

**ЎЗБЕКИСТОН РЕСПУБЛИКАСИ**

**ОЛИЙ ВА ЎРТА МАХСУС ТАЪЛИМ ВАЗИРЛИГИ**

**АНДИЖОН ДАВЛАТ УНИВЕРСИТЕТИ**

**ФАКУЛЬТЕТЛАРАРО ЧЕТ ТИЛЛАР**

**(аниқ ва табиий фанлар) кафедраси**

**“АМАЛИЙ ИНГЛИЗ ТИЛИ”**

**фанидан**

**4-курс учун**

**ЎҚУВ-УСЛУБИЙ МАЖМУА**

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## II . ЎҚУВ МАТЕРИАЛЛАРИ

### LESSON 1. (2 hours)

#### HISTORY OF THE SPECIALTY STUDIED

##### 1. The History of Mathematics

**Before you read.**

*Discuss these questions with your partner.*

- Why do people study Maths?
- When do you use it?

#### **Vocabulary**

*a. Match these words with their definitions.*

1	Magnitude	A	the basic elements of arithmetic which are used for expressing, recording quantities or measures of various kinds
2	Property	B	a measure of object size
3	Number	C	a statement which is assumed to be true, and is used as a basis for developing a system
4	Axiom	D	some particular fact which is true for an object or, all the objects in the group
5	Theorem	E	a sequence of statements leading to the establishment of the truth of one final statement
6	Multiplication	F	the operation of combining numbers
7	Addition	G	a statement which has been proved to be true
8	Proof	H	the operation which combines several equal measures of size giving the result as a single number

*a. The underlined words are all in the wrong sentences. Put the words into the*

correct sentences.

1. It is a magnitude of squares that their diagonals cross at right angle.
2. We use axioms in arithmetic.
3. 32 million and 35 million have a difference of 3 million but, as this is less than 10 % of either of them, it could be said that they are of the same order of property.
4. Any system of logic starts by saying clearly what number it uses.
5. The product is the result given by the operation of addition.
6. A visual theorem is a theorem in which the statements are presented in the form of diagrams.
7. Multiplication is an operation inverse of subtraction.
8. A corollary follows after a proof.

**b. Pronunciation guide**

quantity ['kwDntstl]

deduce [di'dju:s]

postulate [,postju:'lelt]

theorem ['Oisrsm]

calculation [k^lkju'leifn]

decimal ['desimsl]

### **Text 1. The History of Mathematics**

Mathematics, study of relationships among quantities, magnitudes, and properties and of logical operations by which unknown quantities, magnitudes, and properties may be deduced. In the past, mathematics was regarded as the science of quantity, whether of magnitudes, as in geometry, or of numbers, as in arithmetic, or the generalization of these two fields, as in algebra. Toward the middle of the 19th century, however, mathematics came to be regarded increasingly as the science of relations, or as the science that draws necessary conclusions. This latter view encompasses mathematical or symbolic logic, the science of using symbols to provide an exact theory of logical deduction and inference based on definitions, axioms, postulates, and rules for combining and transforming primitive elements into more complex relations and theorems.

#### **Ancient Mathematics**

The earliest records of advanced, organized mathematics date back to the ancient Mesopotamian country of Babylonia and to Egypt of the 3rd millennium BC. There mathematics was dominated by arithmetic, with an emphasis on measurement and calculation in geometry and with no trace of later mathematical concepts such as axioms or proofs.

The earliest Egyptian texts, composed about 1800 BC, reveal a decimal numeration system with separate symbols for the successive powers of 10 (1, 10,

100, and so forth), just as in the system used by the Romans. Numbers were represented by writing down the symbol for 1 as many times as there were units in the given number, the symbol for 10 as many times as there were 10's in the number, and so on. Addition was done by totaling separately the units, 10's, 100's, and so forth in the numbers to be added. Multiplication was based on successive doublings, and division was based on the inverse of this process.

The Babylonian system of numeration was quite different from the Egyptians system. In the Babylonian system, which when using clay tablets consisted of various wedge-shaped marks, a single wedge indicated 1 and an arrow like wedge stood for 10. Numbers up through 59 were formed from these symbols through an additive process, as in Egyptians mathematics. The number 60, however, was represented by the same symbol as 1, and from this point on a positional symbol was used. That is, the value of one of the first 59 numerals depended henceforth on its position in the total numeral. For example, a numeral consisting of a symbol for 2 followed by one for 27 and ending in one for 10 stood for  $(2 \times 60^2 + 27 \times 60 + 10)$ . This principle was extended to the representation of fractions as well, so that the above sequence of numbers could equally well represent  $2 \times 60 + 27 + 10 \times (60)$ , or  $2 + 27 \times (60) + 10 \times (60 - 2)$ . With this sexagesimal system (base 60), as it is called, the Babylonians had as convenient a numerical system as the 10-based system.

### **Activities**

***Give the Usbek equivalent of the following English words and word combinations.***

quantities, properties, to deduce, definition, postulate, concept, counting, ancient, sum, fraction, to find areas of triangles, volume, invention, angle, cube;

### **Comprehension**

***Read the text and decide if the following statements are true or false.***

- 1) Mathematics studies the relationships among quantities, magnitudes and properties.
- 2) Mathematics is not so old as humanity itself.
- 3) In the 3<sup>rd</sup> millennium B.C. mathematics was dominated by arithmetic.
- 4) The Egyptians couldn't solve the problems of arithmetic that involved fractions.
- 5) In geometry, the Egyptians were able to find areas of triangles, rectangles and trapezoids, the volumes of figures such as bricks, cylinders, and pyramids.

## LESSON 2

### Mathematics - The Language of Science

#### Before you read

Discuss these questions with your partner.

- What is your native language?
- Is mathematics a special kind of language?
- Can people speaking different languages understand mathematics?
- Do you know the names of any important people connected with mathematics in history?

#### Vocabulary

*Match the words to make phrases.*

1. foremost	A. a common phrase
2. to use	B. reasons
3. scientific	C. world
4. unspoken	D. age
5. civilized	E. language

*a. Match these words with their definitions.*

1. symbol	A. the operation between two numbers which measures how many times bigger one number than the other
2. division	B. a way of drawing things so that they look real
3. special	C. a letter or sign used to represent instructions
4. circumference	D. another number which when squared will equal the first number

5. infinity	E. the distance measured around the curve which makes the circle
6. square root	F. the concept of a space, time or quantity that knows no bounds

## Pronunciation guide

reason ['rizsn]

specialize ['spejblaiz]

imply [im'plai]

quantitative ['kwontltstlv]

spatial ['speijl]

purposefully ['psipesfsl]

## Text 2

### Mathematics - The Language of Science

One of the foremost reasons given for the study of mathematics is, to use common phrase, that “mathematics is the language of science”. This is not meant that mathematics is useful only to those who specialize in science. No, it implies that even a layman must know something about the foundations, the scope and the basic role played by mathematics in our scientific age.

