [chemistry](http://en.wikipedia.org/wiki/Chemistry), and [electromagnetics](http://en.wikipedia.org/wiki/Electromagnetics) resulted from greater research efforts during the [Industrial Revolution](http://en.wikipedia.org/wiki/Industrial_Revolution) as energy needs increased.  The laws comprising classical physics remain very widely used for objects on everyday scales travelling at non-relativistic speeds, since they provide a very close approximation in such situations, and theories such as [quantum mechanics](http://en.wikipedia.org/wiki/Quantum_mechanics) and the [theory of relativity](http://en.wikipedia.org/wiki/Theory_of_relativity) simplify to their classical equivalents at such scales. However, inaccuracies in classical mechanics for very small objects and very high velocities led to the development of modern physics in the 20th century.

**Modern physics**

[Modern physics](http://en.wikipedia.org/wiki/Modern_physics) began in the early 20th century with the work of [Max Planck](http://en.wikipedia.org/wiki/Max_Planck) in [quantum theory](http://en.wikipedia.org/wiki/Quantum_mechanics) and [Albert Einstein](http://en.wikipedia.org/wiki/Albert_Einstein)'s [theory of relativity](http://en.wikipedia.org/wiki/Theory_of_relativity). Both of these theories came about due to inaccuracies in classical mechanics in certain situations. [Classical mechanics](http://en.wikipedia.org/wiki/Classical_mechanics) predicted a varying [speed of light](http://en.wikipedia.org/wiki/Speed_of_light), which could not be resolved with the constant speed predicted by [Maxwell's equations](http://en.wikipedia.org/wiki/Maxwell%27s_equations) of electromagnetism; this discrepancy was corrected by Einstein's theory of [special relativity](http://en.wikipedia.org/wiki/Special_relativity), which replaced classical mechanics for fast-moving bodies and allowed for a constant speed of light [Black body radiation](http://en.wikipedia.org/wiki/Black_body_radiation) provided another problem for classical physics, which was corrected when Planck proposed that light comes in individual packets known as [photons](http://en.wikipedia.org/wiki/Photons); this, along with the [photoelectric effect](http://en.wikipedia.org/wiki/Photoelectric_effect) and a complete theory predicting discrete [energy levels](http://en.wikipedia.org/wiki/Energy_levels) of [electron orbitals](http://en.wikipedia.org/wiki/Electron_orbitals), led to the theory of quantum mechanics taking over from classical physics at very small scales.

[Quantum mechanics](http://en.wikipedia.org/wiki/Quantum_mechanics) would come to be pioneered by [Werner Heisenberg](http://en.wikipedia.org/wiki/Werner_Heisenberg), [Erwin Schrödinger](http://en.wikipedia.org/wiki/Erwin_Schr%C3%B6dinger) and [Paul Dirac](http://en.wikipedia.org/wiki/Paul_Dirac).  From this early work, and work in related fields, the [Standard Model of particle physics](http://en.wikipedia.org/wiki/Standard_Model_of_particle_physics) was derived. Following the discovery of a particle with properties consistent with the [Higgs boson](http://en.wikipedia.org/wiki/Higgs_boson) at [CERN](http://en.wikipedia.org/wiki/CERN) in 2012 all [fundamental particles](http://en.wikipedia.org/wiki/Fundamental_particles) predicted by the standard model, and no others, appear to exist; however, [physics beyond the Standard Model](http://en.wikipedia.org/wiki/Physics_beyond_the_Standard_Model), with theories such as [supersymmetry](http://en.wikipedia.org/wiki/Supersymmetry), is an active area of research

**4. Answer the questions using the text:**

1. How can we define physics?
2. What does classical physics deal with?
3. What are some branches of classical physics?
4. How does classical physics differ from modern physics?
5. What do you know about the quantum theory and theory of relativity?

**5. Translate the part of the text dealing with the chief theories of modern physics.**

1. **Give synonyms for the following words and collocations:**

|  |  |
| --- | --- |
| to involve  branch  academic discipline  basic  to be concerned with | affect  to give rise to  boundaries  dramatically  advance |

1. **Give the opposites of for the following words:**

|  |  |
| --- | --- |
| modern  incomplete  solid  light  rest | heat  light  liquid  external  low |

1. **Change the underlined word with the one given in brackets.**

**HEAT TRANSFER CONVECTION**

Heat energy can be transferred from one point to another by different methods and at different rates. Heat energy **1** *resides (refuses, stays, replies)* in kinetic energy of molecules and in the case of fluids, **2** *portions (forces, change, parts)* of the fluid may move from point to point carrying the fast moving molecules with their energy to points where the energy per molecule is less so that the energy is transferred by the molecules moving to the new point. This is known as convection. It can be **3** *readily (slowly, easily, really)* shown with water in a glass tube. Some ink added at the top **4** *allows (permits, avoids, ensures)* us to follow the motion of convection. In order to get circulation we note that the heating produces a density change and **5** *hence (even, although, therefore)* a pressure gradient and the density gradient cannot be parallel so that acceleration in different directions are different.

1. **Complete the following texts with the words in the brackets:**

**A. (ionised, fixed, maintain, plasma, compressible, flow, force, spread, applied, volume, division, bottom)**

**STATES OF MATTER**

The three common states of matter are solid, liquid, and gas. A solid maintains a \_\_\_\_\_\_\_\_ shape and a fixed size; even if a large force is \_\_\_\_\_\_\_\_\_\_\_\_\_ to a solid, it does not readily change in shape or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

A liquid does not maintain a fixed shape, it takes on the shape of its container, but like a solid, it is not readily\_\_\_\_\_\_\_\_\_\_\_\_, and its volume can be changed significantly only by a very large\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

A gas has neither a fixed shape nor a fixed volume, it will expand to fill its container. For example, when air is pumped into an automobile tire, the air does not run to the \_\_\_\_\_\_\_\_\_\_ as a liquid would; it \_\_\_\_\_\_\_\_\_\_\_\_\_\_ out to fill the whole volume of the tire.

Since liquids and gases do not\_\_\_\_\_\_\_\_\_\_\_\_\_ a fixed shape, they both have the ability to\_\_\_\_\_\_\_\_\_\_\_: they are thus often referred to collectively as fluids. The \_\_\_\_\_\_\_\_\_\_\_\_ of matter into three states is not always simple. How, for example, should butter be classified? Furthermore, a fourth state of matter can be distinguished, the\_\_\_\_\_\_\_\_\_\_\_\_ state, which occurs only at very high temperatures and consists of\_\_\_\_\_\_\_\_\_\_\_\_\_\_ atoms. Some scientists believe that the so-called colloids should also be considered a separate state of matter.

**B. (ground-breaking, radiation, imaginary, publications, bestseller, govern, unify, determined, gained).**

**STEPHEN HAWKING**

The British theoretical physicist Stephen Hawking (1942), 1\_\_\_\_\_\_\_\_\_\_\_\_\_ fame in 1988 with the publication of "A Brief History of Time." The book later was made into a movie of the same name. He holds the professorship at Cambridge University once held by Sir Isaac Newton and did 2\_\_\_\_\_\_\_\_\_\_\_\_\_ research on the theory of black holes.

Stephen Hawking has worked on the basic laws which 3\_\_\_\_\_\_\_\_\_\_ the universe. With Roger Penrose he showed that Einstein's General Theory of Relativity implied space and time would have a beginning in the Big Bang and an end in black holes. These results indicated it was necessary to 4\_\_\_\_\_\_\_\_\_\_\_\_ General Relativity with Quantum Theory, the other great scientific development of the first half of the 20th Century. One consequence of such a unification that he discovered was that black holes should not be completely black, but should emit 5\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and eventually evaporate and disappear. Another conjecture is that the universe has no edge or boundary in 6\_\_\_\_\_\_\_\_\_\_\_\_\_ time. This would imply that the way the universe began was completely 7\_\_\_\_\_\_\_\_\_\_\_\_\_\_ by the laws of science. His many 8\_\_\_\_\_\_\_\_\_\_\_\_\_\_ include The Large Scale Structure of Space-Time with G. F. R. Ellis, General Relativity: An Einstein Centenary Survey, with W. Israel, and 300 Years of Gravity, with W. Israel. Stephen Hawking has two popular books published; his 9\_\_\_\_\_\_\_\_\_\_\_\_\_\_ A Brief History of Time, and his later book, Black Holes and Baby Universes and Other Essays. Most of his work he has done while confined to a wheelchair brought on by amyotrophic lateral sclerosis, or Lou Gehrig’s Disease.

**C. (portion, cradle, fear, penetrate, radiant, accessible, constitute)**

«The world as I see it » with the words in the brackets and then translate. «The world as I see it» "The most beautiful experience we can have is the mysterious. It is the fundamental emotion that stands at the 1\_\_\_\_\_\_\_\_\_ of true art and true science. Whoever does not know it and can no longer wonder, no longer marvel, is as good as dead, and his eyes are dimmed. It was the experience of mystery – even if mixed with 2\_\_\_\_\_\_ – that engendered religion. A knowledge of the existence of something we cannot 3\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, our perceptions of the profoundest reason and the most 4\_\_\_\_\_\_\_\_\_\_\_beauty, which only in their most primitive forms are 5\_\_\_\_\_\_\_\_\_\_\_ to our minds: it is this knowledge and this emotion that 6\_\_\_\_\_\_\_\_\_\_\_ true religiosity. In this sense, and only this sense, I am a deeply religious man... I am satisfied with the mystery of life’s eternity and with a

knowledge, a sense, of the marvelous structure of existence – as well as the humble attempt to understand even a tiny 7\_\_\_\_\_\_\_\_\_\_\_\_\_\_of the Reason that manifests itself in nature.

**10.** **Ask 5 questions to the text about Stephen Hawking.**

**11. Add the corresponding verbs to the nouns**

* 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ a problem
  2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ an experiment
  3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ research
  4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ a phenomenon

**12. Match the words or expressions to their definitions.**

|  |  |
| --- | --- |
| 1. dark matter 2. particle collider 3. wavelength 4. weight 5. momentum 6. field of gravitation 7. a trough 8. lens 9. frame of reference 10. wave crest 11. transverse wave | 1. A minimum point in a wave or an alternating signal. 2. Any system for specifying the precise location of objects in space 3. Field created by any object with mass, extending outward in all directions, which determines the influence of that object on all others. 4. Mass times velocity; a quantity that determines the potential force that an object can impart to another object by collision 5. The highest part of a wave 6. The force of gravity acting on a body, equal to the mass of the body multiplied by the acceleration of gravity 7. A wave in which the vibrations of the medium are perpendicular to the direction the wave is moving. 8. The distance measured from crest to crest of one complete wave or cycle. 9. An accelerator in which two beams of particles are forced to collide head on 10. The matter in the universe that is not directly observable as it emits no light 11. A curved, ground and polished piece of glass or other transparent material used for the refraction of light |

**MODULE 3**

**PHYSICS IN OUR LIFE**

1. **Answer the following questions**

* What is the Large Hadron Collider?
* Where is it placed?
* What researches is it involved in?

2**. Match these “matter” words with their definitions.**

|  |  |
| --- | --- |
| 1. Atom | A) particles that touch one another but are free to move |
| 2. Liquid | B) to change from a solid to a liquid as a result of heating |
| 3. Solid | C) the building block of life |
| 4. Gas | D) a super-charged, super-heated gas |
| 5. Plasma | E) tightly packed molecules that cannot change shape |
| 6. Melt | F) particles that move freely and can change shape and size |
| 7. Evaporate | G) to change from a liquid to a solid when energy is removed and a liquid is cooled |
| 8. Freeze | H) to change from a liquid to a gas |
| 9. Capacity | I) The ability to absorb or contain another subject |

**3. Unjumble the words to make sentences**

## know people physics don’t how understand I. I think it’s a fascinating I more and wish understood subject really. our seems explain about Physics to everything world and our universe. to It’s as though physics is the key unlocking all of our world’s mysteries. I really enjoyed studying physics at the beginning. It was interesting then. difficult But and then I it couldn’t got understand the formulae. I have a lot of respect for physicists. They really to seem understand to lots be of able difficult things. Without them, we would still be living very basic lives. Physicists have sent people to the Moon. Their technology to modern led our has of research all. I always and fewer read to choosing are students fewer study physics. This is a shame.

## **4. Read the text from the Large Hadron Collider Recourse Portal** (<http://www.lhc.ac.uk/11841.aspx>)

The Universe started with a Big Bang – but we don’t fully understand how or why it developed the way it did. The LHC will let us see how matter behaved a tiny fraction of a second after the Big Bang. Researchers have some ideas of what to expect – but also expect the unexpected!

Many physicists think the Universe has more dimensions than the four (space and time) we are aware of. Will the LHC bring us evidence of new dimensions?

Gravity does not fit comfortably into the current descriptions of forces used by physicists. It is also very much weaker than the other forces. One explanation for this may be that our Universe is part of a larger multi-dimensional reality and that gravity can leak into other dimensions, making it appear weaker. The LHC may allow us to see evidence of these extra dimensions – for example, the production of mini-black holes which blink into and out of existence in a tiny fraction of a second.

What was the Universe made of before the matter we see around us formed? The LHC will recreate, on a microscale, conditions that existed during the first billionth of a second of the Big Bang.

At the earliest moments of the Big Bang, the Universe consisted of a searingly hot soup of fundamental particles – quarks, leptons and the force carriers. As the Universe cooled to 1000 billion degrees, the quarks and gluons (carriers of the strong force) combined into composite particles like protons and neutrons. The LHC will collide lead nuclei so that they release their constituent quarks in a fleeting ‘Little Bang’. This will take us back to the time before these particles formed, re-creating the conditions early in the evolution of the universe, when quarks and gluons were free to mix without combining. The debris detected will provide important information about this very early state of matter.

The Big Bang created equal amounts of matter and antimatter, but we only see matter now. What happened to the antimatter?

Every fundamental matter particle has an antimatter partner with equal but opposite properties such as electric charge (for example, the negative electron has a positive antimatter partner called the positron). Equal amounts of matter and antimatter were created in the Big Bang, but antimatter then disappeared. So what happened to it? Experiments have already shown that some matter particles decay at different rates from their anti-particles, which could explain this. One of the LHC experiments will study these subtle differences between matter and antimatter particles.

Why do some particles have mass while others don’t? What makes this difference? If the LHC reveal particles predicted by theory it will help us understand this.

Particles of light (known as photons) have no mass. Matter particles (such as electrons and quarks) do – and we’re not sure why. British physicist, Peter Higgs, proposed the existence of a field (the Higg’s Field), which pervades the entire Universe and interacts with some particles and this gives them mass. If the theory is right then the field should reveal itself as a particle (the Higg’s particle). The Higg’s particle is too heavy to be made in existing accelerators, but the high energies of the LHC should enable us to produce and detect it.

Ninety-six percent of our Universe is missing! Much of the missing matter is stuff researchers have called ‘dark matter’. Can the LHC find out what it is made of?

The theory of ‘supersymmetry’ suggests that all known particles have, as yet undetected, ‘superpartners’. If they exist, the LHC should find them. These ‘supersymmetric’ particles may help explain one mystery of the Universe – missing matter. Astronomers detect the gravitational effects of large amounts of matter that can’t be seen and so is called ‘Dark Matter’. One possible explanation of dark matter is that it consists of supersymmetric particles.

**5. Answer the questions using the text:**

## 1) How did our universe come to be the way it is?

## 2) What kind of Universe do we live in?

## 3) What happened in the Big Bang?

## 4) Where is the antimatter?

## 5) Why do particles have mass?

## 6) What is our Universe made of?

**6. Match the commonly asked questions about the Large Hadron Collider** **with the corresponding answers.**

## *Are the high energies produced by the LHC dangerous and what happens if something goes wrong?*

## *CERN stands for 'Conseil Européen pour la Recherche Nucléaire' (or European Council for Nuclear Research); does that mean that CERN is studying nuclear power and nuclear weapons?*

## *Can the work at CERN be used to build more deadly weapons?*

## *I have heard that the LHC will recreate the Big Bang, does that mean it might create another Universe and if so what will happen to our Universe?*

## *Why is the LHC underground? Is it because it is doing secret experiments that scientists want to hide away?*

## *How much did the LHC cost and who pays?*

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

People sometimes refer to recreating the Big Bang, but this is misleading. What they actually mean is:

* recreating the conditions and energies that existed shortly after the start of the Big Bang, not the moment at which the Big Bang started
* recreating conditions on a microscale, not on the same scale as the original Big Bang and
* recreating energies that are continually being produced naturally (by high energy cosmic rays hitting the earth’s atmosphere) but at will and inside sophisticated detectors that track what is happening

No Big Bang – so no possibility of creating a new Universe.

## \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The direct total LHC project cost is £2.6bn, made up of:

* the collider (£2.1bn)
* the detectors (£575m)

The total cost is shared mainly by CERN's 20 Member States, with significant contributions from the six observer nations.

The UK pays ~£95m per year as our annual subscription to CERN.

The LHC project involves 111 nations in designing, building and testing equipment and software, participating in experiments and analysing data. The degree of involvement varies between countries, with some able to contribute more financial and human resource than others.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

At the time that CERN was established (1952 – 1954) physics research was exploring the inside of the atom, hence the word ‘nuclear’ in its title. CERN has never been involved in research on nuclear power or nuclear weapons, but has done much to increase our understanding of the fundamental structure of the atom.

The title CERN is actually an historical remnant. It comes from the name of the council that was founded to establish a European organisation for world-class physics research. The Council was dissolved once the new organisation (the European Organization for Nuclear Research) was formed, but the name CERN remained.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The LHC has been built in a tunnel originally constructed for a previous collider (LEP – the Large Electron Positron collider). This was the most economical solution to building both LEP and the LHC. It was cheaper to build an underground tunnel than acquire the equivalent land above ground. Putting the machine underground also greatly reduces the environmental impact of the LHC and associated activities.

The rock surrounding the LHC is a natural shield that reduces the amount of natural radiation that reaches the LHC and this reduces interference with the detectors. Vice versa, radiation produced when the LHC is running is safely shielded by 50 – 100 metres of rock.

Unlikely for two main reasons. Firstly, CERN and the scientists and engineers working there have no interest in weapons research. They are trying to understand how the world works, not how to destroy it.

Secondly, the high energy particle beams produced at the LHC require a huge machine (27km long, weighing more than 38,000 tonnes – half the weight of an aircraft carrier), consuming 120MW of power and needing 91 tonnes of supercold liquid helium). The beams themselves have a lot of energy (the equivalent of a Eurostar train travelling at top speed) but they can only be maintained in a vacuum, if released into the atmosphere they would immediately interact with atoms in the air and dissipate their energy in a very short distance.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The LHC does produce very high energies, but these energy levels are restricted to tiny volumes inside the detectors. Many high energy particles, from collisions, are produced every second, but the detectors are designed to track and stop all particles (except neutrinos) as capturing all the energy from collisions is essential to identifying what particles have been produced. Very little of the energy from collisions is able to escape from the detectors.

The main danger from these energy levels is to the LHC machine itself. The beam of particles has the energy of a Eurostar train travelling at full speed and should something happen to destabilise the particle beam there is a real danger that all of that energy will be deflected into the wall of the beam pipe and the magnets of the LHC, causing a great deal of damage. The LHC has several automatic safety systems in place that monitor all the critical parts of the LHC. Should anything unexpected happen (power or magnet failure for example) the beam is automatically ‘dumped’ by being squirted into a blind tunnel where its energy is safely dissipated.

This all happens in milliseconds – the beam, which is travelling at 11,000 circuits of the LHC per second, will complete less than 3 circuits before the dump is complete.

**7. Find Ukrainian equivalents to the fallowing terms**

|  |  |  |
| --- | --- | --- |
| The LHC  cosmic rays  to contribute  nucleus  equipment  collision  damage  dissipate  electric charge  Matter  to develop | condition  data  to blink  equal  opposite  multi-dimensional reality  to disappear  researcher  field  supersymmetry  mystery | beam  fundamental particle  nuclear weapon  microscale  to destroy  speed  Solution  reduce  environment  explore |

1. **Translate the following words and collocations into English.**

|  |  |  |
| --- | --- | --- |
| Земля  Нептун  команда  галактика  астрономія  спостерігати  карликова планета  кількість, обсяг, об’єм  відстань  слабка гравітація  всесвіт  протон  атмосфера  теорія  Юпітер  Венера  Плутон  повітря  планета | місія  підтримувати життя  космічне дослідження  сильна гравітація  Великий Вибух  електрон  фізик  частка  Марс  Сатурн  віддалена планета  астроном  передрікати, прогнозувати  телескоп  придатний для житла, населений  сонячна система  життєві форми | позитрон  атом  чорна діра  вимір  Меркурій  Уран  Сонце  космос  температура  ділитися  молекула  вимога, необхідна умова  вода у рідкому стані  нейтрон  ядерний  антиматерія  сила  відкривати |

**9. Ask questions of different types to the sentence.**

* NASA launched the Kepler space telescope, designed to find habitable planets.
* The Kepler telescope has discovered five new Earth-sized planets beyond our solar system.
* NASA wants to send some objects representing Earth to the new planet.

**10. Read the text from the popular scientific web site** [**http://www.livescience.com/**](http://www.livescience.com/) **and place the paragraphs in the correct order as in the introduction**

**PHYSICS IN EVERYDAY LIFE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 |
| A | C | B | E | D |

**A.** The most basic of the sciences, physics, is all around us every day. If you've ever wondered what makes lightning, why a boomerang returns, how ice skaters can spin so fast, how Michael Jordan can "fly," why waves crash on the beach, how that tiny computer can do complicated problems, or how long it takes light from a star to reach us, you have been thinking about some of the same things physicists study every day.

**B.** If you've had a back-row seat at a rock concert, and could still hear, you experienced physics at work! Physicists studying sound contribute to the design of concert halls and the amplification equipment. Knowing more about how things move and interact can be used to manage the flow of traffic and help cities avoid grid lock.

**C.** Physicists like to ask questions. They try to find answers for almost everything from when the universe began to why soda fizzes. If you like to explore and figure out why things are the way they are, you might like physics.

**D.** Physicists have figured out some extremely fine details of the universe, from the radius of black holes to the behavior of subatomic particles neither of which we can even see. It may surprise you to learn, then, that they lack explanations (or have only recently stumbled upon them) for many common phenomena we observe in daily life.

**E.** Lasers and radioactive elements are tools in the war on cancer and other diseases. Geophysicists are developing methods to give advance warning of earthquakes. The work of physicists made possible the computer chips that are in your digital watch, CD player, electronic games, and hand-held calculator.

## **Nuts**

|  |  |  |
| --- | --- | --- |
| 1 | 2 | 3 |
|  |  |  |

**A.** Perhaps you've noticed that, in bowls of mixed nuts, the Brazil 1nuts always seem to be sitting on top. This is known as the "Brazil nut effect," and the seemingly mundane phenomenon is actually one of the biggest unsolved mysteries in many-body physics the science that describes large quantities of interacting objects.

**B.** Not only nut manufacturers, but also physicists, astronomers and geologists would all benefit from an understanding of the effect, so next time you're eating nuts or granola, or fishing the crumbs out of the bottom of a bowl of Doritos, try contemplating the physics involved.

**C.** Among an assortment of things (whether they be nuts, sedimentary deposits, or other objects of varying sizes), larger pieces rise to the top over time in spite of their greater gravitas, while smaller objects tend to sink lower in the pile over time. Perhaps the small stuff is trickling through cracks. Convection currents may also play a role, as might condensation of smaller particles. All of these possibilities and a few more probably contribute to the Brazil nut effect, but no one knows which ones, or to what extent, so no successful computer simulations of the phenomenon have been made.

## **Foam**

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | 2 | 3 | 4 |
|  |  |  |  |

**A.** Had a bubble bath today? Maybe not but you've probably shaved, washed dishes, had a latte or beer, or, if you're lucky, eaten a piece of pie topped with a puff of whipped cream.

**B.** According to Douglas Durian, a professor of physics at UCLA, foams are typically 95 percent gas and 5 percent liquid. Somehow these add up to give them certain traits of solids, too. The gas in the foam separates the liquid to form a matrix of tiny bubbles, and if the bubbles' liquid walls are rigid enough, the foam can sometimes keep its shape.

**C.** We encounter foam so often that few of us step back and fully appreciate how weird the stuff really is. For starters, consider this: Is whipped cream a solid, a liquid, or a gas?

**D.** However, no formula exists for predicting exactly how stiff or oozy foam will be based on the size of its bubbles or the amount of liquid it contains. "The physics of foam is poorly understood," Durian told NASA Science.

## **Ice**

|  |  |  |
| --- | --- | --- |
| 1 | 2 | 3 |
|  |  |  |

**A.** Theorists have speculated that it may be the very act of slipping making contact with the ice that melts its surface. Others think the fluid layer is there before the slipper ever arrived, and is somehow generated by the inherent motion of surface molecules.

**B.** We know you're looking for someone or something to blame, as you lie there on the ground fuming, but unfortunately the jury is still out on this one.

**C.** A century and a half of scientific inquiry has yet to determine why ice can make you fall down. Scientists agree that a thin layer of liquid water on top of solid ice causes its slipperiness, and that a fluid's mobility makes it difficult to walk on, even if the layer is thin. But there's no consensus as to why ice, unlike most other solids, has such a layer.

## **Cereal**

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | 2 | 3 | 4 |
|  |  |  |  |

**A.** Surface tension makes the milk's surface cave in slightly in the middle of the bowl. Because water molecules in the milk are attracted to glass, the milk's surface curves upward around the bowl's edge. For this reason, pieces of the cereal near the edge float upward along this curve, appearing as if they're clinging to the edge.

**B.** Also because of surface tension, cereal floating in the middle of your bowl dents the milk's surface, creating a dip in it. When two pieces of cereal touch, their two dents become one, and, resting in it, they stick together.

**C.** You may or may not have pondered why your breakfast cereal tends to clump together or cling to the sides of a bowl of milk. Dubbed the Cheerios Effect by scientists, this clumping phenomenon applies to anything that floats, including fizzy soda bubbles and hair particles in water after a morning shave.

**D.** Dominic Vella, a graduate student now at Cambridge University, and Lakshminarayanan Mahadevan, a mathematician from Harvard University, were the first to explain the effect in terms of simple physics, which they did in a 2005 paper. The Cheerios Effect, they proved, results from the geometry of a liquid's surface.

## **Magnets**

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | 2 | 3 | 4 |
|  |  |  |  |

**A.** Normally in matter, the magnetic fields of electrons point in different directions, canceling each other out. (This is why the electrons in your body don't cause you to stick to your fridge when you walk by it.) But when the magnetic fields all the electrons in an object align in the same direction, as occurs in many metals (and, obviously, in magnets), a net magnetic field is generated. This exerts a force on other magnetic objects, either attracting or repelling them depending on the direction of their own magnetic fields.

**B.** Magnets: pretty weird, huh? What's up with them? Jearl Walker, a physics professor at Cleveland State University and coauthor of the widely used textbook "Fundamentals of Physics" (Wiley, 8th Edition 2007), explains that magnetic fields naturally radiate outward from the electrically charged particles that make up atoms especially electrons.

**C.** Physicists wonder: why do particles radiate magnetic fields, what are magnetic fields, and why do they always align between two directions, giving magnets their north and south poles? “We just observe that when you make a charged particle move, it creates a magnetic field and two poles. We don't really know why. It's just a feature of the universe, and the mathematical explanations are just attempts of getting through the 'homework assignment' of nature and getting the answers,” Walker told Life's Little Mysteries.

**D.** Unfortunately, trying to understand magnetism on a deeper level is essentially impossible. Though physicists have come up with a theory called “quantum mechanics” that very accurately explains the behavior of particles including their magnetism there's no way to intuitively understand what the theory really means.

## **Static**

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | 2 | 3 | 4 |
|  |  |  |  |

**A.** Static shocks are as mysterious as they are unpleasant. What we know is this: They occur when an excess of either positive or negative charge builds up on the surface of your body, discharging when you touch something and leaving you neutralized. Alternatively, they can occur when static electricity builds up on something else a doorknob, say which you then touch. In that case, you are the excess charge's exit route.

**B.** This has never been satisfactorily explained, and a recent study by Northwestern University researcher Bartosz Grzybowski found that it may not even be the case. As detailed in the June issue of the journal Science, Grzybowski found that patches of both excess positive and excess negative charge exist on statically charged objects. He also found that entire molecules seemed to migrate between objects as they are rubbed together.

**C.** Clearly, the explanation of static is changing.

**D.** But why all the buildup? It's unclear. The common (and probably partly correct) explanation says that when two objects rub together, friction knocks the electrons off the atoms in one of the objects, and these then move onto the second, leaving the first object with an excess of positively charged atoms and giving the second an excess of negative electrons. Both objects (your hair and a wool hat, say) will then be statically charged. But why do electrons flow from one object to the other, instead of moving in both directions?

**Rainbows**

|  |  |  |
| --- | --- | --- |
| 1 | 2 | 3 |
|  |  |  |

**A.** Rainbows form as sunlight shines on droplets of moisture in the Earth's atmosphere. The droplets act like prisms, "refracting" or separating light into its component colors and sending them shooting off at a range of angles between 40 and 42 degrees from the direction opposite the sun.

**B.** Of course, rainbows are no longer scientifically mysterious. They result from the way light passes through spherical drops: it is first refracted entering each drop's surface, reflected off the back of the drops, and again refracted as it leaves the drops, with all these rebounds giving it its final angular direction. This explanation has been known since the days of the 17th century physicist Isaac Newton.

**C.** But imagine how mystical rainbows would have seemed before then! Because they are so beautiful and were so inexplicable they were featured in many early religions. In ancient Greece, for example, rainbows were thought to be the paths made by the messengers of the gods as they traveled between Earth and heaven.

**ГРАМАТИЧНІ ВПРАВИ**

**The simple present tense**

*1. Read the following in the third person singular*

1. They wish to speak to you. (He)
2. Buses pass my house every hour.
3. They help their father. (He)
4. We change planes at Heathrow.
5. You watch too much TV. (He)
6. They worry too much. (He)
7. I cash a cheque every month. (He)
8. I always carry an umbrella. (She)
9. They wash the floor every week. (She)
10. His sons go to the local school.
11. These seats cost £10.
12. Elephants never forget.
13. They usually catch the 8.10 bus.
14. They sometimes miss the bus.
15. I mix the ingredients together.
16. The rivers freeze in winter.
17. They fly from London to Edinburgh.
18. The carpets match the curtains.
19. They realize the danger.
20. I use a computer.
21. They do nothing. They lie in bed all day.
22. The boys hurry home after school.
23. They kiss their mother.
24. They dress well.
25. Your children rely on you.
26. You fry everything.
27. The taxes rise every year.
28. They do exercises every morning.
29. Do you like boiled eggs? (He)
30. What do they do on their days off?

*2. Read the following (a) in the negative (b) in the interrogative*

1. You know the answer.
2. He has breakfast at 8.00.
3. He loves her.
4. Some schoolgirls wear uniforms.
5. He trusts you.
6. He tries hard.
7. The park closes at dusk.
8. He misses his mother.
9. The children like sweets.
10. He finishes work at 6.00.
11. He lives beside the sea.
12. He bullies his sisters.
13. This stove heats the water.
14. She has a cooked breakfast.
15. She carries a sleeping bag.
16. He usually believes you.
17. She dances in competitions.
18. You remember the address.
19. She plays chess very well.
20. He worries about her.
21. These thieves work at night.
22. He leaves home at 8.00 every day.
23. Ann arranges everything.
24. She agrees with you.
25. Their dogs bark all night.
26. Their neighbours often complain.
27. Tom enjoys driving at night.
28. He engages new staff every spring.
29. Tom looks very well.
30. They sell fresh grape juice here.
31. She cuts her husband's hair.
32. They pick the apples in October.
33. The last train leaves at midnight.
34. He relaxes at weekends.
35. She refuses to discuss it.

**The simple past tense**

*3. Put the verbs in the following sentences into the simple past tense.*

1. I go to work by bus.
2. I meet her on Tuesdays.
3. He always wears black.
4. I make cakes every week.
5. She gets up at 6.30.
6. He understands me.
7. He shuts the shop at 6.00.
8. She speaks slowly.
9. He leaves the house at 9.00.
10. I read a chapter every night.
11. You eat too much.
12. I see him every day.
13. He cries when he is hurt.
14. Who knows the answer?
15. I think I know it.
16. He takes the dog out twice a day.
17. We buy them here.
18. I dream every night.
19. He often feels ill.
20. I know what he wants.
21. I usually pay him £5.
22. His dog always bites me.
23. It costs 30p.
24. My back hurts.
25. We drink water.
26. His roses grow well.
27. He rides every day.
28. He often falls off.
29. He puts up his prices every year.
30. He sleeps badly.

*4. Put the verbs in the following sentences into (a) the negative (b) the interrogative*.

1. She saw your brother.
2. We heard a terrible noise.
3. He slept till 10.00.
4. He looked at the picture.
5. They drank all the wine.
6. They set out early enough.
7. She thought about it.
8. The police caught the thief.
9. He hid the letter.
10. She found her watch.
11. His nose bled.
12. My mother chose this hotel.
13. She lent you enough money.
14. Keiko taught Japanese.
15. Tom hurt his foot.
16. He broke his arm.
17. His wife came at 8.00.
18. He lost his wallet.
19. His son wrote a novel.
20. They flew to New York.
21. Ann drew you a map.
22. Tom laid the table.
23. Mr Pitt fell downstairs.
24. She lost her way.
25. He forbade her to leave.
26. I sent it to the laundry.
27. Jack kept the money.
28. He rode slowly.
29. They spent it all.
30. She sold the car.
31. Jean rang the bell.
32. The sun rose at 6.00.
33. The boys ran home.
34. He shook the bottle.
35. He forgave her.

*5. Make the sentences (a) negative and (b) interrogative, using* ***do/does/did****.*

1. They have eggs for breakfast.
2. He needs a new coat.
3. He used to sell fruit.
4. They have to work hard.
5. She does the housework.
6. He needs more money.
7. He had a row with his boss.
8. She had a heart attack.
9. Her hair needed cutting.
10. He does his homework after supper.
11. She has a singing lesson every week.
12. He does his best.
13. He has to get up at six every day.
14. The children have dinner at school.
15. She dared him to climb it.
16. You did it on purpose.
17. He dares to say that!
18. They had a good time.
19. The drink did him good.
20. My watch needs cleaning.
21. He had an accident.
22. You had your house painted.
23. She used to make her own clothes.
24. You do the exercises.
25. He had difficulty (in) getting a job.

**The future simple tense**

*6. Put the verbs in brackets into the future simple.*

1. I (know) the result in a week.
2. You (be) in Rome tonight.
3. You (be) able to drive after another five lessons.
4. Do you think that he (recognize) me?
5. Unless he runs he (not catch) the train.
6. He (lend) it to you if you ask him.
7. I hope I (find) it.
8. He (believe) whatever you tell him.
9. I (remember) this day all my life.
10. Perhaps he (arrive) in time for lunch.
11. If he works well I (pay) him £10.
12. I wonder how many of us still (be) here next year.
13. If you think it over you (see) that I am right.
14. If you learn another language you (get) a better job.
15. I am sure that you (like) our new house.
16. Newspaper announcement: The President (drive) along the High Street in an open carriage.
17. You (need) a visa if you are going to Spain.
18. You (feel) better when you've had a meal.
19. She (have) £1000 a year when she is twenty-one.
20. If you put any more polish on that floor someone (slip) on it.
21. I wonder if he (succeed).
22. I hope he (remember) to buy wine.
23. If you leave your roller skates on the path someone (fall) over them.
24. If they fall over them and hurt themselves they (sue) you.
25. If you want twenty cigarettes you (have) to give me more money.
26. Notice: The management (not be) responsible for articles left on the seats.
27. If I drop this it (explode).
28. You (have) time to help me tomorrow?
29. It (matter) if I don't come home till morning?
30. He (mind) if I bring my dog?