The language of mathematics consists mostly of signs and symbols, and, in sense, is an- unspoken language. There can be no more universal or more simple language, it is the same throughout the civilized world, through the people of each country translate it into their own particular language. For instance, the symbol 5 means the same to a person in England, Spain, Italy or any other country but in each country it may be called by a different spoken word. Some of the best known symbols of mathematics are the numerals 1, 2, 3, 4, 5, 6, 7, 8, 9, 0 and the signs of addition (+), subtraction (-), multiplication (x), division (:), equality (=) and the letters of the alphabets: Greek, Latin, Gothic and Hebrew (rather rarely).

Symbolic language is one of the basic characteristics of modern mathematics for it determines its true aspect. With the aid of symbolism mathematicians can make transitions in reasoning almost mechanically by the eye and leave their mind free to grasp the fundamental ideas of the subject matter. Just as music uses symbolism for the representation and communication of sounds so mathematics expresses quantitative relations and spatial forms symbolically. Unlike the common language, which is the product of custom, as well as social and political movements, the language of mathematics is carefully, purposefully and often ingeniously designed. By virtue of its compactness, it permits a mathematician to work with ideas which when expressed in terms of common language are unmanageable. This compactness makes for efficiency of thought.

Mathematics is the special kind of language. One so perfect and abstract that - hopefully it may be understood by intelligent creatures throughout the



universe, however different their organs of sense and perception. The grammar of the language - its proper usage - is determined by the rules of logic. Its vocabulary

intelligent - разумный

root - корень

ratio - отношение

tangent - касательный, тангенс

consists of symbols, such as: numerals for numbers, letters for unknown numbers, equations for relationships between numbers,  $n$  for the ratio of the circumference to the diameter of a circle;  $\sin$  (for sine),  $\cos$  (for cosine) and  $\tan$  (for tangent) for the ratios between sides in a right triangle;  $\sqrt{\phantom{x}}$  for a square root,  $\infty$  for infinity,  $B$ ,  $X$ , for assorted other concepts in higher mathematics.

All of these symbols are tremendously helpful to the scientist because they serve to short-cut his thinking.

assort - группировать, классифицировать

circumference - окружность

ratio - отношение

tangent - касательный, тангенс

intelligent - разумный

root - корень

## Comprehension

Read the text and answer the questions in your own words.

- 1) Whom is mathematics useful to?
- 2) What does the language of mathematics consist of?
- 3) What are the best known symbols of mathematics?
- 4) How can mathematicians make transitions in reasoning?
- 5) What does mathematics express symbolically?
- 6) How is the language of mathematics designed?
- 7) What symbols of mathematical vocabulary do you know?

## Speaking

Discuss these questions with your partner:

- How important is the study of mathematics for our world today?
- Would you prefer to study it? Why?
- Are there any areas of mathematics which you think are more important than others?

*Task:* Prepare a short presentation to answer the question: "What is mathematics?" Use the information in both texts.

Talk about:

- What the study of mathematics includes
- Primitive counting system
- The difference between the Babylonian system of numeration and Egyptian system
- The invention of an abstract mathematics by the Greeks
- The use of symbols in modern mathematics

## LESSON 3

### AREAS OF SPECIALIZATION STUDIED

#### AREAS OF MATHEMATICS

Mathematics encompasses a growing variety and depth of subjects over history, and comprehension requires a system to categorize and organize the many subjects into more general **areas of mathematics**. A number of different classification schemes have arisen, and though they share some similarities, there are differences due in part to the different purposes they serve. In addition, as mathematics continues to be developed, these classification schemes must change as well to account for newly created areas or newly discovered links between different areas. Classification is made more difficult by some subjects, often the most active, which straddle the boundary between different areas.

It is impossible to give a concise and readily acceptable definition of mathematics as it is a multifield subject. Mathematics in the broad sense of the word is a peculiar form of the general process of human knowledge of the real world. Mathematics deals with the space forms and quantity relations abstracted from the physical world. Mathematical abstractions are idealizations that have material or physical origin.

Numbers are abstracted ideas or mental notions only, for numbers do not exist in nature. In mathematics the abstracted notions and laws become divorced from the real world. In a formal mathematical system the content is put aside as irrelevant. Mathematics enjoys an unparallel world-wide reputation of objectivity. Contemporary mathematics is a mixture of much that is very old and still important (e. g., counting, the Pythagorean theorem) with new concepts such as sets, axiomatics, structure. The totality of all abstract mathematical sciences is called **Pure Mathematics**. Pure mathematics is borrowed from the physical world; it represents only one part of its forms of interconnection. The totality of all concrete interpretations is called **Applied Mathematics**. Together they constitute Mathematics as a science.

#### Algebra

##### Before you read

*Discuss these questions with your partner.*

What is algebra?

From which branch of mathematics does algebra differ in many ways?

Can you think of any ways that we use it in our everyday lives?

##### Vocabulary

*a. Match these words and phrases with their definitions.*

1	algebra	A	a statement that two expressions have the same value
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2	a root of an equation	B	the branch of mathematics that deals with generalized arithmetic by using letters or symbols to represent numbers
3	equation	C	a value that will satisfy the equation which has been formed by putting an expression, containing one variable, equal to zero
4	set	D	a word which is used to indicate an association with a straight line
5	linear	E	a multinomial having two terms
6	binomial	F	a collection of objects, letters, numbers or symbols

***b. Match the words to make phrases.***

ancient	F. segments
solving	G. powers
line	H. equations
algebraic	I. Egypt
reduce	J. numbers
complex	K. solution

**Pronunciation guide**

ancient ['eɪnʃnt]

identity [aɪ'dentɪti]

equation [ɪ'kweɪʃn]

binomial [baɪ'nəʊmɪəl]

procedure [prə'si:dʒər]

approximation [əˌprɒksɪ'meɪʃən]

**Text 3. Algebra**

Algebra, branch of mathematics in which letters are used to represent basic arithmetic operations. As in arithmetic, the basic operations of algebra are addition, subtraction, multiplication, division, and the extraction of roots.

Classical algebra, which is concerned with solving equations, uses symbols instead of specific numbers and uses arithmetic operations to establish ways of handling symbols.

Modern algebra has evolved from classical algebra by increasing its attention to the structures within mathematics. Mathematicians consider modern algebra to be a set of objects with rules for connecting or relating them. As such, in its most general form, algebra may fairly be described as the language of mathematics.

The history of algebra began in ancient Egypt and Babylon, where people learned to solve linear and quadratic equations, as well as indeterminate equations

whereby several unknowns are involved. The ancient Babylonians solved arbitrary quadratic equations by essentially the same procedures taught today. They also could solve some indeterminate equations.

The Alexandrian mathematicians Hero of Alexandria and Diophantus continued the traditions of Egypt and Babylon, but Diophantus' book *Arithmetica* is on a much higher level and gives many surprising solutions to difficult indeterminate equations. This ancient knowledge of solutions of equations in turn found a home early in the Islamic world, where it was known as the "science of restoration and balancing". In the 9th century, the Arab mathematician Al-Khwarizmi wrote one of the first Arabic algebras, a systematic expose of the basic theory of equations, with both examples and proofs. By the end of the 9th century, the Egyptian mathematician Abu Kamil had stated and proved the basic laws and identities of algebra and solved such complicated problems as finding  $x$ ,  $y$ , and  $z$  such that  $x + y + z = 10$ ,  $x^2 + y^2 = z^2$ , and  $xz = y^2$ .

Ancient civilizations wrote out algebraic expressions using only occasional abbreviations, but by medieval times Islamic mathematicians were able to talk about arbitrarily high powers of the unknown variable  $x$ , and work out the basic algebra of polynomials (without yet using modern symbolism). This included the ability to multiply, divide, and find square roots of polynomials as well as a knowledge of the binomial theorem. The Persian mathematician, astronomer, and poet Omar Khayyam showed how to express roots of cubic equations by line segments obtained by interesting conic sections, but he could not find a formula for the roots. A Latin translation of Al-Khwarizmi's *Algebra* appeared in the 12th century. In the early 13th century, the great Italian mathematician Leonardo Fibonacci had traveled in Islamic lands, he probably used an Arabic method of successive approximations.

Early in the 16th century, the Italian mathematicians Scipione del Ferro, Niccolo Tartaglia, and Gerolamo Cardano solved the general cubic equation in terms of the constants appearing in the equation. Cardano's pupil, Ludovico Ferrari, soon found an exact solution to equations of the fourth degree, and as a result, mathematicians for the next several centuries tried to find a formula for the roots of equations of degree five, or higher. Early in the 19th century, however the Norwegian mathematician Niels Abel and the French mathematician Evariste Galois proved that no such formula exists.

An important development in algebra in the 16th century was the introduction of symbols for the unknown and for algebraic powers and operations. As a result of this development, Book 3 of *La geometrie* (1637), written by the French philosopher and mathematician Rene Descartes, looks much like a modern algebra text. Descartes's most significant contribution to mathematics, however, was his discovery of analytic geometry, which reduces the solution of geometric problems to the solution of algebraic ones. His geometry text also contained the essentials of a course on the theory of equations, including his so-called rule of signs for counting the number of what Descartes called "true" (positive) and

“false” (negative) roots of an equation. Work continued through the 18th century on the theory of equations, but not until 1799 was the proof published, by the German mathematician Carl Friedrich Gauss, showing that every polynomial equation has at least one root in the complex plane. Ancient civilizations wrote out algebraic expressions using only occasional abbreviations. By medieval times Islamic mathematicians were able to talk about arbitrarily high powers of the unknown variable  $x$ , and work out the basic algebra of polynomials. This included the ability to multiply, divide, and find square roots of polynomials as well as knowledge of the binomial theorem. Persian mathematician, astronomer, and poet Omar Khayyam showed how to express roots of cubic equations.

*extraction of roots - извлечение*

*to establish – устанавливать корней*

*identity - тождество polynomials - многочлены*

*complicated - сложный*

*to obtain - получать*

### **Comprehension**

***Read the text and decide if the following statements are true or false.***

1. Algebra, branch of mathematics in which letters are used to represent basic geometric relations.
2. Mathematicians consider modern algebra to be a set of objects with rules for connecting or relating them.
3. The Egyptian mathematician Abu Kamil had stated and proved the basic laws and identities of algebra.
4. A great Italian mathematician Fibonacci showed how to express roots of cubic equations by line segments obtained by intersecting conic sections.
5. Cardano solved the general cubic equation in terms of the constants appearing in the equation.
6. Galois' contribution to mathematics was his discovery of analytic geometry.

### **Speaking**

***Discuss these questions with your partner.***

How do you think algebra differs from arithmetic?

What is classical algebra concerned with?

How do mathematicians consider modern algebra to be?

Who continued the traditions of Egypt and Babylon?

When had algebra entered its modern phase?

***Task: in groups, discuss the development of algebra from ancient times up to modern times.***

**Talk about:**

basic operations of algebra

the difference between classical and modern algebra  
algebra in ancient Egypt and Babylon  
the contribution of Arab mathematicians in algebra  
great European mathematicians of the 13th and the 19th centuries

**First complete these notes. Use them in your presentations.**

Classical algebra uses symbols instead of ...

Mathematicians consider modern algebra to be a set of ...

Diophantus continued the traditions of .

Islamic mathematicians were able to talk about .

An important development in algebra in Europe was the introduction of .

Modern or abstract algebra has been applied in

**Remember to:**

plan what you are going to say

give examples.

## LESSON 4

### Mathematics and Computers

#### Before you read

*Discuss these questions with your partner.*

How important have computers become in the modern world?

Do you use a computer?

What do you use it for?

#### Vocabulary

*Match the words to make phrases.*

1	Contribute	A	the idea
2	Introduce	B	equations
3	Perform	C	to the development of computer science
4	Solve	D	the basic principles
5	Establish	E	mathematical operations
6	Draw	F	computer systems
7	Develop	G	an enormous influence
8	Exercise	H	attention
9	Become	I	great impetus
10	Give	J	powerful tools

#### Text 4. Mathematics and Computers

Mathematicians, physicists, and engineers contributed to the development of computers and computer science. But the early, theoretical work came from

mathematicians. English mathematician Alan Turing, working at Cambridge University, introduced the idea of a machine that could perform mathematical operations and solve equations. The Turing machine, as it became known, was a precursor of the modern computer. Through his work Turing brought together the elements that form the basis of computer science: symbolic logic, numerical analysis, electrical engineering, and a mechanical vision of human thought processes.

Computer theory is the third area with which von Neumann is associated, in addition to mathematical physics and game theory. He established the basic principles on which computers operate. Turing and von Neumann both recognized the usefulness of the binary arithmetic system for storing computer programs.

The first large-scale digital computers were pioneered in the 1940s. Von Neumann completed the EDVAC (Electronic Discrete Variable Automatic



Computer) at the Institute of Advanced Study in Princeton in 1945. Engineers John Eckert and John Mauchly built ENIAC (Electronic Numerical Integrator and Calculator), which began operation at the University of Pennsylvania in 1946. As increasingly complex computers are built, the field of artificial intelligence has drawn attention. Researchers in this field attempt to develop computer systems that can mimic human thought processes.