**The present continuous tense**

*7. Put the verbs in brackets into the present continuous tense.*

1. She (not work), she (swim) in the river.
2. He (teach) his boy to ride.
3. The airplane (fly) at 2,000 metres.
4. Mrs Jones (sweep) the steps outside her house.
5. It is a lovely day. The sun (shine) and the birds (sing).
6. We (have) breakfast at 8.00 tomorrow as Tom (catch) an early train.
7. She always (ring) up and (ask) questions.
8. Ann usually does the shopping, but I (do) it today as she isn't well.
9. Mother (rest) now. She always rests after lunch.
10. The children are very quiet. Go and see what they (do). *-* They (cut) up some £5 notes.
11. I can't hear what you (say); the traffic (make) too much noise.
12. She always (lose) her glasses and (ask) me to look for them.
13. Can I borrow your pen or you (use) it at the moment?
14. It (rain)? ~Yes, it (rain) very hard. You can't go out yet.
15. Someone (knock) at the door. Shall I answer it? ~ I (come) in a minute. I just (wash) my hands.
16. You (do) anything this evening? ~ No, I'm not. – Well, I (go) to the cinema. Would you like to come with me?
17. What Tom (do) now? He (clean) his shoes.
18. Why Ann (not wear) her new dress?
19. Why you (mend) that old shirt?
20. You (not tell) the truth. ~ How do you know that I (not tell) the truth?
21. Who (move) the furniture about upstairs? ~ It's Tom. He (paint) the front bedroom.
22. What you (read) now? I (read) *Crime and Punishment.*
23. Why you (make) a cake? Someone (come) to tea?
24. Where is Tom? ~ He (lie) under the car.
25. Why you (type) so fast? You (make) a lot of mistakes.
26. They (dig) an enormous hole just outside my gate. ~ What they (do) that for? ~ I don't know. Perhaps they (look) for oil.
27. What (make) that terrible noise? ~ It's the pneumatic drill. They (repair) the road.
28. What you (wait) for? – I (wait) for my change; the boy just (get) it.
29. Mother: What you (look) at? Something (happen) in the street?
30. Child: Yes. The house opposite is on fire! Come and look.  
    Mother: I can't. I (bath) the babies. Is the Fire Brigade here?
31. Child: Yes. Fire engines (rush) up and the firemen (jump) out and (unroll) their hoses.
32. Smoke (pour) from the windows! People (stop) to watch.  
    A policeman (try) to move them on.
33. An old man (climb) out of a first floor window!  
    A fireman (help) him! Two boys (slide) down a rope!
34. A woman (wave) from the attic and a fireman (go) up a ladder to help her!
35. Now he (come) down again! He (carry) a baby! The crowd (cheer)

**The simple present and the present continuous***8.**Put the verbs in brackets into the simple present or the present continuous tense.*

1. Cuckoos (not build) nests. They (use) the nests of other birds.
2. You can't see Tom now: he (have) a bath.
3. He usually (drink) coffee but today he (drink) tea.
4. What she (do) in the evenings? ~ She usually (play) cards or (watch) TV.
5. I won't go out now as it (rain) and I (not have) an umbrella.
6. The last train (leave) the station at 11.30.
7. He usually (speak) so quickly that I (not understand) him.
8. Ann (make) a dress for herself at the moment. She (make) all her own clothes.
9. Hardly anyone (wear) a hat nowadays.
10. I'm afraid I've broken one of your coffee cups. ~ Don’t worry. I (not like) that set anyway.
11. I (wear) my sunglasses today because the sun is very strong.
12. Tom can't have the newspaper now because his aunt (read) it.
13. I'm busy at the moment. I (redecorate) the sitting room.
14. The kettle (boil) now. Shall I make the tea?
15. You (enjoy) yourself or would you like to leave now? -  
    I (enjoy) myself very much. I (want) to stay to the end.
16. How you (get) to work as a rule? ~ I usually (go) by bus but tomorrow I (go) in Tom's car.
17. Why you (put) on your coat? ~ I (go) for a walk. You (come) with me? -  
    Yes, I'd love to come. You (mind) if I bring my dog?
18. How much you (owe) him? – I (owe) him £5. ~ You (intend) to pay him?
19. Mary usually (learn) languages very quickly but she (not seem) able to learn modern Greek.
20. I always (buy) lottery tickets but I never (win) anything.
21. You (like) this necklace? I (give) it to my daughter for her birthday tomorrow.
22. I won't tell you my secret unless you (promise) not to tell anyone. – I (promise).
23. You always (write) with your left hand?
24. You (love) him? – No, I (like) him very much but I (not love) him.
25. You (dream) at night? – Yes, I always (dream) and if I (eat) too much supper I (have) nightmares.
26. These workmen are never satisfied; they always (complain).
27. We (use) this room today because the window in the other room is broken.
28. This car (make) a very strange noise. You (think) it is all right?-  
    Oh, that noise (not matter). It always (make) a noise like that.
29. What Tom (think) of the Budget? - He (think) it most unfair. ~ I (agree) with him.
30. What this one (cost)? – It (cost) forty pence.
31. You (hear) the wind? It (blow) very strongly tonight.
32. You (see) my car keys anywhere? - No, I (look) for them but I (not see) them.
33. He never (listen) to what you say. He always (think) about something else.
34. You (understand) what the lecturer is saying? ~ No, I (not understand) him at all.
35. What you (have) for breakfast usually? ~ I usually (eat) a carrot and (drink) a glass of cold water.
36. Why you (walk) so fast today? You usually (walk) quite slowly. ~ I (hurry) because I (meet) my mother at 4 o'clock and she (not like) to be kept waiting.
37. You (recognize) that man? ~ I (think) that I have seen him before but I (not remember) his name.
38. Look at that crowd. I (wonder) what they (wait) for.
39. Stop! You (not see) the notice? ~ I (see) it but I can't read it because I (not wear) my glasses.
40. She always (borrow) from me and she never (remember) to pay me back.
41. I (save) up because I (go) abroad in July.
42. I (think) it is a pity you don't take more exercise. You (get) fat.
43. Tom never (do) any work in the garden; he always (work) on his car.
44. That film (come) to the local cinema next week. You (want) to see it?
45. How Peter (get) on at school? ~ Very well. He (seem) to like the life.
46. This story is about a boy who (make) friends with a snake which he (find) in his garden. Then he (go) away but he (not forget) the snake and some years later he (return) and (look) for it. He (find) the snake who (recognize) its old friend and (coil) round him affectionately. But, unfortunately, the snake is by now a full-grown boa-constrictor and its embrace (kill) the poor boy. – The snake (feel) sorry about this? – I (not know). The story (end) there.
47. How you (end) a letter that (begin), 'Dear Sir'? ~ I always (put), 'Yours truly', but Tom (prefer) 'Yours faithfully'.
48. What the word 'catastrophe' (mean)? ~ It (mean) 'disaster'.
49. Who (own) this umbrella? ~ I (not know). Everybody (use) it but nobody (know) who (own) it.
50. You (mind) if I (ask) you a question? ~ That (depend) on the question. ~ It (concern) your brother. ~ I (refuse) to answer any question about my brother.

**The past continuous tense***9. Put the verbs in brackets into the past continuous tense.*

1. Detective: I'm afraid I must ask you both what you (do) yesterday at 10.20 p.m. Mr X: I (play) chess with my wife. Mr Y: I (listen) to a play on the radio.
2. The children were frightened because it (get) dark.
3. It was a fine day and the roads were crowded because a lot of people (rush) to the seaside.
4. He usually wears sandals but when I last saw him he (wear) boots.
5. The house was in great disorder because he (redecorate) it.
6. The director didn't allow the actors to travel by air while they (work) on the film.
7. The car had nobody in it but the engine (run).
8. I was alone in the house at that time because Mr Jones (work) in the garage and Mrs Jones (shop).
9. Are you going to Rome? I thought that you (go) to Milan.
10. My wife and I (talk) about you the other day.
11. When I first met him he (study) painting.
12. There was a strong smell and the sound of frying. Obviously Mrs Jones (cook) fish.
13. Tom ate nothing for lunch because he (diet). He said that he (try) to lose 10 kilos.
14. Who you (talk) to on the telephone as I came in? – I (talk) to Mr Pitt.
15. When I first met him he (work) in a restaurant.
16. He watched the children for a moment. Some of them (bathe) in the sea, others (look) for shells, others (play) in the sand.
17. She (stand) at the bus stop. I asked her what bus she (wait) for.
18. From the sounds it was clear that Mary (practise) the piano.
19. Tom (sit) in a corner with a book. I told him that he (read) in very bad light.
20. The traffic (make) so much noise that I couldn't hear what he (say).

**The simple past and the past continuous**

*10. Put the verbs in brackets into the simple past or the past continuous tense.*

1. I lit the fire at 6.00 and it (burn) brightly when Tom came in at 7.00.
2. When I arrived the lecture had already started and the professor (write) on the overhead projector.
3. I (make) a cake when the light went out. I had to finish it in the dark.
4. Unfortunately when I arrived Ann just (leave), so we only had time for a few words.
5. He (watch) TV when the phone rang. Very unwillingly he (turn) down the sound and (go) to answer it.
6. He was very polite. Whenever his wife entered the room he (stand) up.
7. My dog (walk) along quietly when Mr Pitt's Pekinese attacked him.
8. What you (think) of his last book? ~ I (like) it very much.
9. He suddenly (realize) that he (travel) in the wrong direction.
10. He (play) the guitar outside her house when someone opened the window and (throw) out a bucket of water.
11. I just (open) the letter when the wind (blow) it out of my hand.
12. When I (look) for my passport I (find) this old photograph.
13. The boys (play) cards when they (hear) their father's step. They immediately (hide) the cards and (take) out their lesson books.
14. He (clean) his gun when it accidentally (go) off and (kill) him.
15. As I (cross) the road I (step) on a banana skin and (fall) heavily.
16. I still (lie) on the road when I (see) a lorry approaching.
17. Luckily the driver (see) me and (stop) the lorry in time.
18. When I (hear) his knock I (go) to the door and (open) it, but I (not recognize) him at first because I (not wear) my glasses.
19. While the guests (dance) thieves (break) into the house and (steal) a lot of fur coats.
20. The next day, as they (know) that the police (look) for them, they (hide) the coats in a wood and (go) off in different directions.

**The future continuous and the future simple**

*11. Put the verbs in brackets into the future continuous tense.*

1. This time next month I (sit) on a beach.
2. When you arrive I probably (pick) fruit.
3. I'll call for her at eight. *-* No, don't; she still (have) breakfast then.
4. I (wait) for you when you come out.
5. When you next see me I (wear) my new dress.
6. I'll give Jack your message. I can do it easily because I (see) him tomorrow. We go to work on the same train.
7. You (do) geometry next term.
8. I'll look out for you at the parade. - Do, but I (wear) uniform so you may find it hard to recognize me.
9. We have to do night duty here. I (do) mine next week.
10. In a hundred years' time people (go) to Mars for their holidays.
11. He (use) the car this afternoon.
12. I (see) you again.
13. It's a serious injury but he (walk) again in six weeks.
14. I'll come at three o'clock. - Good, I (expect) you.
15. You'd better go back now; your mother (wonder) where you are.
16. In fifty years" time we (live) entirely on pills.
17. What do you think the children (do) when we get home? - I expect they (have) their supper.
18. The garden (look) its best next month.
19. I've just remembered that I left the bathroom taps on. I expect the water (flow) down the stairs by now.
20. You (need) your camera tomorrow or can I borrow it?
21. We've just got to the top in time. The sun (rise) in a minute.
22. Air hostess: We (take off) in a few minutes. Please fasten your safety belts.
23. We'd better go out tomorrow because Mary (practise) the piano all day.
24. Don't ring her up at 6.00; she (put) the children to bed. Ring later.
25. When I get home my dog (sit) at the door waiting for me.

*12. Put the verbs in brackets into the appropriate future form (continuous or simple)*

1. There is going to be a bus strike. Everyone (walk) to work next week.
2. You've just missed the last train! – Never mind, I (walk).
3. I'll ring you tomorrow at six. – No, don't ring at six; I (bath) the baby then. Ring later.
4. Mother: Your face is dirty. – Child: All right, I (wash) it.
5. Will you have lunch with me on the 24th? – I'd love to, but I'm afraid I (do) my exam then.
6. I (work) for Mr Pitt next week as his own secretary will be away.
7. You (have) something to drink, won't you?
8. Why did you take his razor? He (look) for it everywhere tomorrow.
9. I hope you'll do well in the race tomorrow. I (think) of you.
10. Notice on board ship: In the event of an emergency all passengers (assemble) on the boat deck.
11. I don't feel well enough to go to the station to meet him. ~ I (meet) him for you. But how I (recognize) him? – He's small and fair, and he (wear) a black and white school cap.
12. I (leave) these flowers at the hospital for you. I (go) there anyway to visit my cousin.
13. You ought to try to get a ticket for the Spectators' Gallery next week; they (debate) international fishing rights.
14. You've left the light on. – Oh, so I have. I (go) and turn it off.
15. I've just been appointed assistant at the local library. – Then you (work) under my sister. She is head librarian there.
16. I want to post this letter but I don't want to go out in the rain. - I (post) it for you. I (go) out anyway as I have to take the dog for a walk.
17. The prima ballerina is ill so I expect her understudy (dance) instead.
18. This time next Monday I (sit) in a Paris cafe reading *Le Figaro. –* You (not read). You'll be looking at all the pretty girls.
19. Wages have gone up, so I suppose prices (go up) too.
20. It is nearly autumn; soon the leaves (change) colour.
21. Mother (on phone): My son has just burnt his hand very badly. – Doctor: I (come) at once.
22. Customer in restaurant: Waiter, this plate is dirty. – Waiter: I'm sorry, sir, I (bring) you another.
23. In a few years' time we all (live) in houses heated by solar energy.
24. It's beginning to get dark; the street lights (go on) in a few minutes.
25. We (not play) poker at the party tonight; our hostess doesn't approve of cards.
26. Let's wait here; the swing bridge (open) in a minute to let that ship through.
27. Guest: May I use your phone to ring for a taxi? - Hostess: Oh, there's no need for that; my son (drive) you home.
28. Are you nearly ready? Our guests (arrive) any minute.
29. Now that the parking regulations have become stricter, more people (use) public transport and (leave) their cars at home.
30. I'm afraid I've just broken your goldfish bowl. - Never mind, I (put) the goldfish in the bath.

**The present perfect tense**

*13. Put the verbs in brackets into the present perfect tense, and fill the spaces by repeating the auxiliary.*

1. Where you (be)? ~ I (be) to the dentist.
2. You (have) breakfast? ~ Yes, I …
3. The post (come)? ~ Yes, it …
4. You (see) my watch anywhere? ~ No, I'm afraid I …
5. I (not finish) my letter yet.
6. He just (go) out.
7. Someone (take) my bicycle.
8. The phone (stop) ringing.
9. You (hear) from her lately? - No, I …
10. I just (wash) that floor.
11. The cat (steal) the fish.
12. There aren't any buses because the drivers (go) on strike.
13. Charles (pass) his exam? ~ Yes, he …
14. How many bottles the milkman (leave)? ~ He (leave) six.
15. I (live) here for ten years.
16. How long you (know) Mr Pitt? ~ I (know) him for ten years.
17. Would you like some coffee? I just (make) some.
18. Mary (water) the tomatoes? ~ Yes, I think she …
19. You ever (leave) a restaurant without paying the bill? ~ No, I …
20. I (ask) him to dinner several times.
21. He always (refuse).
22. You ever (ride) a camel?
23. I (buy) a new carpet. Come and look at it.
24. He (post) the letter?
25. I often (see) him but I never (speak) to him.
26. You ever (eat) caviar? ~ No, I …
27. We just (hear) the most extraordinary news.
28. I (not pay) the telephone bill yet.

**The present perfect and the simple past**

*14.**Put the verbs in brackets into the present perfect or the simple past tense.*

1. This is my house. ~ How long you (live) here? ~ I (live) here since 1990.
2. He (live) in London for two years and then (go) to Edinburgh.
3. Shakespeare (write) a lot of plays.
4. My brother (write) several plays. He just (finish) his second tragedy.
5. I (fly) over Loch Ness last week. ~ You (see) the Loch Ness monster?
6. I (not see) him for three years. I wonder where he is.
7. He (not smoke) for two weeks. He is trying to give it up.
8. When he (arrive)? ~ He (arrive) at 2.00.
9. I can't go out because I (not finish) my work.
10. I never (drink) whisky. ~ Well, have some now.
11. I (write) the letter but I can't find a stamp.
12. The clock is slow. ~ It isn't slow, it (stop).
13. Here are your shoes; I just (clean) them.
14. I (leave) home at 8.00 and (get) here at twelve.
15. I (do) this sort of work when I (be) an apprentice.
16. He just (go) out.
17. He (go) out ten minutes ago.
18. You (have) breakfast yet? ~ Yes, I (have) it at 8.00.
19. I (meet) him last June.
20. You (see) the moon last night?
21. The play just (begin). You are a little late.
22. The newspaper (come)? ~ Yes, Ann is reading it.
23. We (miss) the bus. Now we'll have to walk.
24. Mr Pound is the bank manager. He (be) here for five years.
25. Mr Count (work) as a cashier for twenty-five years. Then he (retire) and (go) to live in the country.

**The future perfect tense**

*15. Put the verbs in brackets into the future perfect tense.*

1. In a fortnight's time we (take) our exam.
2. I (finish) this book by tomorrow evening.
3. By this time tomorrow we (have) our injections.
4. By the end of next year I (be) here twenty-five years.
5. I'll still be here next summer but Tom (leave).
6. I (finish) this job in twenty minutes.
7. By next winter they (build) four houses in that field.
8. At the rate he is going he (spend) all his money by the time he is twenty-one.
9. By this time next year I (save) £250.
10. By the time we get to the party everything (be) eaten.
11. The train (leave) before we reach the station.
12. If I continue with my diet I (lose) 10 kilos by the end of the month.
13. By the end of my university course I (attend) 1,200 lectures.
14. By the end of this week my illness (cost) me £100.
15. By the time that he leaves school his parents (spend) £25,000 on his education.
16. By the end of the term I (read) all twelve volumes.
17. When you come back I (finish) all the housework.
18. The police (hear) of the theft by this time.
19. We (drink) all that wine by the end of the year.
20. On the fourth of next month he (be) in prison for ten years.
21. At this rate you (break) all the wine glasses by the end of the month.
22. If we don't hurry the sun (rise) before we reach the top.
23. I'm going to Hyde Park to hear the people making speeches. ~ You'll be too late. By the time you get there they (finish) their speeches and everybody (go) home.
24. By midnight he (be) unconscious for forty-eight hours.
25. By the end of the month 5,000 people (see) this exhibition.
26. I suppose that when I come back in ten years' time all these old houses (be) pulled down.
27. On 21 October they (be) married for twenty-five years.
28. After this performance I (see) *Hamlet* twenty-two times.
29. The strike leader said, 'By midnight 500 men (come) out on strike.'
30. At your present rate you (burn) all that coal by the end of the month,
31. The treasurer said, 'By the end of the year all our debts (be paid) off.'
32. Tourist: We've only got five hours in Rome; we are leaving but I'm sure that we (see) everything of importance by then.
33. Householder to Zoo official: One of your elephants is in my garden eating my tomatoes.
34. Zoo official: The elephant keeper will be with you in half an hour.
35. Householder: Your elephant (eat) all my tomatoes by then.