Mathematician Norbert Wiener, working at the Massachusetts Institute of Technology (MIT), also became interested in automatic computing and developed the field known as cybernetics. Cybernetics grew out of Wiener's work on increasing the accuracy of bombsights during World War II. From this came a broader investigation of how information can be translated into improved performance. Cybernetics is now applied to communication and control systems in living organisms.

Computers have exercised an enormous influence on mathematics and its applications. As ever more complex computers are developed, their applications proliferate. Computers have given great impetus to areas of mathematics such as numerical analysis and finite mathematics. Computer science has suggested new areas for mathematical investigation, such as the study of algorithms. Computers also have become powerful tools in areas as diverse as number theory, differential equations, and abstract algebra. In addition, the computer has made possible the solution of several long-standing problems in mathematics, such as the four-color theorem first proposed in the mid-19th century.

The four-color theorem stated that four colors are sufficient to color any map, given that any two countries with a contiguous boundary require different colors. Mathematicians at the University of Illinois finally confirmed the theorem in 1976 by means of a large-scale computer that reduced the number of possible maps to slightly less than 2,000. The program they wrote ran thousands of lines in length and took more than 1,200 hours to run. Many mathematicians, however, do not accept the result as a proof because it has not been checked. Verification by hand would require far too many human hours. Some mathematicians object to the solution's lack of elegance. This complaint has been paraphrased, "a good mathematical proof is like a poem-this is a telephone directory."

*numerical analysis - численный анализ*

*artificial – искусственный*

*impetus - импульс, побуждение*

*to store - хранить, вмещать*

*to proliferate - распространяться*

*investigation – исследование*

### **Comprehension**

***Read the text. Then put the events (A-H) below in the correct order, from first to last, to show the procedure of developing computer science.***

Event 1 . A. The first large-scale digital computers were pioneered in the 1940's.  
Event 2 . B. Von Neumann is associated with computer theory. He established the basic principles on which computers operate.  
Event 3 . C. Alan Turing introduced the idea of a machine that could perform mathematical operations and solve equations.  
Event 4 . D. Engineers John Eckert and John Maughly built electronic numeral integrator and calculator.  
Event 5 . E. Norbert Wiener developed the field known as cybernetics.  
Event 6 . F. Computers have given great impetus to numerical analysis and finite mathematics.  
Event 7 . G. Computer solved the four - color theorem first proposed in the mid 19th century.  
Event 8 . H. Computer science has suggested new areas for mathematical investigation, such as the study of algorithms.

### **Speaking**

**Discuss these questions with your partner.**

When you think of a scientist, what image comes to mind?  
Do you think a scientist should have an all-round education?  
Do you think scientists are unusual in any way? If yes, in what way?

**Task : discuss with your partner the advantages and disadvantages of computers.**

**Talk about** - What computers can do  
What computers can't do  
-advantages of having /using a computer  
disadvantages of having/using computer

## LESSON 5

### GREAT REPRESENTATIVES OF THE STUDIED AREA

#### The Development of Mathematics in the 17th century

##### Before you read

*Discuss these questions with your partner.*

What is the job of an engineer?

Why does an engineer need to know math's?

##### Vocabulary

*Complete the sentences below with words and phrases from the box.*

differential calculus	linear equation
Infinitesimal	matrices
Chord	integral calculus
coordinate system	numerical

1. A ... is used to give the position of a point by placing it in relation to some other fixed positions.
2. A ... can be represented graphically by a straight line.
3. A rectangular array of elements is a ... .
4. The ... is concerned with swimming up the values of a function over a particular range.
5. A ... of a circle is any straight line drawn across a circle, beginning and ending on the curve making the circle.
6. ... is the measurements of length and weight.
7. An ... quantity is one which is so small that it is almost indistinguishable from zero.
8. The ... is that part of calculus which is concerned with the rate at which a function is changing.

#### Text 5. The Development of Mathematics in the 17th century

The scientific revolution of the 17th century spurred advances in mathematics as well. The founders of modern science - Nicolaus Copernicus, Johannes Kepler, Galileo, and Isaac Newton - studied the natural world as mathematicians, and they looked for its mathematical laws. Over time mathematics grew more and more abstract as mathematicians sought to establish the foundations of their fields in logic.

The 17th century opened with the discovery of logarithms by Scottish mathematician John Napier and Swiss mathematician Justus Byrgius. Logarithms enabled mathematicians to extract the roots of numbers and simplified many calculations by basing them on addition and subtraction rather than on multiplication and division. Napier, who was interested in simplification, studied the systems of the Indian and Islamic worlds and spent years producing the tables of logarithms that he published in 1614. Kepler's enthusiasm for the tables ensured their rapid spread.

The 17th century saw the greatest advances in mathematics since the time of the ancient Greeks. The major invention of the century was calculus. Although two great thinkers - Sir Isaac Newton of England and Gottfried Wilhelm Leibniz of Germany - have received credit for the invention, they built on the work of others. As Newton noted, "If I have seen further, it is by standing on the shoulders of giants." Major advances also were made in numerical calculation and geometry.

Gottfried Leibniz was born (1st July, 1646) and lived most of his life in Germany. His greatest achievement was an invention of calculus, the system of notation which is still in use today. Leibniz is remembered as an inventor, not the inventor of calculus. In England Isaac Newton claimed the distinction and was later to accuse Leibniz of plagiarism, that is stealing somebody else's ideas but stating that they are original. Modern-day historians however, regard Leibniz as having arrived at his conclusions independently of Newton. They point out that there are important differences in the writings of both men.

*law – закон*

*simplification – упрощение*

*spread – распространение*

*to advance - продвинуться вперед*

*to ensure – обеспечить*

*inventor – изобретатель*

### **Comprehension**

***Read the text and answer the questions in your own words.***

Who were the founders of modern science?

Do you know the major invention of the 17th century?

What contribution to mathematics is Leibniz best remembered for?

Which important geometrical terms did Leibniz invent?

Who is considered more important for the development of modern mathematics?

### **Speaking**

***Discuss these questions with your partner.***

Who do you think made the most important contribution to calculus?

What was that contribution?

**Task:** *in a group, discuss the disagreement between Leibniz and Newton.*

**Talk about:**

- invention of calculus
- worked independently
- who published first
- each men's contribution

## LESSON 6

### History of geometry

#### Before you read

*Discuss these questions with your partner.*

What do you think the word geometry means?

Do you know words associated with geometry?

How is geometry used in everyday life?