**Future forms**

**The present continuous tense as a future form**

*16. Put the verbs in brackets into the present continuous tense.*

1. They are going to drill for oil here. They (start) on Monday.
2. My uncle (make) a speech on Friday.
3. I (take) my .sister to the ballet tomorrow.
4. She (call) for me at six.
5. He (play) at Wimbledon next summer.
6. I (meet) her at the station at ten.
7. The sales (not start) till Monday.
8. How you (get) to the party tomorrow?-I (go) by car. –Who (drive)?
9. The piano tuner (come) this afternoon.
10. You (give) him anything for his birthday?-Yes, I (give) him a dictionary.
11. The windows (be) cleaned today. Then we'll be able to see out
12. She (come) out of hospital next week.
13. We (have) dinner early tonight as we (go) to the theatre.
14. Where you (go) for your holidays this year? – I (go) to Holland.
15. He (not give) a lecture tonight.
16. I (have) my photograph taken tomorrow.
17. I (buy) her a burglar alarm for a wedding present.
18. The elections (be) held next week.
19. I (have) lunch with my aunt on Thursday.
20. The committee (meet) next Wednesday.
21. My grandparents (celebrate) their golden wedding next week.
22. I (lend) him my cat for his holidays.
23. The strikers (return) to work next week.
24. Smith's (open) a new branch onthis street in July.
25. We've bought a new house and (move) in very soon.
26. I (not take) up judo next winter.
27. They (get) married next week.
28. You (do) anything tonight?-Yes, I (go) to my carpentry class.
29. The Prime Minister (fly) to America tomorrow.
30. He (start) a new job on Friday.
31. The Queen (give) a garden party next week. You (go)?
32. I (catch) the 6.30 plane tomorrow. -Where you (leave) your car? – I (not take) the car.
33. Her mother (send) her to France next year.
34. I (go) to the dentist tomorrow. Miss Pitt (take) my class.
35. I (lend) my flat to my American cousins next year.

**The *be going to* form**

*17. Put the verbs in brackets into the* ***be going*** *to form.*

1. You (miss) your train.
2. The pressure cooker (explode).
3. When you (pay) the bill?
4. She (dye) the old curtains blue,
5. We (make) this whisky bottle into a lamp.
6. What you (do) with this room? – I (paint) the walls in black and white stripes.
7. The umpire (blow) his whistle.
8. You (eat) all that?
9. That man with the tomato in his hand (throw) it at the speaker.
10. The bull (attack) us.
11. It (rain). Look at those clouds.
12. The cat (have) kittens.
13. The men in the helicopter (try) to rescue the man in the water.
14. That rider (fall) off.
15. These two men (cycle) across Africa.
16. The Lord Mayor is standing up. He (make) a speech.
17. This aeroplane (crash).
18. I (stop) here for a moment to get some petrol.
19. You (ask) him to help you?
20. I've lent you my car once. I (not do) it again.
21. I have seen the play. Now I (read) the book.
22. I (not sleep) in this room. It is haunted.
23. We (buy) a metal detector and look for buried treasure.
24. You (reserve) a seat?
25. I (plant) an oak tree here.
26. The dog (bury) the bone.
27. I (have) a bath.
28. I don't like this macaroni. I (not finish) it.
29. I (not stay) here another minute.
30. We (make) a lot of money out of this.

**The present continuous and the *be going to* form**

*18. Use the present continuous where possible in the following sentences and put* *the remaining verbs into the* ***be going to*** *form.*

1. I (play) bridge tonight with Tom and Ann.
2. He (have) an operation next week.
3. It's very cold. I (light) a fire.
4. We (have) some friends to lunch tomorrow.
5. I've bought a piano; it (be) delivered this afternoon. – Where you (put) it? – I (put) it in the dining room.
6. You (go) to the auction tomorrow? *-*Yes, I (go) but 1 (not buy) anything.
7. I've reminded you once; I (not do) it again.
8. I (have) my hair cut this afternoon.
9. My nephew (come) to stay with me next weekend. – Where you (put) him? – I (put) him in the room in the tower.
10. Our class (start) German next term.
11. I (spend) a few days in London next week.
12. The Town Council (build) a new school here.
13. What you (tell) the police? – I (tell) them the truth.
14. He (start) tomorrow.
15. The Queen (open) Parliament next month.
16. The Prime Minister (speak) on TV tonight.
17. This shop (close) down next week.
18. When you (have) your next lesson? – I (have) it on Monday.
19. I (collect) my new dress this afternoon.
20. We (take) the children to the seaside this summer.
21. I (give) him a football for his next birthday.
22. She (sing) in her first big concert next month.
23. He (go) to Spain for his holidays. – He (fly)? – No, he (go) by boat.
24. She (see) a specialist next week.
25. He (wash) the car?
26. He (ring) me up tonight.
27. The inspector (ask) you a few questions.
28. Her parents (give) a party for her next month. They (invite) sixty guests.
29. Have you got a ticket for the big match on Saturday? - No, I don't even know who (play). – France (play) England.
30. What you (do) with the money?
31. I (pick) you up at 6.30; don't forget.
32. Where you (go) tonight? – I (go) out with Peter. He (call) for me at eight.
33. I (compete) in the bicycle race tomorrow.
34. Mr. Pitt has just phoned to say that he (not come) back till Wednesday night.
35. I (read) you his answer to my letter of complaint.

**The present continuous and the future simple**

*19. Put the verbs in brackets into the present continuous or the future simple using the present continuous where possible.*

1. I am sure that I (recognize) him.
2. I (see) her tomorrow.
3. He (play) in a tennis match on Friday.
4. She (come) back on Monday.
5. I (go) again next year.
6. We (know) tonight.
7. I (believe) it when I see it.
8. I (have) my car repainted next week.
9. I hope that you (have) a good time tomorrow.
10. Tom (catch) the 7.40 train.
11. Where you (meet) them? – I (meet) them at midnight in the middle of the wood.
12. Look I’ve broken the teapot. What Mrs. Pitt (say)? – She (not mind); she never liked that one.
13. He (not forget) to come.
14. He (leave) in a few days.
15. I (remember) it.
16. If you drop that bottle it (break).
17. I never (forgive) him.
18. I'm sure that you (like) him.
19. You (see) a signpost at the end of the road,
20. He has cut my hair too short. - Don't worry; it (grow) again very quickly.
21. You (understand) when you are older.
22. The cat (scratch) you if you pull its tail.
23. I (be) back at 8.30.
24. If he doesn't work hard he (not pass) his exam.
25. She (go) on a cruise next summer.
26. I (move) to a new flat next week.
27. I am sorry that the child saw the accident. - I don't think it matters. He soon (forget) all about it.
28. I (wait) here till he comes back.
29. He (not write) to you unless you write to him.
30. There (be) a big meeting here tomorrow.

**Passive Voice**

*20. Active to passive. Put the following into the passive voice.*

1. You should open the wine about three hours before you use it.
2. Previous climbers had cut steps in the ice.
3. Somebody had cleaned my shoes and brushed my suit.
4. We use this room only on special occasions.
5. You must not hammer nails into the walls without permission.
6. Someone switched on a light and opened the door.
7. Somebody had slashed the picture with a knife.
8. They are pulling down the old theatre.
9. Why didn't they mend the roof before it fell in?
10. The police asked each of us about his movements on the night of the crime.
11. Someone will serve refreshments.
12. People must not leave bicycles in the hall.
13. Members may keep books for three weeks. After that they must return them.
14. The burglars had cut an enormous hole in the steel door.
15. I've bought a harp. They are delivering it this afternoon. *(Do not change the first sentence.)*
16. Someone has already told him to report for duty at six.
17. They rang the church bells as a flood warning.
18. No one can do anything unless someone gives us more information.
19. People are spending far more money on food now than they spent ten years ago.
20. The organizers will exhibit the paintings till the end of the month.
21. They will say nothing more about the matter if someone returns the stolen gun.
22. It is high time someone told him to stop behaving like a child.
23. A thief stole my dog and brought him back only when I offered £20 reward for him.
24. The judge gave him two weeks in which to pay the fine.
25. They make these artificial flowers of silk.

**Indirect speech**

**Indirect speech: statements**

*21. Put the following into indirect speech.*

1. ‘I have something to show you,' I said to her.
2. 'Nothing grows in my garden. It never gets any sun,' she said.
3. ‘I'm going away tomorrow, mother,' he said.
4. ‘I've been in London for a month but so far I haven't had time to visit the Tower,' said Rupert.
5. ‘It isn't so foggy today as it was yesterday,' I remarked.
6. ‘'The new underpass is being officially opened the day after tomorrow, 'said the BBC announcer.
7. 'We have moved into our new flat. We don't like it nearly so much as our last one,' said my aunt.
8. 'We have a lift but very often it doesn't work,' they said.
9. 'From one of the windows of my flat I can see the Eiffel Tower,' he said.
10. ‘I've no idea what the time is but I'll dial 8081 and find out,' said his daughter.
11. He said, 'My wife has just been made a judge.'
12. ‘I'll come with you as soon as I am ready,' she replied.
13. ‘I have a German lesson this afternoon and I haven't done my homework yet,' said the small boy.
14. ‘If you let the iron get too hot you will scorch your clothes,' I warned her.
15. ‘'You haven't given me quite enough. The bill is for £14 and you've paid me only £13,' he pointed out.
16. Ann said, 'Englishmen make good husbands because they are nearly always willing to help in the house.'
17. Mary answered, ‘I like men to be useful but I don't like them to be too domesticated. I‘d prefer them to keep out of the kitchen altogether. Men look silly in aprons anyway.'
18. Motoring report: The new Rolls Royce runs so quietly that all you can hear is the ticking of the clock.
19. Managing director of the Rolls Royce company: In that case we'll have to do
20. something about the clock.
21. ‘I don't know what to do with all my plums. I suppose I'll have to make jam. The trouble is that none of us eats jam,' she said.
22. 'We like working on Sundays because we get double pay,' explained the builders.
23. He said, ‘I am quite a good cook and I do all my own washing and mending too.'
24. 'You can keep that one if you like, Joan,' he said. I've got plenty of others.'
25. ‘I'm going fishing with mother this afternoon,' said the small boy, 'and we are going into the garden now to dig for worms.' (*Omit* now).
26. 'You've got my umbrella,' I said crossly. 'Yours is in your bedroom.'
27. I know exactly what they said,' the private detective explained to his client, 'because I bugged their phone.'
28. ‘I'll sit up till she comes in, but I hope she won't be late,' he said.
29. ‘If you give me some wire, I'll hang that picture for you,' said my cousin.
30. ‘I have a Turkish bath occasionally, but it doesn't seem to make any difference to my weight,' she said.
31. ‘This is quite a good model, madam. I use one of these myself,' said the salesman.
32. 'My new house is supposed to be haunted, but so far I haven't seen any ghosts,' she said.
33. The advertisement said, If you answer the questions correctly you may win £100.'
34. ‘If I press my ear against the wall, I can hear what the people in the next flat are saying,' he said.
35. 'The mirror is there so that you can see yourself when you are dancing,' the instructress told him.

**Indirect speech: questions**

*22. Put the following into indirect speech.*

*The first ten questions require no change of order:*

He said, 'What is happening? – He asked what was happening.

*You can read the last twenty questions, using one of the following prefaces:*

***I wonder/I'd like to know/Do you know?/Have you any idea?/Can you tell me?***

He asked, ‘Where is the nearest bus stop?’ - 'Do you know where the nearest bus stop is?'

1. 'What happened to Mr Budd?' said one of the men.
2. 'Which of his sons inherited his estate?' asked another.
3. 'Who is going to live in the big house?' enquired a third.
4. 'What will happen to his racehorses?' asked someone else.
5. 'Which team has won?' asked Ann.
6. 'Which team won the previous match?' said Bill.
7. 'Who is playing next week?' he asked.
8. 'Who will be umpiring that match?' asked Tom.
9. 'Who wants a lift home?' said Ann.
10. 'Who has just dropped a £10 note?' I asked.
11. 'Where is the ticket office?' asked Mrs Jones.
12. 'What shall I do with my heavy luggage?' she said.
13. 'What platform does the train leave from?' asked Bill.
14. 'When does it arrive in York?' he asked.
15. 'When was the timetable changed?' I asked.
16. 'Why has the 2.30 train been cancelled?' said Ann.
17. 'How much does a day return to Bath cost?' Mrs Jones asked.
18. 'Why does the price go up so often?' she wondered.
19. 'How can I get from the station to the airport?' said Bill.
20. 'When are you coming back?' I asked them.
21. Is a return ticket cheaper than two singles?' said my aunt.
22. 'Do puppies travel free?' asked a dog owner.
23. 'Can I bring my dog into the compartment with me?' she asked.
24. 'Does this train stop at York?' asked Bill.
25. 'Can you telephone from inter-city trains?' said the businessman.
26. 'Does the 2.40 have a restaurant car?' he enquired.
27. 'Can you get coffee on the train?' asked my aunt.
28. 'Do they bring it round on a trolley?' she said.
29. 'Are there smoking compartments?' said the man with the pipe.
30. 'Have you reserved a seat?' I asked him.

**Indirect speech: commands, requests, advice**

*23. Put the following into indirect speech. In most cases the person addressed must be supplied.*

1. He said, 'Get out of my way.'
2. 'Climb in through the window,' he ordered.
3. 'Please pay at the desk,' said the assistant.
4. 'Open your bag, please,' said the store detective.
5. 'Don't worry about anything, Mrs Pitt,' said her lawyer. 'Leave it all to me.'
6. 'Don't use bent coins in a slot machine,' I warned him.
7. 'Follow that car,' the detective said to the taxi-driver.
8. 'Wash it in lukewarm water,' recommended the assistant.
9. 'Have confidence in me,' urged the doctor.
10. 'Take me up to the 33rd floor,' he said to the liftman.
11. 'Read the notice about life-saving equipment,' advised the air-hostess.
12. 'Always cook with butter,' said her mother, 'never use margarine.'
13. 'Don't argue with your father,' I said.
14. 'Wait for me at the bridge,' said the young man.
15. 'Don't eat too much starch,' I advised her, 'and avoid fried food.'
16. 'Don't say anything to make her angry,' said my father.
17. Notice: Please do not ask at the desk for change for telephone calls.
18. 'Don't forget to feed the goldfish,' Mary said to her brother.
19. 'Cross the line by the footbridge,' said the porter.
20. 'Write to me as often as you can,' said his wife.
21. 'Please book me a seat in a non-smoker,' said the traveller.
22. 'Don't forget your sandwiches,' said his mother.
23. 'Don't go near the water, children,' she said.
24. 'Search the house,' said the police sergeant.
25. 'Put down that gun. It's loaded,' she warned.

**ГРАМАТИЧНИЙ ДОВІДНИК**

**ТЕПЕРІШНІЙ ПРОСТИЙ ЧАС**

**THE PRESENT SIMPLE TENSE**

**УТВОРЕННЯ**

*Стверджувальна форма* дієслова в ***Present Simple*** в усіх особах однини і множини, крім третьої особи од­нини, збігається з інфінітивом (неозначеною формою діє­слова) без частки **to**:

|  |  |
| --- | --- |
| *І study*  *we study*  *you study*  *they study* | я навчаюся  ми навчаємося  ви навчаєтеся  вони навчаються |

У третій особі однини до інфінітива без частки to до­дається закінчення **-s** або **-es**:

*to invite – he invit****es****, to teach – she teach****es***

Більшість дієслів у третій особі однини мають закін­чення **-s**. Закінчення **-es** додається в таких випадках:

а) якщо дієслово закінчується на **s, ss, ch, tch, x**:

*to kiss – kiss****es****, to flash – flash****es***

б) якщо дієслово закінчується на у з попередньою приголосною (буква **у** змінюється перед **-es** на **і**):

*to multiply – multipl****ies****, to dry – dr****ies***

*Але:* якщо перед у стоїть голосна, то додається лише закінчення **-s**:

*to say – say****s****, to obey – obey****s***

в) якщо дієслово закінчується на **о**:

*to go – go****es****, to do – do****es***

*Питальна форма* ***Present Simple*** утворюється за допомогою допоміжного дієслова **do** або **does**, яке ста­виться перед підметом:

|  |  |
| --- | --- |
| ***Do*** *I study?*  ***Do*** *we study?* | ***Does*** *he read?*  ***Does*** *she write?* |

**Примітка**. Якщо питальне слово виконує роль підмета або означення до підмета, допоміжне дієслово **do** або **does** у цьому випадку не вживається:

*Who lives there? Whose father lives there?*

*Заперечна форма* ***Present Simple*** утворюється за до­помогою допоміжного дієслова **do** або **does**, заперечної частки **not** та інфінітива основного дієслова без частки **to**:

*І* ***do not*** *study. Не* ***does not*** *study.*

У розмовній мові замість **do** **not** і **does not** вживають­ся скорочені форми **don't** і **doesn't**:

*І* ***don't*** *see you. He* ***doesn't*** *see me.*

Дієслово **to be** в ***Present Simple*** має форми:

|  |  |
| --- | --- |
| *I* ***am***  *he* ***is***  *she* ***is***  *it* ***is*** | *we* ***are***  *you* ***are***  *they* ***are*** |

Питальна та заперечна форми дієслова **to be** утворю­ються без допоміжного дієслова **to do**:

*Are you an engineer? I am not an engineer.*

**ВЖИВАННЯ**

***Present Simple*** вживається для вираження:

1) звичайної, повторюваної дії в теперішньому часі:

*Не goes to see her every day.*

2) дії, яка характеризує підмет постійно:

*Не speaks both French and English.*

3) загальновідомих істин:

*Water is a liquid.*

4) запланованої майбутньої дії в підрядних часу, причини та умови:

*І shall be there till he comes.*

5) запланованої майбутньої дії з дієсловами, що означають рух:

*His train arrives tomorrow morning.*

**ПАСИВНИЙ СТАН**

Пасивний стан ***Present Simple*** утворюється за допо­могою дієслова **to be** та дієприкметника минулого часу *(Past Participle)* основного дієслова:

*Не* ***is*** *interrogat****ed****. І* ***am*** *ask****ed*** *about it.*

**МИНУЛИЙ ПРОСТИЙ ЧАС**

**THE PAST SIMPLE TENSE**

**УТВОРЕННЯ**

*Стверджувальна форма* дієслова в ***Past Simple*** в усіх особах однини та множини збігається з другою фор­мою дієслова:

|  |  |
| --- | --- |
| *І worked*  *we worked*  *you worked* | я працював  ми працювали  ви працювали |

В англійській мові дієслова поділяються на правильні та неправильні. ***Past Simple*** правильних дієслів утво­рюється додаванням до інфінітива без частки to закін­чення **-ed**, яке вимовляється як:

**[t]** *–* **після глухих приголосних, крім t:**

*to ask – asked to, like – liked*

**[d]** *–* **після дзвінких приголосних, крім d, та після** **голосних:**

*to clean – cleaned, to live – lived, to answer – answered*

**[id]** *–* **після t, d, te, de:**

*to want – wanted, to defend – defended, to hate – hated, to decide – decided*

**Правопис правильних дієслів у *Past Simple*:**

а) якщо інфінітив закінчується на голосну **e**, то в ***Past Simple*** перед закінченням **-ed** вона не пишеться:

*to love — lov****ed***

б) якщо інфінітив закінчується на голосну **у**, перед якою стоїть приголосна, то перед закінченням **-ed** буква **у** змінюється на **і**:

*to study — stud****ied****, to cry — cr****ied***

в) якщо інфінітив закінчується на одну приголосну, якій передує короткий наголошений голосний звук, то кінцева приголосна подвоюється:

*to stop — sto****pp****ed to permit — permi****tt****ed*

г) кінцева буква **r** подвоюється, якщо останній склад наголошений і не має дифтонга (подвійного голосного звука):

*to prefer — prefe****rr****ed, to occur — occu****rr****ed*

д) кінцева буква **1** подвоюється, якщо їй передує ко­роткий голосний звук (наголошений чи ненаголошений):

*to travel — trave****ll****ed, to fulfil - fulfi****ll****ed*

**Форма *Past Simple* неправильних дієслів утворюється по-різному.**

*Питальна форма* ***Past Simple*** правильних і непра­вильних дієслів утворюється за допомогою допоміжного дієслова **did** та інфінітива основного дієслова без частки **to.** Допоміжне дієслово ставиться перед підметом:

***Did*** *you go to the Institute yesterday? What* ***did*** *he say?*

*Заперечна форма* ***Past Simple*** утворюється за допо­могою допоміжного дієслова **did,** заперечної частки **not** та інфінітива основного дієслова без частки **to.** Допо­міжне дієслово ставиться між підметом і присудком:

*І* ***did not*** *know this. They* ***did not*** *work.*

У розмовній мові замість **did not** вживається скороче­на форма **didn't:**

*І* ***didn't*** *understand you.*

Дієслово **to be** в ***Past Simple*** має форми **was** і **were:**

|  |  |
| --- | --- |
| *I* ***was*** | *we* ***were*** |
| *you* ***were*** | *you* ***were*** |
| *he* ***was***  *she* ***was***  *it* ***was*** | *they* ***were*** |

Питальна та заперечна форми дієслова **to be** утворюються без допоміжного дієслова **did:**

***Were*** *you at home yesterday? I* ***was not*** *at home*

У розмовній мові замість **was not, were not** вжива­ються форми **wasn't, weren't:**

*They* ***weren't*** *afraid of him.*

**ВЖИВАННЯ**

***Past Simple*** вживається для вираження:

1) одноразової або повторюваної дії в минулому. Час минулої дії часто уточнюється обставинами **yesterday, last week, the other day, ago** тощо:

*I saw you in the street yesterday. They lived in London before the war.*

2) ряду послідовних дій у минулому:

*І dressed, went downstairs, had some coffee in the kitchen and went out to the garage.*

3) повторюваної дії у минулому:

*І saw her every day.*

**ПАСИВНИЙ СТАН**

Пасивний стан ***Past Simple*** утворюється за допомо­гою допоміжного дієслова **to be** в ***Past Simple*** і ***Past Participle*** основного дієслова:

|  |  |
| --- | --- |
| *І* ***was*** *examin****ed***  *you* ***were*** *examin****ed***  *he* ***was*** *examin****ed***  *she* ***was*** *examin****ed***  *it* ***was*** *examin****ed*** | *we were examin****ed***  *you were examin****ed***  *they were examin****ed*** |

**МАЙБУТНІЙ ПРОСТИЙ ЧАС**

**THE FUTURE SIMPLE TENSE**

**УТВОРЕННЯ**

***Future Simple*** утворюється за допомогою допоміж­них дієслів **shall** і **will** та інфінітива основного дієслова без частки **to.** Допоміжне дієслово **shall** вживається в першій особі однини і множини, **will** – у другій і третій особах:

|  |  |
| --- | --- |
| *І* ***shall/will*** *stand*  *you* ***will*** *stand*  *he* ***will*** *stand*  *she* ***will*** *stand*  *it* ***will*** *stand* | *we* ***shall/will*** *stand*  *you* ***will*** *stand*  *they* ***will*** *stand* |

**Примітка**. У сучасній англійській мові допоміжне дієслово **will** вживається для утворення ***Future Simple*** в усіх особах.

У розмовній мові замість **shall** і **will** звичайно вжива­ється скорочена форма **'ll**, яка на письмі приєднується до підмета:

*I****’ll*** *tell it to you after dinner.Я розкажу Вам про це після обіду.*

*He****’ll*** *be back in an hour. Він повернеться за годину.*

У *питальній формі* допоміжне дієслово ставиться пе­ред підметом:

***Shall*** *we come back here?* Ми повернемося сюди?

*When* ***will*** *he be at home?* Коли він буде вдома?

У *заперечній формі* після допоміжного дієслова вжи­вається заперечна частка **not:**

*We* ***shall not*** *go there.* Ми не підемо туди.

*Не* ***will not*** *stay here.* Він не залишиться тут.

У розмовній мові замість **shall not** і **will not** вжива­ються скорочені форми **shan't** і **won't:**

*І* ***shan't*** *go there.* Я не піду туди.

*She* ***won't*** *go to the theatre.* Вона не піде до театру.

**ВЖИВАННЯ**

***Future Simple*** вживається для вираження однора­зової, постійної або повторюваної дії в майбутньому:

*I'll go there with you.* Я поїду туди з тобою.

*I'll always come back.* Я завжди повертатимусь.

*He'll work at the factory next year.* Наступного року він працюватиме на фабриці.

В англійській мові ***Future Simple*** не вживається в підрядних часу та умови. Для вираження майбутньої дії в таких реченнях вживається ***Present Simple***:

*I'll be here till you* ***come****. Я буду тут, доки ти прийдеш.*

*I'll give it to him when he* ***comes*** *back. Я дам це йому, коли він noвернеться.*

**ПАСИВНИЙ СТАН**

Пасивний стан утворюється за допомогою допоміжно­го дієслова **to be** у ***Future Simple*** і ***Past Participle*** основного дієслова:

*І (we)* ***shall be*** *examin****ed****.*

*He (she, it, you, they)* ***will be*** *examin****ed****.*

**ТЕПЕРІШНІЙ ТРИВАЛИЙ ЧАС**

**THE PRESENT CONTINUOUS TENSE**

**ДІЄПРИКМЕТНИК ТЕПЕРІШНЬОГО ЧАСУ**

**THE PRESENT PARTICIPLE**

**УТВОРЕННЯ**

1. ***Present Participle***утворюється за допомогою закін­чення **-ing**, яке додається до інфінітива дієслова без час­тки **to**:

*to read — read****ing***

1. Якщо інфінітив закінчується на німе **e**, то перед за­кінченням **-ing** воно опускається:

*to writ****e*** *— writ****ing***

1. Якщо інфінітив закінчується однією приголосною буквою, якій передує короткий наголошений голосний звук, то перед закінченням кінцева приголосна подвою­ється:

*to sit — si****tt****ing, to begin — begi****nn****ing*

**Примітка.** Кінцева буква **k** після **оо** не подвоюється: *look — looking*

1. Кінцева буква **г** подвоюється, якщо останній склад наголошений і не містить дифтонга:

*to prefer — prefe****rr****ing*

1. Кінцева буква **1** подвоюється, якщо їй передує корот­кий голосний звук (наголошений чи ненаголошений):

*to compel – compe****ll****ing to travel – trave****ll****ing*

1. У дієсловах *to lie, to tie, to die*буквосполучення **іе** перед закінченням **-ing** змінюється на **у**:

*to l****ie*** *— l****y****ing to t****ie*** *— t****y****ing to d****ie*** *— d****y****ing*

**Примітка**.Кінцева буква у перед закінченням **-ing** не змінюється:

*to tr****y****- tr****y****ing*

**ТЕПЕРІШНІЙ ТРИВАЛИЙ ЧАС**

**THE PRESENT CONTINUOUS TENSE**

**УТВОРЕННЯ**

***Present Continuous*** утворюється за допомогою допоміжного дієслова **to be** в ***Present Indefinite*** і дієприкметника теперішнього часу ***(Present Participle)*** основного дієслова.

*Стверджувальна форма* ***Present Continuous****:*

|  |  |
| --- | --- |
| *I* ***am*** *speak****ing*** *(I'm speaking)*  *he* ***is*** *speak****ing*** *(he's speaking)*  *she* ***is*** *speak****ing*** *(she's speaking)*  *it* ***is*** *speak****ing*** *(it's speaking)* | *we* ***are*** *speak****ing*** *(we're speaking)*  *you* ***are*** *speak****ing*** *(you're you speaking)*  *they* ***are*** *speak****ing*** *(they're speaking)* |

У дужках подано скорочені форми, що вживаються в розмовній мові.

У *питальній формі* допоміжне дієслово ставиться пе­ред підметом:

***Are*** *the boys playing chess?*

***Is*** *she working in the garden?*

*What* ***are*** *you doing?*

У *заперечній формі* після допоміжного дієслова вжи­вається заперечна частка not:

*The girls* ***are not*** *singing.*

У розмовній мові замість **is not** i **are not** вживають­ся скорочені форми **isn't** і **aren't**:

*She* ***isn't*** *listening in. Why* ***aren't*** *you working?*

**ВЖИВАННЯ**

***Present Continuous*** вживається для вираження:

1) дії, що відбувається в момент мовлення:

*You are not listening to me.*

2) тривалої дії, що відбувається в певний період тепе­рішнього часу, хоч і не обов'язково в момент мовлення:

*What are you doing here in London? I'm studying at the University.*

3) тривалої дії, що відбувається одночасно з іншою дією, яка належить до теперішнього часу:

*І am only happy when I am working.*

4) запланованої майбутньої дії, особливо з дієслова­ми, що означають рух:

*We are flying to Paris in the morning.*

*When are you coming back?*

*Is he coming tonight?*

5) роздратування мовця щодо дії, яка відбувається постійно (зазвичай із словами *always, constantly, continually)*

*He is always loosing things.*

Дієслово **to go** у ***Present Continuous*** з інфінітивом іншого дієслова означає намір виконати дію в найближ­чому майбутньому або надає відтінку обов'язковості, неминучості виконання дії, позначеної інфінітивом:

*І am* ***going******to speak****.*

*It's* ***going******to rain.***

*He is* ***going to be*** *an engineer.*

**Verbs not normally used in the Continuous Tenses**

**Stative verbs** refer to ‘states’. A state has no beginning and no end. We don’t ‘control’ it

**There are 3 cases of verbs:**

* Dynamicverbs which have simple and continuous forms

*I often* ***listen*** *to music.*

*I’****m listening*** *to music now.*

* Verbs which are always stative

*She* ***loves*** *her baby.*

* Verbs that have stative and dynamic uses

*I’****m weighting*** *myself*

*I* ***weight*** *80 kilos.*

1. Verbs of senses

*hear, see, smell, feel, notice, taste*

1. Verbs of feelings and emotions

*hate, like, dislike, love, need, prefer, want, wish, hope*

1. Verbs of mental activity

*believe, imagine, know, mean, realize, recognize, remember, suppose, understand, seem, expect, agree, doubt, forget, prefer*

1. Verbs of possession and being

*have, be, belong, concern, consist, contain, depend, involve, matter, need, owe, own, possess, cost, weight, come from*

**ПАСИВНИЙ СТАН**

Пасивний стан ***Present Continuous*** утворюється за до­помогою допоміжного дієслова **to be** в ***Present Continuous*** і ***Past Participle*** основного дієслова:

|  |  |
| --- | --- |
| *І am being examined.*  *He (she, it) is being examined.*  *We (you, they) are being examined.* | *Am I being examined?*  *Is he (she, it) being examined?*  *Are we (you, they) being examined?* |

**МИНУЛИЙ ТРИВАЛИЙ ЧАС**

**THE PAST CONTINUOUS TENSE**

**УТВОРЕННЯ**

*Стверджувальна форма* дієслова в ***Past Continuous*** утворюється за допомогою допоміжного дієслова **to be** в ***Past Simple*** і дієприкметника теперішнього часу ***(Present Participle)*** ос­новного дієслова:

|  |  |
| --- | --- |
| *І* ***was*** *mak****ing***  *you* ***were*** *mak****ing***  *he* ***was*** *mak****ing***  *she* ***was*** *mak****ing***  *it* ***was*** *mak****ing*** | *we* ***were*** *mak****ing***  *you* ***were*** *mak****ing***  *they* ***were*** *mak****ing*** |

У *питальній формі* допоміжне дієслово ставиться пе­ред підметом:

*What* ***were*** *you telling him?*

У *заперечній формі* після допоміжного дієслова вжива­ється заперечна частка **not:**

*І w****as not*** *watching TV in the evening.*

У розмовній мові в заперечній і питально-заперечній формах замість **was not** і **were not** вживаються переваж­но скорочені форми **wasn't** і **weren't:**

*Не* ***wasn't*** *coming.* ***Wasn't*** *he coming?*

*They* ***weren't*** *coming.* ***Weren't*** *they coming?*

**ВЖИВАННЯ**

***Past Continuous*** вживається для вираження:

1) дії, що відбувалася, тривала в певний момент у минулому. На час дії звичайно вказують обставинні сло­ва типу **at two o'clock, at midnight, at that moment** або підрядні з дієсловом присудком у ***Past Simple***:

*Не was working at his English* ***at that time****. She was sitting by the window* ***when he came in.***

2)дії, що тривала протягом якогось часу в минулому:

*In spring he was visiting his old school-fellow.*

**ПАСИВНИЙ СТАН**

Пасивний стан ***Past Continuous*** утворюється за допомогою допоміжного дієслова **to be** в ***Past Continuous*** і ***Past Participle*** основного дієслова:

*І (he, she, it) was being examined. We (you, they) were being examined.*

*Питальна і заперечна форми* утворюються таким чином:

***Was*** *he being taught? He* ***was not*** *being taught.*

***Were*** *they being taught? They* ***were not*** *being taught.*

**МАЙБУТНІЙ ТРИВАЛИЙ ЧАС**

**THE FUTURE CONTINUOUS TENSE**

**УТВОРЕННЯ**

*Стверджувальна форма* ***Future Continuous*** утворю­ється за допомогою допоміжного дієслова **to be** у ***Future Simple*** та дієприкметника теперішнього часу ***(Present Participle)*** основ­ного дієслова:

|  |  |
| --- | --- |
| *І* ***shall be*** *translat****ing***  *you* ***will be*** *translat****ing***  *he* ***will be*** *translat****ing***  *she* ***will be*** *translat****ing*** | *we* ***shall be*** *translat****ing***  *you* ***will be*** *translat****ing***  *they* ***will be*** *translat****ing*** |

У *питальній формі* допоміжне дієслово **shall** або **will** ставиться перед підметом:

***Will*** *they be studying?* ***Shall*** *we be training?*

У *заперечній формі* після допоміжного дієслова **shall** або **will** вживається заперечна частка **not:**

*They* ***will not*** *be leaving for Kyiv. I* ***shall not*** *be painting.*

У розмовній мові замість **shall** і **will** вживається скорочення **’ll**, а замість **shall not** і **will not — shan’t** і **won't.**

**ВЖИВАННЯ**

***Future Continuous*** вживається для вираження трива­лої дії, що відбуватиметься в якийсь момент або період часу в майбутньому:

**I'll be looking out for you at two o'clock. We'll be playing all morning.**

**ТЕПЕРІШНІЙ ЗАВЕРШЕНИЙ ЧАС**

**THE PRESENT PERFECT TENSE**

**УТВОРЕННЯ**

**Present Perfect** утворюється за допомогою допоміжного дієслова **to have** у ***Present Simple*** і дієприкметника минулого часу ***(Past Participle)*** основного дієслова.

***Past Participle*** правильних дієслів утворюється дода­ванням до інфінітива закінчення **-ed**, тобто за формою **Past Participle** правильних дієслів не відрізняється від ***Past Simple***:

*І/we/you/they have discuss****ed***

*He/she has discuss****ed***

У розмовній мові вживаються переважно скорочені форми:

***I've*** *worked.* ***He's*** *worked.* ***We've*** *worked.*

У *питальній формі* допоміжне дієслово ставиться перед підметом:

***Have*** *you ever lived in a village?* ***Has*** *she congratulated him?*

У *заперечній формі* після допоміжного дієслова вживається заперечна частка **not:**

*My friend* ***has not*** *come yet. We* ***have not*** *discussed it.*

У розмовній мові замість **have not** i **has not** вживаються скорочені форми **haven't, hasn't** або **'ve not, 's** **not:**

*I****’ve not*** *done anything. You* ***haven't*** *changed much. He****'s not*** *come yet.*

У питально-заперечних реченнях вживаються скорочені форми **haven't** і **hasn't,** які ставляться перед підметом:

***Hasn'****t he been to Paris? Why* ***haven't*** *you put on your coat?*

**ВЖИВАННЯ**

**Present Perfect** вживається для вираження дії, яка відбулася до моменту мовлення, і результат цієї минулої дії пов'язаний з цим моментом:

*І have locked the door. Have you turned off the gas?*

Час дії, вираженої дієсловом у **Present Perfect**, здебільшого не зазначається, тому що в центрі уваги результат дії, а не час її перебігу:

*What have they done? You have read more than me.*

**Present Perfect** вживається також у реченнях з такими обставинами часу:

а) що означають період часу, який почався в минулому і тривав до моменту мовлення: **up to now, up to the present** – до цього часу; **lately** – нещодавно, останнім часом; **recently** – останнім часом; **so far** – до цього часу; **since** – відтоді; **not yet** – ще не:

*Up to now we have done three exercises.*

*Have you seen them recently?*

*Have you heard from your sister lately?*

б) що означають період часу, який ще не закінчився: **today** – сьогодні; **this week** – цього тижня; **this month** – цього місяця; **this year** – цього року; **this morning** – сьогодні вранці:

*Have you seen her today? Has he visited a dentist this month?*

З цими обставинами часу вживається також Past Indefinite, якщо в реченні є слова, які вказують на дію в минулому:

*A letter came from them today when he was at work.*

в) з прислівниками неозначеного часу і частотності: **ever** – коли-небудь; **never** – ніколи; **often** – часто; **seldom** – рідко; **already** –вже; **just** – щойно:

*Have you ever thought about it? I've often heard him tell the tale. We've just arrived.*

З цими прислівниками вживається також ***Past Simple***:

*I told you already. I never saw him in my life.*

***Present Perfect*** не вживається з обставинними словами та словосполученнями, які уточнюють час минулої дії: **yesterday** – вчора; **last week** – минулого тижня тощо:

*She went yesterday. When did you see him?*

***Present Perfect*** вживається для вираження дії або стану, що триває з якогось моменту в минулому до моменту мовлення. У цьому значенні ***Present Perfect*** вживається переважно з дієсловами, що не мають форми ***Continuous***:

*І have known her for years.*

*I have not seen you for a whole month.*

**ПАСИВНИЙ СТАН**

Пасивний стан ***Present Perfect*** утворюється за допомогою допоміжного дієслова **to be** в ***Present Perfect*** і ***Past Participle*** основного дієслова:

|  |  |
| --- | --- |
| *І have been examined*  *you have been examined*  *he has been examined*  *she has been examined*  *it has been examined* | *we have been examined*  *you have been examined*  *they have been examined* |

**МИНУЛИЙ ЗАВЕРШЕНИЙ ЧАС**

**THE PAST PERFECT TENSE**

**УТВОРЕННЯ**

***Past Perfect*** утворюється за допомогою допоміжного дієслова **to have** в ***Past Simple*** і дієприкметника минулого часу ***(Past Participle)*** основного дієслова. Дієслова в ***Past Perfect*** не змінюються за особами й числами:

*І (she, he, it, we, you, they)* ***had*** *bak****ed****.*

У розмовній мові замість **had** вживається скороче­на форма **'d**, яка на письмі приєднується до підмета:

*I****'d*** *(he****'d****, she****'d****, we****'d****, you****'d****, they****'d****) cooked.*

У *питальній формі* допоміжне дієслово ставиться перед підметом:

***Had*** *you helped?*

У *заперечній формі* після допоміжного дієслова вживається заперечна частка **not:**

*І had* ***not*** *ordered.*

У розмовній мові в заперечній і питально-заперечній формах вживається скорочена форма **hadn't:**

*Не* ***hadn't*** *required.* ***Hadn't*** *he required?*

**ВЖИВАННЯ**

**Past Perfect** вживається для вираження:

1) дії, яка відбулася раніше іншої минулої дії, позначеної дієсловом у ***Past Simple:***

*І told you I had met her.*

2) минулої дії, що вже закінчилася до певного моменту в минулому. Цей момент позначається такими словосполученнями: **by two o'clock** – до другої години, **by that time** – до того часу тощо:

*І had done my homework by eight o'clock.*

Заперечна форма ***Past Perfect*** вказує на те, що до певного моменту в минулому дія ще не закінчилася:

*І had not read the book by that time.*

3) дії, що почалася до певного моменту в минулому і тривала до цього моменту. У цьому значенні ***Past Perfect*** вживається переважно з дієсловами, які не мають форми ***Continuous***:

*When he came I had been there for an hour.*

**ПАСИВНИЙ СТАН**

Пасивний стан ***Past Perfect*** утворюється за допомогою допоміжного дієслова **to be** в ***Past Perfect*** і ***Past Participle*** основного дієслова:

*І (he, she, it, we, you, they)* ***had been*** *examin****ed****.*

У *питальній формі* допоміжне дієслово ставиться перед підметом:

***Had*** *he been examined?*

У *заперечній формі* після допоміжного дієслова **had** ставиться заперечна частка **not:**

*Не* ***had not*** *been examined.*

**МАЙБУТНІЙ ЗАВЕРШЕНИЙ ЧАС**

**THE FUTURE PERFECT TENSE**

**УТВОРЕННЯ**

*Стверджувальна форма* дієслова у ***Future Perfect*** утворюється за допомогою допоміжного дієслова **to have** у ***Future Simple*** і дієприкметника минулого часу ***(Past Participle)*** основного дієслова:

|  |  |
| --- | --- |
| *I shall have done it*  *you will have done it*  *he will have done it*  *she will have done it*  *it will have done it* | *we shall have done it*  *you will have done it*  *they will have done it* |

У *питальній формі* перше допоміжне дієслово **shall/will** вживається перед підметом:

***Shall*** *we have believed?* ***Will*** *he have believed?*

У *заперечній формі* після першого допоміжного дієслова **shall/will** вживається заперечна частка **not:**

*We* ***shall not*** *have done it. He* ***will not*** *have done it.*

У розмовній мові вживаються такі самі скорочення, як і у ***Future Simple***:

I**'ll** have done it.

I **shan't** have done it.

He **won't** have done it.

**ВЖИВАННЯ**

***Future Perfect*** вживається для вираження майбутньої дії, що закінчиться до певного моменту або до початку іншої дії в майбутньому:

*You'll have forgotten me by then.*

*I shall have read the story by the time you come.*

**ПАСИВНИЙ СТАН**

Пасивний стан ***Future Perfect*** утворюється за допомогою допоміжного дієслова **to be** у ***Future Perfect*** і ***Past Participle*** основного дієслова:

*І (we) shall have been examined.*

*He (she, it, you, they) will have been examined*.

**ТЕПЕРІШНІЙ ПЕРФЕКТНО-ТРИВАЛИЙ ЧАС**

**THE PRESENT PERFECT CONTINUOUS TENSE**

**УТВОРЕННЯ**

***Present Perfect Continuous*** утворюється за допомогою допоміжного дієслова **to be** в ***Present Perfect*** і дієприкметника теперішнього ***(Present Participle)*** часу основного дієслова:

|  |  |
| --- | --- |
| *І* ***have been*** *writ****ing***  *you* ***have been*** *writ****ing***  *he* ***has been*** *writ****ing***  *she* ***has been*** *writ****ing*** | *we* ***have been*** *writ****ing***  *you* ***have been*** *writ****ing***  *they* ***have been*** *writ****ing*** |

У *питальній формі* перше допоміжне дієслово ставиться перед підметом:

***Have*** *you been working?*

У *заперечній формі* після першого допоміжного дієслова вживається заперечна частка **not:**

*Не* ***has not*** *been coming.*

У *питально-заперечній формі* перше допоміжне дієслово ставиться перед підметом, а частка **not** – після підмета:

***Have*** *they* ***not*** *been writing?*

У розмовній мові вживаються такі самі скорочення, як і в ***Present Perfect***.

Стверджувальна форма: *I****'ve*** *been sewing. He's been sewing.*

Заперечна форма: *I* ***haven't*** *been sailing. He hasn't been sailing.*

Питально-заперечна форма: ***Haven't*** *you been rowing?*

**ВЖИВАННЯ**

**Present Perfect Continuous** вживається для вираження дії, що почалася в минулому і тривала протягом певного періоду, або все ще продовжується в цей момент, або щойно закінчилася:

***I have been learning*** *English for 5 years.*

*He* ***has been waiting*** *for her for two hours but she still hasn't come.*

*I****'ve been doing*** *my homework since dinner.*

***Present Perfect Continuous*** може вживатися без вказівки на тривалість дії:

*What* ***have*** *you* ***been reading****? I****'ve been expecting*** *you.*

Здебільшого на період тривалості дії вказують обставини часу, часто з прийменником **for:**

*Не has been sleeping* ***for an hour****.*

Слово **since** вказує на початок періоду, протягом якого тривала дія:

*І have been teaching English* ***since******1995****. What have you been* ***doing since you left us****?*

*Present Perfect Continuous* вживається в питальних реченнях з питальними словами since **when** – з якого часу, відколи; **how long** – як довго, скільки часу, якщо мова йде про період, що безпосередньо передує моменту мовлення:

***How long*** *have you been learning French?*

*Since* ***when*** *have they been working here?*

**МИНУЛИЙ ПЕРФЕКТНО-ТРИВАЛИЙ ЧАС**

**THE PAST PERFECT CONTINUOUS TENSE**

**УТВОРЕННЯ**

**Past Perfect Continuous** утворюється за допомогою допоміжного дієслова **to be** в ***Past Perfect*** і дієприкметника теперішнього часу ***(Present Participle)*** основного дієслова:

|  |  |
| --- | --- |
| *І* ***had been*** *read****ing***  *you* ***had been*** *read****ing***  *he* ***had been*** *read****ing***  *she* ***had been*** *read****ing*** | *we had been read****ing***  *you had been read****ing***  *they had been read****ing*** |

У *питальній формі* перше допоміжне дієслово ставиться перед підметом:

***Had*** *he been reading?*

У *заперечній формі* після першого допоміжного дієслова вживається заперечна частка **not:**

*Не* ***had not*** *been reading.*

У *питально-заперечній формі* перше допоміжне дієслово і частка **not** ставляться перед підметом:

***Hadn't*** *they been taking photos?*

У розмовній мові вживаються такі самі скорочення, як і в ***Past Perfect***.

Заперечна форма: *І* ***hadn't*** *been collecting coins. He* ***hadn't*** *been working.*

Питально-заперечна форма: ***Hadn't*** *you been collecting coins?*

**ВЖИВАННЯ**

**Past Perfect Continuous** вживається для вираження тривалої дії, яка почалася до якогось моменту в минулому, або продовжувалася у цей момент, або закінчилася безпосередньо перед ним:

*І explained that I* ***had been looking*** *for him for the last two hours.* Я пояснив, що вже дві години шукаю його,

*He felt tired because he* ***had been playing*** *football.* Він почувався втомленим тому що грав у футбол уже дві години

З дієсловами, що не мають форми ***Continuous***, замість ***Past Perfect Continuous*** вживається ***Past Perfect:***

*When we came to see Kate, she* ***had been ill*** *for three days*. Коли ми прийшли провідати Катрусю, вона вже три дні хворіла.

**МАЙБУТНІЙ ПЕРФЕКТНО-ТРИВАЛИЙ ЧАС**

**THE FUTURE PERFECT CONTINUOUS TENSE**

**УТВОРЕННЯ**

***Future Perfect Continuous*** утворюється за допомогою допоміжного дієслова **to be** у ***Future Perfect*** та дієприкметника теперішнього часу ***(Present Participle)*** основного дієслова:

|  |  |
| --- | --- |
| І shall have been going  you will have been going  he will have been going  she will have been going  it will have been going | we shall have been going  you will have been going  they will have been going |

У *питальній формі* допоміжні дієслова **shall, will** і **have** ставляться перед підметом:

***Will*** *you have been waiting?*

У *заперечній формі* після допоміжних дієслів **shall** і **will** вживається заперечна частка **not:**

*Не* ***will not*** *have been waiting.*

У *питально-заперечній формі* допоміжні дієслова **shall, will** і частка **not** ставляться перед підметом:

***Won’t*** *they have been waiting?*

У розмовній мові вживаються такі самі скорочення, як і у ***Future Perfect***.

Стверджувальна форма: *I****'ll*** *have been looking for*.

Заперечна форма: *I* ***shan't*** *have been looking for*.

**ВЖИВАННЯ**

**Future Perfect Continuous** вживається для вираження тривалої дії, яка почнеться до якогось моменту в майбутньому, або все ще триватиме в цей момент, або закінчиться безпосередньо перед ним:

*І hope that I shall have not been looking for him for а long time before I find him.* Я сподіваюся, що не шукатиму його довго до того, як знайду.

*He will have been learning English for half a year by June.* До червня він вивчатиме англійську мову вже півроку.

З дієсловами, що не мають форми ***Continuous***, замість ***Future Perfect Continuous*** вживається ***Future Perfect***:

*I* ***shall have not seen*** *the earth before we land.* Я не бачитиму землю, аж доки ми не приземлимося.

**НАКАЗОВИЙ СПОСІБ**

**THE IMPERATIVE MOOD**

Наказовий спосіб в англійській мові, як і в українській, виражає спонукання до дії, тобто прохання, наказ, пораду, запрошення, застереження тощо.

В англійській мові форма наказового способу збігається з інфінітивом, без частки **tо**:

*To take - Таке!* Візьми! Візьміть!

*To write - Write!* Пиши! Пишіть!

*Bring me this book.* Принеси мені цю книжку

*Be a good boy.* Будь хорошим хлопчиком.

Заперечна форма наказового способу утворюється з допо­міжного дієслова **to do**, заперечної частки **not** та інфінітива основного дієслова без **to**. В усному мовленні замість **do not** звичайно вживається скорочена форма **don’t**:

*Don't go to the theatre today.* Не йди сьогодні в театр.

*Don’t be angry.* Не сердься.

Допоміжне дієслово **do** може вживатися і у стверджувальній формі наказового способу для підсилення прохання. У цьому разі воно ставиться перед смисловим дієсловом:

*Do tell me about it.* Розкажіть же мені про це.

У першій і третій особі однини й множини спонукання до дії виражається сполученням дієслова **let** з інфінітивом основного дієслова без частки **tо**. Між дієсловом **let** та інфінітивом ставиться іменник у загальному відмінку або особовий займенник в об'єктному відмінку, що позначає особу, яка має виконати дію.

*Let the man listen to me.* Хай цей чоловік слухає мене.

*Let him listen to me.*

*Let us (Let’s) go to the theatre.* Ходімо в театр.

У заперечній формі **let** вживається з **don’t**.

*Don’t let him talk about it.*

*Don’t let them go there.*

**УЗГОДЖЕННЯ ЧАСІВ**

**SEQUENCE OF TENSES**

В англійській мові існує певна залежність у вживанні граматичного часу дієслова-присудка підрядної частини від граматичного часу, в якому стоїть дієслово-присудок головної частини. Це правило називають *правилом узгодження,* або *послідовності часів.*

Правило узгодження часів характерне переважно для додаткових підрядних частин. Воно полягає у такому:

1. Якщо дієслово-присудок головної частини стоїть у *теперішньому* або *майбутньому часі,* дієслово-присудок підрядного додаткового може стояти у будь-якій часовій формі, якої вимагає зміст:

*І* ***think*** *you* ***are right.*** Я *думаю*, що ви *маєте рацію*.

***Do*** *you* ***know*** *why he* ***was absent*** *yesterday?* Чи ви *знаєте,* чому його *не було* вчора?

*I****'ll tell*** *you what you* ***will have to do.*** Я *скажу* вам, що вам *треба буде зробити.*

2. Якщо дієслово-присудок головної частини стоїть у *минулому часі* (звичайно у ***Past Indefinite***), то і дієслово-присудок додаткової частини має стояти в *одному з минулих часів* або *в майбутньому з погляду минулого* ***(Future-in-the-Past)***. Такої залежності в українській мові немає:

*І* ***did not know*** *he* ***could speak*** *English*. Я *не знав,* що він *розмовляє* англійською.

*Не* ***told*** *me that you* ***were writing*** *your composition.*Він *сказав,* що ти *пишеш* твір.

*І* ***hoped*** *he* ***would come.*** Я *сподівався,* що він *прийде.*

При цьому для позначення дії, *одночасної* з дією, вираженою присудком головної частини, у підрядній частині вживаються ***Past Simple*** або ***Past Continuous*** (в українській мові – теперішній час):

*І* ***thought*** *you* ***were ready.*** Я *думав,* що ти *готовий.*

*Не* ***told*** *me that he* ***was preparing*** *for his exams*.Він *сказав* мені, що *готується* до екзаменів.

Для позначення дії, яка *передує дії,* вираженій присудком головної частини, звичайно вживається ***Past Perfect*** (в українській мові – минулий час).

*І* ***didn't know*** *she* ***had gone*** *away****.*** Я *не знав,* що вона *пішла.*

Якщо вжито означений час *(in 2010, yesterday)*, то попередню дію виражають за допомогою ***Past Simple***:

*І* ***thought*** *you* ***were born*** *in 1985.*

*I* ***thought*** *you* ***came back*** *from your trip yesterday.*

Для вираження *майбутньої дії з погляду минулого часу* вживають форми ***Future-in-the-Past*** із допоміжним дієсловом **would** (в українській мові – майбутній час).

*І* ***didn't expect*** *you* ***would be late.*** Я *не сподівався,* що ти *спізнишся.*

*Не* ***told*** *me that he* ***would meet*** *us at the stadium*.Він *сказав,* що *зустріне* нас на стадіоні.

**ПРЯМА І НЕПРЯМА МОВА**

**DIRECT AND INDIRECT SPEECH**

При перетворенні прямої мови у непряму в англійській мові слід дотримуватися певних правил.

У непрямій мові можна передавати твердження, питання, накази та прохання.

1. Твердження трансформується в підрядне речення зі сполучником **that**. Сполучник **that** може опускатися. Якщо в реченні вказується особа, до якої звертаються, дієслово *say* замінюється на *tell*.

*He says, “I am thirsty”.* – *He tells me that he is thirsty.* Він говорить: “Я хочу пити”. – Він каже мені, що він хоче пити.

2. Наказовий спосіб в прямій мові, трансформується в інфінітив в непрямій мові.

*The teacher says to the students,”Do all the homework in time”. – The teacher asks her students to do all the homework in time.*

Вчитель говорить студентам: “Робіть домашнє завдання вчасно”. – Вчитель просить студентів робити домашнє завдання вчасно.

*The instructor says, “Do not turn on this road”. – The instructor warns not to turn on this road.* Інструктор каже: “Не варто повертати на цю дорогу”. – Інструктор попереджає мене не повертати на цю дорогу.