#### Vocabulary

*Match these words with their definitions.*

	angle	A	a measure of how much 2-dimensional space is covered by a surface
	area	B	a measure of how much space is contained within, or occupied by a 3-dimensional shape
	volume	C	an object is made when two straight lines cross or meet each other at a point
	trigonometry	D	a quadrilateral in which every interior vertex angle is a right angle
	triangle	E	the study of triangles with regard to their measurements and the relationships between them
	rectangle	F	a polygon which has 3 edges

#### Comprehension

*Read the text and choose the correct answer.*

- Geometry was first used to solve
  - common problems
  - abstract problems
- The Greeks made important advances in geometry.
  - only during the Classical Period
  - during both the Classical and Hellenistic Periods
- After the decline of Greek civilization
  - muslim mathematicians made considerable contributions to geometry
  - nothing new was discovered
- Between the 17th and 19th centuries, European mathematicians
  - ignored the Greeks ideas about geometry
  - created analytic geometry and projective geometry

## **Text 6. History of geometry**

Geometry (Greek; geo = earth, metria = measure) arose as the field of knowledge dealing with spatial relationships. It was one of the two fields of pre-modern mathematics, the other being the study of numbers. In modern times, geometric concepts have been subjected to the methods of calculus and abstract algebra, so that many modern branches of the field are barely recognizable as the descendants of early geometry.

During the Vedic period of Indian mathematics (c. 1500-500 BC ), many rules and developments of geometry are found in Vedic works as a result of the mathematics required for the construction of religious altars. These include the use of geometric shapes, including triangles, rectangles, squares, trapezia and circles, equivalence through numbers and area, squaring the circle and vice versa, the Pythagorean theorem and a list of Pythagorean triples discovered algebraically and computations of  $\pi$  (correct to 2 decimal places).

For the ancient Greek mathematicians, geometry was the crown jewel of their sciences, reaching a completeness and perfection of methodology that no other branch of their knowledge had attained. They expanded the range of geometry to many new kinds of figures, curves, surfaces, and solids; they changed its methodology from trial-and-error to logical deduction; they recognized that geometry studies “eternal forms”, or abstractions, of which physical objects are only approximations; and they developed the idea of an “axiomatic theory”, which, for more than 2000 years, was regarded to be the ideal paradigm for all scientific theories.

The Islamic Caliphate (Islamic Empire) established across the Middle East, North Africa, Spain, Portugal, Afghanistan and parts of Pakistan, began around 640 CE. Islamic mathematics during this period was primarily algebraic rather than geometric, though there were important works on geometry. Scholarship in Europe declined and eventually the Hellenistic works of antiquity were lost to them, and survived only in the Islamic centers of learning.

Although the Muslim mathematicians are most famed for their work on algebra, number theory and number systems, they also made considerable contributions to geometry, trigonometry and mathematical astronomy, and were responsible for the development of algebraic geometry. Geometrical magnitudes were treated as “algebraic objects” by most Muslim mathematicians however.

When Europe began to emerge from its Dark Ages, the Hellenistic and Islamic texts on geometry found in Islamic libraries were translated from Arabic into Latin. The rigorous deductive methods of geometry found in Euclid's *Elements of Geometry* were relearned, and further development of geometry in the styles of both Euclid (Euclidean geometry) and Khayyam (algebraic geometry) continued, resulting in an abundance of new theorems and concepts, many of them very profound and elegant.

In the early 17th century, there were two important developments in geometry. The first and most important was the creation of analytic geometry, or geometry with coordinates and equations, by Rene Descartes (1596-1650) and Pierre de Fermat (1601-1665).

Differential geometry first appeared in the 18th century and is linked with the names of Z. Eulur and G. Monge .

In the 19th century, Carl Frederich Gauss, Janos Bolyai and Nikolai Ivanovich Lobachevsky, each working alone, created non-Euclidean geometry. Euclid's fifth postulate states that through a point outside a given line it is possible to draw only one line parallel to that line - that is, one that will never meet the given line no matter how far the lines are extended in either direction. But Gause, Bolyai and Lobachevsky demonstrated the possibility of constructing system of geometry in which Euclid's postulates of the unigue parallel was replaced by a postulate stating that through any point not on a given straight line an infinite number of parallels to the given line could be drawn.

Their work influenced later researchers including Ricmann and Einstein.

<i>complexity</i> - сложность	<i>to create</i> - создавать
<i>branch</i> - раздел	<i>infinite</i> - бесконечный
<i>to draw</i> - рисовать, чертить	
<i>differential geometry</i> - дифференциальная геометрия	
<i>researcher</i> - исследователь	<i>cone</i> – конус
<i>deduction</i> - логический вывод, заключение	



## LESSON 7

### ACTUAL PROBLEMS OF THE STUDIED AREA

#### Actual problems of mathematics

##### Discussion

1. In mathematics the conviction that a definite mathematical problem can necessarily be solved must be supported by a proof either in the form of a direct answer to the question posed or by the proof of the impossibility of the solution. What about other sciences?
2. Among professional mathematicians asking questions rates almost as high as answering them. Why?
3. There are two kinds of mathematical problems: one is so easy that it is not worth doing and the other so difficult that it can't be done. Give some examples.
4. It is one thing to say that a problem is not solved yet and another thing to say that it is impossible to solve it. How is it possible to prove a thing impossible?
5. What is more difficult to prove: the possibility (the existence) of a solution of some problem or the impossibility (the nonexistence) of the solution sought?
6. How is it possible to prove that certain problem cannot be so. What other branches of mathematics, besides geometry, have unsolved problems with seemingly simple nature failing the solution since Antiquity?
7. How can we estimate the new and novel developments in mathematics raised by the Greeks' famous unsolved problems?
8. What do the three famous problems have in common?
9. Your appreciation of "Squaring the circle", "Doubling and cube", "Trisecting the angle" problems.
10. Unsolved problems formulated by D. Hilbert in 1900, Which of them are solved? Choose one of them and explain why it is so difficult to solve it.
11. Unsolved problems of modern mathematics.

##### Read and translate the text

#### Text 7. ACTUAL PROBLEMS OF MATHEMATICS

In this lesson we are to get familiar with geometric constructions under the conditions specified and the famous unsolved problems in mathematics. Students are taught mathematics at school and college with the idea that all mathematical problems can be solved. Unfortunately, this is not the case. 3. In mathematics there exist problems that can be readily solved as well as the problems that are

impossible and the ones demanding the right often ingenious technique for their solution.