*“Are you free tomorrow?” – I asked her if she was free the next day.*

*“Do you speak English?”– She asked me whether I spoke English.*

3. Питальні речення трансформуються згідно з такими правилами:

- **Загальні питання** – підрядне речення вводиться сполучниками **if, whether**. Порядок слів прямий.

*He asks us, “Do you believe me?” – He asks* ***whethe****r we believe him.* Він питає нас: “Ви мені вірите?” – Він питає, чи віримо ми йому.

- **Спеціальні питання** – підрядне речення вводиться сполучником, відповідним до питального займенника Порядок слів стає прямим.

*“When will the bank open tomorrow?” – She asks when the bank will open tomorrow.*

*”Where are you going?” He asked me where I was going.*

*“What do you think about it?” I asked Mary what she thought about it.*

Згідно з *правилом узгодження часів* при перетворенні прямої мови у непряму відбуваються такі зміни граматичного часу присудка підрядного речення:

***Present Indefinite → Past Indefinite***

***Present Continuous → Past Continuous***

***Present Perfect → Past Perfect***

***Past Indefinite → Past Perfect***

***Past Continuous → Past Perfect Continuous***

***Past Perfect → Past Perfect***

***Future Indefinite → Future-in-the Past***

Непряма мова в англійській мові також потребує відсутності лапок, зміни вказівних займенників, прислівників часу і місця:

|  |  |  |
| --- | --- | --- |
| **Direct Speech** (пряма мова) |  | **Indirect Speech** (непряма мова) |
| *this* | *→* | *that* |
| *these* | *→* | *those* |
| *here* | *→* | *there* |
| *now* | *→* | *then* |
| *yesterday* | *→* | *the day before* |
| *today* | *→* | *that day* |
| *last week* | *→* | *the week before* |
| *earlier* | *→* | *before* |
| *2 days ago* | *→* | *2 days before* |
| *tomorrow* | *→* | *next day* |
| *next year* | *→* | *the next year* |
| *in 2 days* | *→* | *2 days later* |

|  |  |  |
| --- | --- | --- |
| **Характер дії в підрядному реченні** | **Пряма мова** | **Непряма мова** |
| *Одночасна дія* | ***Present Simple / Continuous***  *He said, `I like winter`*  *He said, `Serg is waiting for me.`*  *He said. `I can do it myself.`* | ***Past Simple / Continuous***  *He said (that) he liked winter.*  *He said (that) Serg was waiting for him.*  *He said (that) he could do it himself.* |
| *Попередня дія* | ***Present Perfect / Perfect Continuous /* *Past Simple / Continuous***  *He said, `I have found a new job.`*  *He said, `I’ve been sitting here for two hours.`*  *He said, `I sent her a birthday present.`*  *He said, `She have been* *working on my paper all day.`* | ***Past Perfect / Perfect Continuous***  *He said (that) he had found a new job.*  *He said he had been sitting there for two hours.*  *He said he had sent her a birthday present.*  *He said he had been working on his paper all day.* |
| *Подальша дія* | ***Future Present / Continuous***  *He said, `I shall see her on Monday.`*  *He said, `I will be giving a lecture on Tuesday.`* | ***Future in the Past***  *He said he would see her on Monday*  *He said he would be giving a lecture on Tuesday.* |

**МОДАЛЬНІ ДІЄСЛОВА**

**MODAL VERBS**

**ЗАГАЛЬНІ ВІДОМОСТІ**

У сучасній англійській мові виділяють 12 дієслів, які є модальними, або ж виступають у значенні модальних: ***can, may, must, should, ought, shall, will, would, need, dare, to be, to have (to have got)*.**

До категорії модальних дієслів належать ***can, may, must, ought, need***, ***dare***

Модальні дієслова не виражають дії чи стану, а лише можливість, необхідність, бажання, ймовірність, сумнів, дозвіл, заборону, здатність виконання дії, позначеної інфінітивом. Тому модальні дієслова вживаються не самостійно, а лише в сполученні з інфінітивом іншого дієслова. Інфінітив, з яким поєднуються модальні дієслова, вживається без частки **to** (крім інфінітива, який слідує за дієсловом ***ought***).

*І can help you.* Я можу допомогти вам.

*Не must go there.* Він мусить іти туди.

Без інфінітива іншого дієслова модальні дієслова вжи­ваються лише тоді, коли інфінітив зрозумілий з контексту:

*Can you do it? Yes, I* ***can****.* Ви можете зробити це? Так.

*І wanted to open the window but I* ***couldn't****.* Я хотіла відчинити вікно, але не змогла.

**Модальні дієслова** не мають усіх основних форм, властивих іншим дієсловам, і тому їх називають також *недостатніми* ***(Defective Verbs)***:

1. Дієслова **can** та **may** мають форми теперішнього і минулого часу (**could** і **might**), а дієслова **must, ought і need** мають тільки одну форму – теперішнього часу.
2. Модальні дієслова не мають неособових форм – інфінітиву, герундія і дієприкметника.
3. Модальні дієслова не мають закінчення **-s** в 3-й особі однини:

|  |  |
| --- | --- |
| ***He can do it.***  ***He must do it.*** | ***He may do it.***  ***He ought to do it.*** |

Питальна і заперечна форми модальних дієслів в ***Present*** і ***Past Simple*** утворюються без допоміжного дієслова **to do**. У питальній формі модальне дієслово ставиться перед підметом:

|  |  |  |
| --- | --- | --- |
| ***Can you do it?***  ***Need he do it?*** | ***May you do it?***  ***Ought she to do it?*** | ***Must you do it?*** |

У заперечній формі частка **not** ставиться відразу після модального дієслова. Дієслово **can** і заперечна частка **not** у теперішньому часі пишуться разом: **cannot**.

***He cannot do it.*** Він не може цього зробити.

***You may not smoke here.*** Тут курити не дозволяється.

**Модальні дієслова мають такі скорочені заперечні форми:** **can’t, mayn’t, couldn’t, mightn’t, needn’t, mustn’t.**

**ЗНАЧЕННЯ І ВЖИВАННЯ МОДАЛЬНИХ ДІЄСЛІВ**

**МОДАЛЬНЕ ДІЄСЛОВО CAN**

Дієслово **can** має дві форми: теперішнього часу **сап** і минулого часу **could:**

*І can swim.* Я вмію плавати.

*Не could read when he was five.* Він умів читати, коли йому було п'ять років.

Дієслово **can** виражає фізичну чи розумову здатність, уміння чи можливість виконати дію в теперішньому або минулому часі:

*Не can lift this weight.* Він може підняти цю вагу.

*Can you see anything?* Ви що-небудь бачите?

*І couldn't solve the problem.* Я не зміг розв'язати задачу.

Після форми **could** у цих значеннях може вживатися перфектний інфінітив, який вказує на те, що дія, яка мала відбутися, не відбулася:

*Не could have guessed it.* Він міг здогадатися про це. *{але не здогадався)*

Дієслово **саn** не має майбутнього часу. У майбутньому часі замість **саn** вживається сполучення **to be able** – бути спроможним. Інфінітив після нього вживається з часткою **to.** Вираз **to be able** іноді вживається також у теперішньому і минулому часах:

*Не is able to help you.* Він може допомогти вам.

*She was not able to answer.* Вона не могла відповідати.

***If we weigh the lamp with the alcohol in it before and after the experiment we shall be able to determine the amount of alcohol burned.*** *–* Якщо ми зважимо лампу, наповнену спиртом, до, і після досвіду, ми зможемо (будемо в змозі) визначити кількість спирту, який згорів.

**Дієслово саn** в поєднанні з ***Indefinite Infinitive Active*** перекладається українською мовою словом *може*, в поєднанні з ***Indefinite Infinitive Passive*** дієслово **can** перекладається словом можна з наступним інфінітивом:

***The burden will fall on me but I can carry it*** *–* (Вся) тяжкість ляже на мене, але я можу витерпіти її.

***When a body сап do work it is said to possess energy*** *–* Коли тіло може виконувати роботу, кажуть, що воно володіє енергією.

***How can the motion be explained?*** *–* Як можна пояснити рух?

**Дієслово can в заперечній формі** з подальшим ***Indefinite Infinitive Passive*** зазвичай перекладається українською мовою словом не можна:  
***It cannot be done.*** Цього не можна зробити.

**Примітка.** Поєднання **cannot but** плюс ***Indefinite Infinitive*** перекладається *не можна не, не можу* *не* (*не може не* і т. д.):

***I cannot but agree with you.***Не можна не погодитися з вами. (Я не можу не погодитися з вами.)

***One cannot but admit …*** *-* Не можна не визнати …

Дієслово **can (could)** у поєднанні з дієсловами, що позначають почуття і сприйняття (to see, to hear, to feel, to smell, to taste і т. д.), українською мовою не перекладається. У такому випадку дієслово *can* надає відтінок зусилля у виконанні дії, вираженого дієсловами, що позначають почуття і сприйняття:

***Look over there, can you see that house in the distance?*** *–* Подивіться туди. Бачите ви цей дім в далині?

***Can you hear that strange noise?*** *–* Ви чуєте цей дивний шум?

**МОДАЛЬНЕ ДІЄСЛОВО MAY**

Дієслово **may** має наступні значення:

**1) Дозвіл:**

***You may use dictionaries.***Ви можете (вам дозволяється) користуватися словниками.***May I ask you a question?***Можна (дозвольте) задати питання?

У цьому значенні замість дієслова may (might) і замість відсутніх форм дієслова **may** вживається поєднання **to be allowed** з наступним інфінітивом з часткою **to**:

***He has been allowed to stay here. –*** Йому дозволили залишитися тут.

Форма минулого часу від дієслова **may – might** – вживається в значенні дозволу лише в непрямій мові. У всіх інших випадках в цьому значенні в минулому часі вживається вираз **to be allowed**.

**2) Можливість:**

***The answer may give the key to the whole problem.*** *–* Відповідь (на це питання) може дати ключ до всієї проблеми.

***A body may be divided into separate tiny particles.*** *–* Тіло може бути розділене (можна розділити) на окремі дрібнесенькі частинки.

**3)** Припущення, сумнів, невпевненість з боку мовця у можливості дії, вираженої наступним інфінітивом. **May (might)** у поєднанні з ***Indefinite Infinitive*** вживається у відношенні теперішнього і майбутнього часу; **may (might)** у поєднанні з ***Perfect Infinitive*** вживається відносно минулого часу.

Різниця у значенні між **may** і **might** в даному вживанні полягає в тому, що **might** висловлює більш сильну ступінь сумніву, невпевненості з боку мовця, ніж **may**:

***He may (might) come today or tomorrow.*** *–* Він, можливо, приїде сьогодні або завтра.

***So you say he may have been one of those two passengers?*** *–* Отже, ви кажете, що він, можливо, був одним з тих двох пасажирів?

**4) Вираз докору, зауваження.** У цьому значенні вживається тільки дієслово **might. Might** в поєднанні з ***Indefinite Infinitive*** належить до теперішнього, минулого і майбутнього часу; в поєднанні з ***Perfect Infinitive* might** виражає докір, жаль про невиконану дію і відноситься лише до минулого часу:

***You might do it yourself.***Ви могли б зробити це самі.

***You might have told me about it long ago.***Ви могли б давно сказати мені про це.

Дієслово **may (might)** у поєднанні з інфінітивом вживається в складносурядних реченнях цілі після сполучників **that, so that, in order that –** *для того щоб, щоб*.

***I have told him to meet me next morning so that we may work together.*** Джері велів йому зустріти його наступного дня вранці, для того щоб разом працювати (щоб вони могли разом працювати).

**МОДАЛЬНЕ ДІЄСЛОВО MUST**

Дієслово **must** виражає необхідність, моральний обов’язок і відповідає в українській мові словами *повинен, потрібно, треба*.

***I must hurry, I must warn him of the danger.***Я мушу поспішати, я повинен попередити його про небезпеку.

***As soon as the shell is shot from the gun it must overcome the resistance of the air.***Як тільки снаряд випущений з гармати, він повинен подолати опір повітря.

**Must** вживається у відношенні теперішнього і майбутнього часу. Відносно минулого часу дієслово must вживається тільки в непрямій мові:

***He decided he must speak to Doctor Page himself.*** *–* Він вирішив, що повинен поговорити з самим доктором Пейджем.

**Примітка.** У відповідях на запитання, що містить дієслово must, в позитивній відповіді вживається **must**, в негативній – **needn’t**:

*Must I go there? Yes, you must. No, you needn’t.* Треба мені йти туди? Так, потрібно. Ні, не потрібно.

**Mustn’t** означає не можна і вживається в заперечній відповіді на питання *May I …?* (Можна?)

Дієслово **must** може мати значення ймовірності, можливості дії. У цьому значенні дієслово **must** перекладається українською мовою *можливо, мабуть*. У поєднанні з *Perfect Infinitive* дієслово **must** зазвичай вживається у вказаному значенні відносно дії, що відноситься до минулого.

***Wait a little, the rain must stop soon.***Зачекайте трохи, дощ, можливо, скоро перестане.

***It occurred to Bert that he must have said the wrong thing.***Берту спало на думку, що він, мабуть, сказав не те, що потрібно.

Дієслово **must** має лише одну форму теперішнього часу

Для вираження необхідності стосовно минулого і майбутнього часів вживається дієслово **to have** у відповідних часових формах. Воно може заміняти дієслово **must** ів теперішньому часі. Як модальне дієслово **to have** у поєднанні з інфінітивом вживається для вираження необхідності виконати дію в силу певних обставин. Після дієслова **to have** інфінітив вживається з часткою **to:**

*She had to wait for an hour.* Вона мусила чекати цілу годину.

*І shall have to pay him.* Мені доведеться заплатити йому.

Для вираження необхідності в минулому часі вживається також дієслово **to be.** Воно може вживатися замість дієслова **must** і в теперішньому часі. Дієслово **to be** вживається для вираження необхідності виконати дію згідно з попередньою домовленістю або завчасно складеним планом. Після дієслова **to be** інфінітив вживається з часткою **to:**

*We were to come at 5 o'clock.* Ми мали прийти о п'ятій.

**МОДАЛЬНІ ДІЄСЛОВА SHOULD, OUGHT**

Дієслова **should, ought** майже не відрізняються за значенням. Вони виражають моральний обов'язок, пораду, рекомендацію, бажаність дії, що відноситься до теперішнього і майбутнього часу. Українською мовою вони перекладаються *слід було б, потрібно, повинен, мусиш*. **Should** вживається з інфінітивом без частки **to.** Після **ought** інфінітив вживається з часткою **to:**

*You should visit her.* Вам слід відвідати її.

*Не should go in for sport.* Йому слід займатися спортом.

***You ought to do it at once.***Вам слід (варто було б, ви повинні) зробити це зараз.

***His brother has measles. He ought to be isolated.***У його брата кір. Його слід ізолювати.

Дієслово **ought** в поєднанні з ***Perfect Infinitive*** вживається по відношенню до минулого часу і вказує на те, що дія не була виконана:

***You ought to have done it at once.***Вам слід було б зробити це відразу ж (але ви не зробили).

**МОДАЛЬНЕ ДІЄСЛОВО NEED**

Дієслово **need** в якості модального дієслова в поєднанні з ***Indefinite Infinitive*** виражає необхідність здійснення дії стосовно теперішнього і майбутнього часу. **Need** вживається в питальних і заперечних реченнях, а також у стверджувальних реченнях, що містять такі прислівники з заперечним значенням, як *hardly, scarcely* та ін:

***Need you go there so soon?***Чи потрібно вам (чи повинні ви) їхати туди так скоро?

***You need hardly remind me of it.***Вам навряд чи треба нагадувати мені про це.

***I need not tell you how important that is.***Мені не потрібно говорити вам, як це важливо.

Дієслово **needn’t** в поєднанні з ***Perfect Infinitive*** вживається по відношенню до минулого часу і означає, що у виконанні дії не було необхідності:

***You needn’t have done it.*** *–* Вам не треба було цього робити.

**Примітка.** Дієслово **need** як самостійне дієслово означає *мати потребу*. У цьому значенні **need** має звичайні дієслівні форми:

***Here is the book you needed so much.***Ось книга, яка була вам так необхідна.

**ГРАМАТИКА В ТАБЛИЦЯХ ТА СХЕМАХ**

**СТРУКТУРА РЕЧЕННЯ**

***1. Розповідне речення***

a) He is a student.

b) It was a very interesting film.

c) There are address books on the shelf.

d) The secretary leaves a detailed report on his desk every day.

**1.1**

|  |
| --- |
| **Підмет + присудок + додаток + обставина (способу дії, місця, часу).** |

**1.2**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Підмет** | **присудок** | **додаток** | | | **обставина**  (часу) |
| непрямий | прямий | |
| означення |  |
| She | gave | me | a beautiful | flower | in the morning. |

***2. Заперечне речення***

**2.1**

|  |
| --- |
| **Підмет + (присудок + not) + інші члени речення.** |

a) He isn’t a student.

b) It wasn’t a very interesting film.

c) There aren’t address books on the shelf.

**2.2**

|  |
| --- |
| **Підмет +((допом. дієслово + not)+ смислове дієслово)+ ін. члени речення.** |

d) The secretary doesn’t leave a detailed report on his desk every day.

***3. Питальне речення***

***3.1 Загальне питання***

*3.1.1*

|  |
| --- |
| **Присудок + підмет + інші члени речення ?** |

a) Is he a student?

b) Was it a very interesting film?

c) Are there address books on the shelf?

*3.1.2*

|  |
| --- |
| **Допоміжне дієслово + підмет + смислове дієслово + інші члени речення ?** |

d) Does the secretary leave a detailed report on his desk every day?

***3.2 Спеціальне питання***

*3.2.1 До підмета*

|  |
| --- |
| **Питальний займенник (замість підмета) + присудок + інші члени речення ?** |

a) Who is a student?

d) Who leaves a detailed report on his desk every day?

*3.2.2 До інших членів речення*

|  |
| --- |
| **Питальний займенник + допом. дієслово + підмет + смислове дієслово + …?** |

c) What are there on the shelf?

d) What does the secretary leave on his desk every day?

d) Where does the secretary leave a detailed report every day?