The Pythagoreans discovery that  $\sqrt{2}$  is irrational was the first example of a proof of impossibility in mathematics. Every mathematical problem must be settled either in the form of a direct answer to the question posed, or by the proof of the impossibility of its solution. Numerical evidence counts for very little, the only luxury a reputable mathematician allows himself is proof. Mathematical rigour in reasoning demands that the solution of the problem must be established by means of a finite number of steps based upon a finite number of hypotheses precisely formulated. This high standard of mathematical rigour was formulated by the ancient Greek mathematicians and philosophers in order to make mathematics finite, rigorous and coherent. The search for the construction problem solution is a favourite subject in Geometry. The ancient Greeks are given credit for posing famous unsolved construction problems that challenge mathematicians and amateurs alike even today. The Greeks imposed severe restrictions upon the instruments used for the construction. Ruler-compass constructions are the drawings made by using only a straightedge (= an unmarked ruler) and a compass. The constructions must be performed with the highest degree of accuracy and precision. The Greeks gave special attention to geometric constructions, as each construction served as a sort of existence theorem for the figure or concept involved. To prove that a certain object exists meant for the Greeks to construct it. With a straightedge we may draw (that is > construct) a line determined by any two points. With a compass we may construct a circle. The classical Greeks were able to carry out many constructions with these two permissible tools. Nevertheless, despite the persistent efforts, the Greeks failed to solve the three famous construction problems, viz., “squaring the circle”, “doubling the cube” and “trisecting the angle”. The Greek geometers realized that the allowable (instruments were inadequate for the solution sought. Though the construction was the main part of the solution it was not the whole task. The problems were of both practical and theoretical interest. The Greeks sought to prove that the constructions could be performed in principle, that the solution could be found theoretically. They tried to devise a theory in terms of which they could rely on the construction in place of the existence theorem, but they did not succeed in creating it, however.

The theory in question was developed successively by a Danish geometer G. Mohr (1672), then by an Italian engineer L. Mascheroni (1797) and by a Swiss scientist J. Steiner (1833). 21. In the 19th century it was finally proved that the famous unsolved problems defy solution under the restrictions specified. It should be emphasized that though the Greeks failed to find the solution satisfying their criterion, they made great mathematical discoveries on the way, for in mathematics there is no futile search. The failure with the classical unsolved problems was the stimulus for many novel developments in mathematics. Every generation of mathematicians ever since the Greek times on has to seek a proof that certain problems are solvable or insoluble in principle. The number of problems in

mathematics is inexhaustible and as soon as one problem is solved others come forth in' its place. Mathematics offers an abundance of unsolved problems.

### **Vocabulary**

to achieve	
to appeal (to)	
to approach	
to approximate	
to attain	
to attract	
to attribute	
to award	
to cease	
to challenge	
to conclude	
to converge	
to convince	
to defy	
to dwell (on)	
to estimate	
to exist	
to exhaust	
to extend	
to fail	
to generate	
to guide	
to identify	

### **Vocabulary exercises.**

#### **Make up sentences using vocabulary**

**Consult the dictionary, if necessary and give the Usbek equivalent of the following.**

**Nouns:** meaning, reasoning, reading, writing, drawing, thinking.

**Adjectives:** striking, surprising, astonishing, tiring, exhausting, annoying, missing, lacking, exciting, startling, intriguing, tempting, misleading, convincing, encouraging, disappointing, running, appealing, inspiring, boring.

## LESSON 8

### Unsolved Problems in Mathematics

#### Unsolved Problems in Mathematics

1. Cantor's Problem of the Cardinal Number of the Continuum.
2. The compatibility of the Arithmetical axioms.
3. The equality of the volumes of two tetrahedra of equal bases and equal altitudes.
4. Problems of the straight line as the shortest distance between two points.
5. Lie's concept of a continuous group of transformations without the assumption of the differentiability of the functions defining the group,
6. Mathematical treatment of the axioms of physics.
7. Irrationality and transcendence of certain numbers.
8. Problems of prime numbers.
9. Proof of the most general law of reciprocity in any number field.
10. Determination of the solvability of a Diophantine equation.
11. Quadratic forms with any algebraic numerical coefficients.
12. Extension of Kronecker's theorem on Abelian fields to any algebraic realm of rationality.
13. Impossibility of the solution of the general equation of the 7th degree by means of functions of only two arguments.
14. Proof of the finiteness of certain complete systems of functions.
15. Rigorous foundations of Schubert's enumerative calculus.
16. Problem of the topology of algebraic curves and surfaces.
17. Representation of definite forms by squares.
18. Building up of space from congruent polyhedra.
19. Are the solutions of regular problems in the calculus of variations always necessarily analytic?
20. The general problem of boundary values.
21. Proof of the existence of linear differential equations having a prescribed monodromic group.
22. Uniformization of analytic relations by means of automorphic functions.
23. Further development of the methods of the calculus of variations.

The problems mentioned are merely samples of problems yet they "will suffice to show how rich, how manifold and extensive the mathematical science of today is, and the question is raised whether mathematics can like other sciences split into separate branches, whose representatives can hardly understand one another and whose connection becomes ever more loose. I do not believe this nor wish it. Mathematical science is in my opinion, an indivisible whole, an organism whose vitality is conditioned upon the ties of its parts. For with all the variety of mathematical knowledge, we are still convinced of the similarity of the logical de-

vices, the relationship of the ideas in mathematics as a whole and, the numerous analogies in its different departments.

But, we ask, with the extension of mathematical knowledge cannot it finally become impossible for a single person to embrace all the areas of this knowledge? In answer let me point out, that it is quite possible for the individual investigator to master and make all new sharper tools and methods his own and find his way more easily in the various parts of modern mathematics that it is possible in any other science. The organic unity of mathematics is inherent in the nature of this science, for mathematics is the foundation of all exact knowledge of natural phenomena. That it may completely fulfil this high mission, may (let) the new century bring it gifted master and many enthusiastic disciples.

### **Vocabulary.**

to	impose
to	intersect
to	intrude
to	investigate
to	issue
to	pursue
to	recur
to	reduce
to	refer (to)
to	refute
to	remind
to	restrict
to	Reveal
to	Reverse
to	Satisfy
to	Specify
to	succeed
to	Suffice
to	surmount

### **Vocabulary exercises.**

#### **Make up sentences using vocabulary**

**Adverbs:** according, notwithstanding, running.

**Prepositions:** according to, concerning, regarding, respecting, relating to, pertaining, considering, touching, excepting, saving, pending, during, failing, following, owing to, depending on.

**Conjunctions:** providing, granting, supposing.

## LESSON 9

### PROFESSIONAL ETHICS IN MATHEMATICS

#### **Before you read**

*Discuss these questions with your partner.*

What do you know about ethics in mathematics?

Do you know words associated with ethics?