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **Час** | **Indefinite / Simple** *(факти, повторювані дії, характеристика)* | | | **Допоміжне дієслово** | **Continuous**  *(дії, що відбуваються у певний момент чи період)*  **be + V-ing** | | **Perfect**  *(дії, що передують певному моменту чи дії)*  **have + Participle II** | | | | **esent** | I ask  We, you, they ask  Не, she, it asks | | | do  do  does | I am  We, you, they are  Не, she, it is | asking | I have  We, you, they have  Не, she, it has | | asked | | **Past** | I  Не, she, it  We, you, they | asked | | did | I was  Не, she, it was  We, you, they were | asking | I  Не, she, it  We, you, they | had asked | | | **Future** | I shall / will  We shall / will  He, she, it will | | ask | | I shall  We, you, they shall  Не, she, it will | be asking | I shall  we,you,they shall  Не, she, it will | have asked | |   **СИСТЕМА ЧАСІВ** |

**АРТИКЛЬ**

**THE ARTICLE**

|  |  |  |
| --- | --- | --- |
| **The Indefinite Article**  **A, an** | | **The Definite Article**  **The** |
| a table  an apple | | the [ðə] table  the [ði] apple |
| Один | | Один, кілька, багато |
| 1. Якийсь, будь-який. | | 1. Цей. Саме цей! |
| 2. Згаданий вперше. | | 2. Згаданий повторно. |
| 3. Один з ряду однотипних. | | 3. Єдиний у своєму роді. |
| 4. Одиничний представник чи екземпляр роду | 4. Весь рід у цілому через назву одного представника | |
|  | 5. Людина чи предмет, який у даній фразі супроводжує будь-яке означення, що виділяє його з ряду однотипних. | |

|  |  |
| --- | --- |
| *1. Here is a letter for you.* | *1. This is the letter you are expecting.* |
| *2. Suddenly I saw a strange man.* | *2. The man was looking around.* |
| *3. Cristopher Wren was a great English architect.* | *3. Taras Shevchenko was in his time the most distinguished poet in Ukraine.* |
| *4. I took a taxi.* | *4. The taxi is a car with a taxi-meter.* |

**Неозначений артикль *а, an* вживається:**

1. Перед іменниками, що не конкретизуються ні контекстом ні ситуацією.

*I’ve got a son and a daughter.*

2. Перед злічуваними іменниками у значенні “один”.

*Wait a minute!*

*How many times a months do you go to the theatre?*

*half an apple, half an hour etc.*

3. Перед назвами професій, національностей, партійності.

*Mr.Smith, an engineer at our factory, made an invention.*

4. Перед злічуваними іменниками в однині після ***what*** в окличному реченні та перед ***such, quite, rather, most*** (в значенні “дуже”).

*What a wonderful day!*

*He is quite a young man.*

*It is a most interesting book.*

5. Перед абстрактними іменниками при наявності означення.

*They lived a quiet life.*

**Означений артикль *the* вживається:**

1. До 3 пункту таблиці – перед іменниками єдиними у своєму роді, а також за даних обставин:

|  |  |  |  |
| --- | --- | --- | --- |
| *the sun*  *the sky*  *the moon* | *the capital*  *the government*  *the population* | *the head*  *the brain*  *the heart* | *the ceiling*  *the floor*  *the walls* |

2. До 5 пункту таблиці – при наявності обмежувального/уточнюючого означення, яким може виступати

a) прикметник у найвищому ступені

*July is the warmest month in the year.*

b) порядковий числівник

*We have seats in the second row.*

c) прийменникова група

*The walls of my room are light green.*

d) дієприкметниковий зворот

*The boy running across the street is my brother.*

e) означальне підрядне речення

*The armchair I am sitting in is very comfortable.*

3. Перед іменниками, що означають речовину у певній кількості чи за певних обставин

*Pass me the salt, please.*

*The snow is dirty.*

4. З деякими власними назвами:

1) позначаючи всю родину

*I haven’t seen the Browns since last month.*

2) перед назвами держав, що включають загальну назву з одним чи кількома означеннями

*The United States of America, the United Kingdom of Great Britain and Northern Ireland*

Викл.: *the Netherlands, the Cameroon, the Senegal, the Hague*

3) перед деякими географічними назвами

* Океанів, морів, рік, озер, водоймищ, проливів, заливів, водоспадів

*The Black Sea, the Gulf of Mexico, the English Channel, the Thames, the Ontario*

***But:*** *Lake Ontario*

* Груп островів

*The British Isles, the Canaries, the Philippines*

***But:*** *Cuba, Sicily, Cyprus*

* Гірських масивів

*The Urals, the Rocky Mountains, the Alps*

***But:*** *Everest, Mont Blanc, Vesuvius*

* Пустель

*The Sahara, the Gobi, the Kara-Kum*

4) перед назвами театрів, музеїв, картинних галерей, концертних залів, кінотеатрів, клубів, готелів

*The Opera House, the British Museum, the Louvre, the Albert Hall, the Empire, the Rotary Club, the Hilton*

5) перед назвами державних установ, організацій, політичних партій

*The National Trust, the London City Council, the Liberal Party*

**Викл.:** *Parliament (in GB), Congress (in the USA), NATO*

6) перед назвами кораблів, газет, журналів

*The Titanic, the Times, the Lancet*

7) перед назвами граматичних категорій

*The Past Simple, the Passive Voice, the Conditional Mood*

# **СТУПЕНІ ПОРІВНЯННЯ ПРИСЛІВНИКІВ ТА ПРИКМЕТНИКІВ**

# **DEGREES OF COMPARISON OF ADVERBS AND ADJECTIVES**

## *The positive degree – the comparative degree – the superlative degree*

|  |  |
| --- | --- |
| **Synthetic forms**  1. dark – dark**er** – dark**est**   hot – hott**er** – hott**est**   1. clever – clever**er** – clever**est**   simple – simpl**er** – simpl**est**  narrow – narrow**er** – narrow**est**  heavy – heavi**er** – heav**iest**   1. po`lite – po`lit**er** – po`lit**est** 2. good – better – best   well  bad – worse – worst  badly  old – older – oldest  elder – eldest  far – farther – farthest  further – furthest  little – less – least  many – more – most  much | Analytical forms  1. `famous – **more/less** `famous – **most/least** `famous 2. quietly – **more/less** quietly – **most/least** quietly   But: early – earli**er** – earli**est**  **3.** difficult – **more/less** difficult – **most/least** difficult |

# **МНОЖИНА ІМЕННИКІВ**

# **THE PLURAL OF NOUNS**

|  |  |
| --- | --- |
|  | 1. a book + **-s** – book**s**   a table + **-s** – table**s** |
|  | 1. a book + **-s** – book**s**   a table + **-s** – table**s** |
|  | 1. a class + **-es** – class**es**   a box + **-es** – box**es**  a dish + **-es** – dish**es**  a match + **-es** – match**es** |
|  | 1. a fami**ly** + **-es** – fami**lies**   a d**ay** + **-s** – da**ys** |
|  | 1. a tomato + **-es** – tomato**es**   But: photo**s**, piano**s**, kilo**s**, kimono**s**, solo**s**, soprano**s**, dinamo**s** |
|  | 1. a wife + **-s** – wive**s**   a shelf + **-es** – shelv**es**  But: chief**s**, handkerchief**s**, roof**s**, proof**s**, safe**s** |
|  | 1. a m**a**n – m**e**n   a wom**a**n – wom**e**n  a f**oo**t – f**ee**t  a t**oo**th – t**ee**th  a g**oo**se – g**ee**se  a m**ous**e – m**ic**e  a l**ous**e – l**ic**e  a child – childr**en**  an ox – ox**en**  a person – people |
|  | 1. a dat**um** – dat**a**   a phenomen**on** – phenomen**a**  a bas**is** – bas**es**  a nucle**us** – nucle**i**  a formul**a** – formul**ae** |
|  | 1. a boy-friend – boy-friend**s**   a m**a**n-of-war – m**e**n-of-war  a son-in-law – son**s**-in-law  a passer-by – passer**s**-by  a forget-me-not – forget-me-not**s** |
|  | sheep, deer, fish, swine, fruit, hair |
|  | news, wages, contents; billiards, dominoes, darts etc. |
|  | pants, pyjamas, trousers, glasses, spectacles, scissors etc. |
|  | clothes, goods, stairs, savings, arms, surroundings etc. |

**ЧИСЛІВНИК**

**NUMERALS**

**Cardinal numerals (кількісні числівники)**

* *Simple (прості)* 1-12; 100; 1,000; 1,000,000
* *Derived (похідні)*

1) 13-19 – -teen

Roots changed: three – `thir`teen; five – `fif`teen

2) tens – -ty

Roots changed: two – `twenty; three – `thirty; four – `forty; five – `fifty

* *Composite (складені)*

235 – two hundred **and** thirty-five

4,007 – four thousand **and** seven

1,694 – **a** (one) thousand six hundred **and** ninety-four

7,581,462 – seven million five hundred **and** eighty-one thousand four hundred **and** sixty-two

**Years**

1800 – eighteen hundred

1675 – sixteen seventy-five

1905 – nineteen hundred and five (nineteen five)

**Telephone numbers**

8 0512 39 77 46 – eight, O [ou]/zero five one two, three nine, double seven, four six

**Other cases**

|  |  |  |
| --- | --- | --- |
| Page twenty  Chapter five | Part two  Room three | Act one  Size forty-two |

**Ordinal numerals (порядкові числівники)** – **th**

* *Simple*
  + first, second, third
  + – th

Roots changed: five – fif**th**, twelve – twelf**th**, nine – nin**th**

* *Derived*

Sixty – sixt**ie**th

* *Composite*

Three hundred and sixty-**fourth**

**Dates**

17/9/1995 – the seventeenth of September nineteen ninety-five / September the seventeenth nineteen ninety-five

**Fractions (прості дробі)**

*Numerator*  – cardinal

*Denominator* – ordinal

|  |  |  |
| --- | --- | --- |
| 1/7 – one seventh  3/7 – tree seventh**s** | **½** – a half (one half)  **¼ –** a quarter (one quarter) | 1 ¾ – one and three quarter**s**  3 4/5 – three and four fifth**s** |

**Decimals (десяткові дробі)**

35.204 – three five point two nought four

0.71 – (nought) point seven one

|  |  |  |  |
| --- | --- | --- | --- |
| **0** | | | |
| [ou] – telephone numbers   * years * account numbers | nought [no:t](Br.) / zero [`zierou] – decimals | [nil] – football | [lΛv] – tennis |

**СПОСОБИ ВИРАЖЕННЯ МАЙБУТНЬОЇ ДІЇ**

**FUTURE FORMS**

|  |
| --- |
| ***will***   1. The most common use of *will* is an auxiliary verb to show future time. It expresses a future fact or prediction.   *Tomorrow* ***will be*** *warm and sunny.*  *What time* ***will*** *she* ***be*** *back?*  *I'm sure you****'ll pass*** *your exam.*  2. *Will (‘ll)* expresses an intention or decision made at the moment of speaking.  *I****’ll give*** *you my phone number. Ring me tonight.*  *I****'ll*** *phone back later.* |
| ***going to***  1. *Going to* expresses future plans, intention or decision made *before* the moment of speaking.  *We****'re going to have*** *a holiday in Sicily this summer.*  *My daughter****'s going to study*** *modern languages at Bristol University.*  2*.* We use *going to w*hen we can see that something is certain to happen.  *Look at those clouds. It****'s going to rain.***  *She* ***is going to have*** *a baby.* |
| ***Present Continuous***  The Present Continuous can be used to express a future arrangement between people. It is common with verbs such as *go, come, see, visit, meet, have* (a party), *leave.* It usually refers to the near future*.*  *Pat and Peter* ***are coming*** *for dinner tonight.*  *I* ***am seeing*** *the doctor in the morning.*  Sometimes there is little or no difference between a future intention *(going to)* and a future arrangement *(Present Continuous)*.  *We****'re going to see*** *a play tonight.*  *We****'re seeing*** *a play tonight.* |
| ***Present Simple***  1. Present Simple expresses a future event as a part of fixed timetable or programme.  *The last train* ***leaves*** *at 11.30*  *He* ***flies*** *to London next Sunday.*  2. We use Present Simple for future in adverbial clauses of time and condition.  *I’ll buy that novel when it* ***comes out****.*  *If it* ***rains*** *tomorrow, we shan’t go to the forest.* |

**SHORT MATHEMATICS DICTIONARY**

absolute value — The numerical value of a number, regardless of the sign of the number.

acute angle — An angle less than 90° and more than 0°.

acute triangle — A triangle having all acute angles.

amount — The whole; the total; quantity.

angle — A figure formed when two straight lines intersect at a point.

approximate number — A number that is not exact but whose accuracy is sufficient for the purpose desired.

arc — Any part or a section of a circumference of a circle.

area — The number of square units contained in the surface of a plane figure.

bar graph — A graph made up of parallel bars whose lengths represent given quantities drawn to scale.

base (of a geometric configuration) — A line or surface upon which a plane or solid figure rests.

bisect — To cut into two equal parts, to divide in half.

circle — A closed plane curve all points of which are the same distance (called the radius) from a point within (called the centre).

circle graph — A graph in the form of a circle in which the angles (parts) indicate relations to each other and to the whole.

circumference — The curved line bounding a circle; the length or distance around a circle.

coefficient — A number written in front of an algebraic expression.

common denominator — A number into which all the given denominators divide evenly.

compasses or compass — An instrument for drawing circles and arcs.

cone — A solid figure having a circular base and curved surface which comes to a point at the vertex.

congruent triangles — Triangles that have the same size and shape and can be made to coincide.

consecutive numbers — Numbers that follow one another, such as 1, 2, 3, 4, etc.

corresponding parts — Angles or sides of triangles which are placed in the figure in the same positions.

cube — A rectangular solid with 6 equal square faces or, the product obtained by multiplying a number by itself three times.

cylinder — A solid figure with bases made of two equal circles and with curved sides.

decagon — A polygon having ten sides and ten angles.

decimal fractions — A part of a whole expressed by using a decimal point.

degree — A unit used in measuring angles. 360°=one complete rotation.

diameter — A straight line drawn through the centre of a circle and dividing the circle into two equal parts.

digit — Any one of the ten numbers from 0 to 9.

dimension — A linear measurement such as the length, width, height of a figure.

equation — A statement showing the equality of two quantities.

equivalent fractions — Fractions having different forms but equal values.

evaluate — To determine the value of an unknown letter in a formula; to find the value of an algebraic expression by substituting in the arithmetic values of the literal

quantities.

exponent — The small number or letter written slightly above and to the right of a number or letter to indicate how many times the number is to be multiplied by itself.

factor — One of two or more numbers which when multiplied together give a certain product.

formula — A statement of a general rule expressed by means of letters and numbers.

graph — A representation of relationships by means of lines, bars, circles or symbols.

height — The distance from the top to the base of an object.

hemisphere — One half of a sphere.

hexagon — A plane figure having six sides and six angles.

hypotenuse — The side opposite the right angle in a right triangle.

isosceles triangle — A triangle having two equal sides.

like terms — The terms of an algebraic expression containing the same letters.

lowest terms — When both the numerator and denominator of a fraction are reduced as far as possible.

maximum — The greatest value of a quantity.

metric system — A system of weights and measures based on the decimal system.

minimum — The smallest value of a quantity.

monomial — An algebraic expression consisting of a single term.

negative number — A number whose value is less than zero and which is preceded by minus sign.

obtuse angle — An angle containing more than 90° but less than 180°.

obtuse triangle — A triangle containing an obtuse angle.

octagon — A plane figure containing 8 sides and 8 angles.

parallel lines — Lines that extend in the same direction and are the same distance apart no matter how far extended.

parallelogram — A four-sided figure (quadrilateral) whose opposite sides are parallel.

pentagon — A plane figure with 5 sides and 5 angles.

per cent — A value expressed in hundredths using the per cent sign (%) or the words "per cent".

perimeter — The sum of the lengths around a plane figure.

perpendicular lines — Lines which intersect so as to form right angle.

pi (n) — The ratio of the circumference of a circle to its 22 diameter; я=3.14159 or y.

polygon — A plane figure having any number of sides and angles.

positive number — A number whose value is greater than zero and which is sometimes preceded by plus sign.

protractor — An instrument marked off in degrees used for measuring or making off angles of a given size.

pyramid — A solid figure having triangles for faces.

quadrilateral — Any four sided plane figure.

radius — The distance or straight line from the centre to the circumference of a circle.

ratio — The comparison by means of a division of two like quantities.

rectangle — A quadrilateral whose opposite sides are equal and which has four right angles.

rectangular solid — A solid figure whose six faces are rectangles.

regular figure — A plane figure whose angles are equal and whose sides are equal in length.

right angle — An angle which contains 90°; one fourth of a rotation.

round number — A number that is approximate to a certain extent, not accurate.

scale drawing — A drawing that is the exact shape of an object but which is reduced or enlarged in size in a definite ratio.

scalene triangle — A triangle in which no two sides are equal.

secant — A line drawn through a circle and extending beyond it.

sector — The portion of a circle between two radii and an arc.

semicircle — Half of a circle.

signed number — Positive and negative numbers, directed numbers.

solid figure — A figure having three dimensions: length, width and height.

sphere — A circular solid such that all points on a surface are the same distance from the centre.

square — A rectangle all of whose sides are equal, or the product obtained by multiplying a number by itself two times.

straight angle — An angle containing 180°.

symbol — A representation by means of a sign or a letter.

symmetry — The correspondence of parts such as lines or points.

term — A member of an expression.

trapezoid — A quadrilateral having two parallel sides.

triangle — A closed plane figure with three sides and three angles.

triangular prism — A solid figure having 3 rectangular faces and 2 parallel triangles for bases.

unlike terms — The terms of an algebraic expression containing different letters.

vertex — The point of intersection of the sides of an angle.

volume — The number of cubic units in a solid figure.

### ЛІТЕРАТУРА

1. Murphy, Raymond. English Grammar in Use. – Cambridge, 1988. – 328 p.
2. Thompson A. J., Martinet A. V. A Practical English Grammar. Exercises#1. Oxford University Press, 2010. – 185 р.
3. Thompson A. J., Martinet A. V. A Practical English Grammar. Exercises#2. Oxford University Press, 2010. – 200 р.
4. Гречина О.В., Миронова Е.П. Пособие для математических факультетов педагогических вузов. Учеб. Пособие. М., «Высш. школа», 1984. – 112 c.
5. Верба Г. В., Верба Л. Г. Довідник з граматики англійської мови. – К.: Освіта, 1997. – 352 с.
6. Шпак В. К. English for Everyday Communication – Київ, Вища школа, 2003. – 239 с.