#### **Read, translate and discuss the text.**

Ethics in mathematics is a field of [applied ethics](#), the inquiry into ethical aspects of the applications of [mathematics](#). It deals with the professional responsibilities of [mathematicians](#) whose work influences decisions with major consequences, such as in law, finance, the military, and environmental science. Many research mathematicians see no ethical implications in their pure research but assumptions made in mathematical approaches can have real consequences

Mathematicians in industrial, scientific, military and intelligence roles crucially influence decisions with large consequences. For example, complex calculations were needed for the success of the [Manhattan Project](#), while the overextended use of the [Gaussian copula](#) formula to price derivatives before the [Global Financial Crisis](#) of 2008 has been called "the formula that killed Wall Street", and the theory of global warming depends on the reliability of [mathematical models of climate](#). For the same reason as in [medical ethics](#) and [engineering ethics](#), the high impact of the consequences of decisions imposes serious ethical obligations on practitioners to consider the rights and wrongs of their advice and decisions. The potential impact of data and new technology is leading more professions, such as accountancy, to consider how bias is overseen in automated systems, from algorithms to AI.

These illustrate the major consequences of numerical mistakes and hence the need for ethical care.

The [Club of Rome](#)'s 1972 mathematical-model based predictions in [The Limits to Growth](#) of widespread collapse of the world system by the end of the century.

Mathematicians in professional roles in finance and similar work have a particular responsibility to ensure they use the best methods and data to reach the right answer, as the prestige of mathematics is high and others rely on mathematical results which they cannot fully understand. Other ethical issues are shared with [information economy](#) professionals in general, such as [duty of care](#), [confidentiality](#) of information, [whistleblowing](#), and avoiding [conflict of interest](#).

Mathematicians have a professional responsibility to support the ethical use of mathematics in practice, both sustain the reputation of the profession and protect

society from the impacts of ethical behaviour. For example, mathematics is extensively applied in the use of [Big Data](#) in [Artificial Intelligence](#) applications, both by mathematicians and non-mathematicians, with complex impacts that are not readily understood or anticipated

The [American Mathematical Society](#) publishes a code of ethical guidelines for mathematical researchers. The responsibilities of researchers include being knowledgeable in the field, avoiding plagiarism and giving credit, to publish without unreasonable delay, and to correct errors.[https://en.wikipedia.org/wiki/Ethics\\_in\\_mathematics](https://en.wikipedia.org/wiki/Ethics_in_mathematics) - cite note-8 The [European Mathematical Society](#) **Ethics** Committee also publishes a code of practice relating to the publication, editing and refereeing of research.[https://en.wikipedia.org/wiki/Ethics\\_in\\_mathematics](https://en.wikipedia.org/wiki/Ethics_in_mathematics) - cite note-9

It has been argued that as pure mathematical research is relatively harmless, it raises few urgent ethical issues. However, that raises the question of whether and why pure mathematics is ethically worth doing, given that it consumes the lives of many highly intelligent people who could be making more immediately useful contributions.

### **Ethics and new technologies**

Ethics is particularly important for the accountancy profession, with a code for professional ethics based on five basic principles – integrity, objectivity, competence and due care, confidentiality and professional behaviour. However, the emergence of new technologies raises some new challenges for the profession to address.

#### **New ethical questions**

The increasing use of big data, algorithmic decision-making and artificial intelligence can enable more consistent, evidence-based and accurate judgments or decisions, often more quickly and efficiently. However, these strengths can potentially have a darker side too, throwing up questions around the ethical use of these fairly new technologies.

For example, outputs can be based on biased data, which could lead to discriminatory outcomes. Indeed, where systems learn from real world data, there is a significant risk that those systems simply recreate the past and subsequently build in errors or systemic biases. Closely linked to discrimination is personalisation, and the impact of tailoring decisions very specifically to individuals, based on preferences, activities and other features. While this can be beneficial for many, others can lose out, and outcomes can again seem unfair or unethical.

Additionally, questions are being asked regarding the interaction between computers and humans. How much reliance can we place on data and models, and what is the role of human judgement, as well as how do we ensure that we understand the decision-making process? Whatever the power of machine, humans

will still need to be involved, so that people can be held accountable, or explain the reasons behind a decision.

Opportunities and challenges for the accountancy profession

The above mentioned five core principles of the [code of ethics](#) will remain highly relevant in the face of big data, algorithms and artificial intelligence, but the accountancy profession is confronted with addressing new challenges, such as creating training models to produce outcomes which reflect these ethical principles.

The core principles are also relevant to other professions or technical specialists that are exploring ethical questions around technology. The accountancy profession can provide advice on this wider focus on ethics, sharing its experience of embedding ethics in an organisation and training people to think about ethics. It can also contribute to new thinking about the governance and assurance needed around algorithms and AI, so that all stakeholders can have confidence in their appropriate use.

ICAEW is undertaking a wide range of work across the theme of ethics and new technologies, considering the impact on the accountancy code of ethics, businesses, audit and other areas of accountancy practice.



## LESSON 10

### Before you read

*Discuss these questions with your partner.*

How did geometry develop during the Renaissance (15th -17th century AD)

Are there any differences or similarities between maths and philosophy?

### Vocabulary

*Find a synonym in the box for the underlined words and phrases in the sentences.*

Prosperity	advance
Goal	knowledgeable
synthetic geometry	analytic geometry

1. The country was going through a time of successfulness.
2. His aim was to introduce the complex numbers into the number system.
3. The students studied a kind of geometry that used theorems and observations to reach conclusions.
4. Rene Descartes was a well-educated man.
5. He invented a kind of geometry involving curves and understanding them.
6. During the 17th and the 18th centuries geometry developed immensely in Europe.

### Text 10. Analytic Geometry

The most important development in geometry during the 17th century was the discovery of analytic geometry by Rene Descartes and Pierre de Fermat, working independently in France. Analytic geometry makes it possible to study geometric figures using algebraic equations.

Rene Descartes was born in France on 31st march, 1596, at a time of major change in the world. The great wars which had been going on throughout Europe had finally ended and a period of exploration, expansion and prosperity had begun. After completing his education at the University of Poitiers Descartes began to work on his goal of presenting a new way of looking at philosophy and mathematics. He was knowledgeable about the work of Plato and Aristotle. Descartes' goal was to find answers to philosophical questions by applying mathematical methodology.

Another of his goals was to advance the field of mathematics, particularly geometry. Until that time, Euclidean geometry, also known as synthetic geometry, was the most well known.

Descartes wished to overcome the limitations of Euclidean geometry, and he did so by applying algebra to geometry. In his publication Discours de la method

(1637; Discourse on Method), Descartes showed how to use developments in algebra since the Renaissance to investigate the geometry of curves. Descartes maintained that an acceptable curve is one that can be expressed by a unique algebraic equation in  $x$  and  $y$ . His introduction of  $x$  and  $y$  coordinates was a major step. This made possible the classification of equations by the shape of the curves they made when graphed, and it opened the study of curves. As a consequence, many new curves important for science, including the cycloid and catenary, were introduced in the 17th and 18th centuries.

Descartes's discoveries in geometry led to a reversal of the historical roles of geometry and algebra. French mathematician Joseph Louis Lagrange observed in the 18th century, "As long as algebra and geometry proceeded along separate paths their advance was slow and their applications limited. But when these sciences joined company, they drew from each other fresh vitality and thenceforward marched on at a rapid pace toward perfection".

Descartes's book, together with short treatises published along with it, provided the impetus and basis for Newton's mathematical work later in the century. Fermat, however, regarded his own work on what became known as analytic geometry as a reformulation of Appollonius's treatise on conic sections. That treatise had provided the basic work on the geometry of curves from ancient times until Descartes.

*exploration* - исследование

*expansion* - расширение

*maintain* - поддерживать

*complete* - завершать

*proceed* - продолжать

*consequence* - следствие

### **Comprehension**

***Read the text and decide if the following statements are true or false.***

Descartes' time was one of major changes.

Descartes had not been influenced by earlier philosophers.

Descartes overcame the limitations of Euclidean geometry by applying algebra to geometry.

Descartes' major contribution was to calculus.

Descartes aimed to invent a new branch of mathematics and philosophy.

### **Speaking**

**Discuss these questions with your partner.**

What was the situation in Europe when Descartes was born?

Who was he influenced by?

What did open the study of curves?

**Task: discuss Descartes' achievements with your partner.**

**Talk about:**

- his aims to reach knowledge by using mathematical methodology to find answers to philosophical questions.
- his contributions - philosophy, Cartesian coordinates, algebra, analytic geometry.
- his influence on Newton's mathematical work

## LESSON 11

### RELATIVE DISCIPLINES TO MATHEMATICS

#### Mathematical disciplines

#### Disciplines of Mathematics

1. **Arithmetic.** It is one of the oldest disciplines of the mathematics and also the most basic. ...
2. **Algebra.** One of the most widely used disciplines of mathematics, algebra involves the study of mathematical variables, functions, equations and the rules associated with them. ...
3. **Geometry.** ...
4. **Trigonometry.** ...
5. **Calculus.**

#### Disciplines of Mathematics

Mathematics is one of the most important areas of study for mankind. It has applications in almost all fields: science, technology, business, medicine, meteorology, astronomy, etc. From elementary addition and subtraction to rocket science, mathematics is present everywhere.

Mathematics is a vast area of study and has developed throughout history. It is divided into several disciplines. Let's take a look at some of the popular disciplines.

#### 1. Arithmetic

It is one of the oldest disciplines of the mathematics and also the most basic. It deals with **numbers and elementary operators** - addition, subtraction, multiplication, and division. All the basic rules of interactions of these operators with numbers are covered in arithmetic. You can say that arithmetic is everyday math, useful for handy calculations. A simple multiplication problem is:

$$9 \times 10 = 90$$

These numbers and operators form the basic building blocks of other disciplines of mathematics.

## 2. Algebra

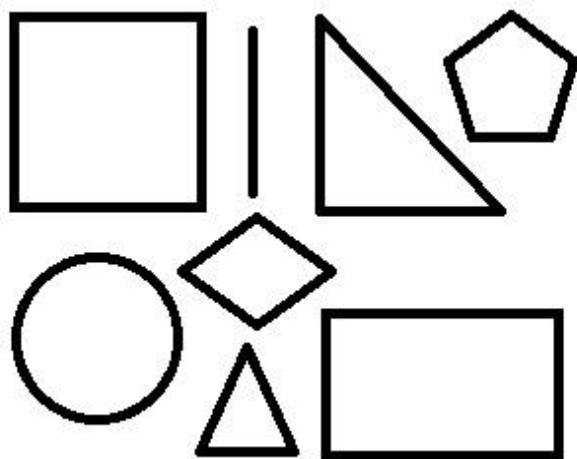
One of the most widely used disciplines of mathematics, **algebra** involves the study of mathematical variables, functions, equations and the rules associated with them. It uses unknown quantities represented by letters or symbols. It is the most basic and essential field of study and has applications across all the disciplines. Most commonly, it is used for solving equations for unknown variables. A typical algebra problem would look like:

$$8x - 3 = 3x + 17$$

The equation-solving rules in algebra are often applied in other disciplines as well.

## 3. Geometry

The study of shapes, sizes, distance, location, etc. is called **geometry**. It covers length, area and volume, in 1, 2 and 3 dimensional planes, respectively. It has many applications in our day-to-day life, such as finding the area of a plot of land, finding volume of a gas cylinder, etc. It also has many complex applications, such as in the field of astronomy to mark locations of stars, calculating distances between two celestial bodies, etc.

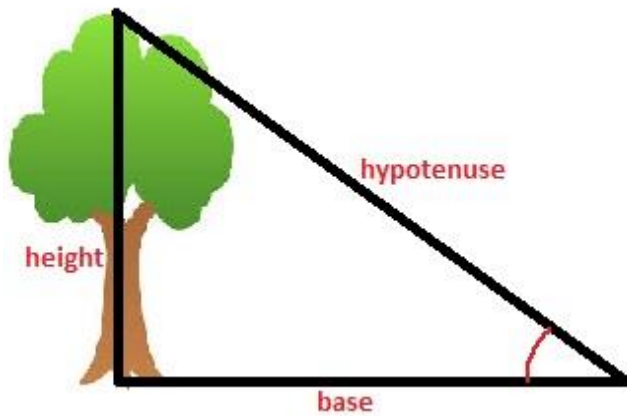


*Various geometrical shapes*

Geometry forms the basis of the next discipline, trigonometry.

## 4. Trigonometry

This discipline involves the study of relationship between **angles and sides of a triangle**. Most commonly it is used for right-angled triangles. It has special functions, called **trigonometric functions** that relate the sides and angles. In real life applications, it is used commonly for findings heights of towers, buildings, mountains, etc. Trigonometric functions are also used in study of waves and their characteristics.



### *Application of trigonometry*

## **5. Calculus**

**Calculus** is another vast discipline associated with the study of conditions of continuous change and its impact on functions. It has two major branches:

- **Differential calculus** deals with the rate of change and slope of continuous functions. For example, biologists determine the rate of growth in bacterial culture with the help of differential calculus.
- **Integral calculus** involves calculating accumulation of entities and areas under curves. It is often used by architects to calculate the quantity of materials required for curved surfaces.

## LESSON 12

### Before you read

*Discuss these questions with your partner.*

What do you know about calculus?

Can you think of a problem calculus could be used to solve?

### Vocabulary

*a. Match these words with their definitions.*

	calculus	A	a shape formed 3-dimensional space.
	solid	B	a word used to describe a system of rules of reasoning that is used for doing a certain type of calculation.
	differential calculus	C	a measure of how the velocity of a moving object is changing in relation to time.
	infinite series	D	a part of calculus which is concerned with summing the values of a function over a particular range.
	integral calculus	E	there is no last term; it is always possible to write another one.
	acceleration	F	a part of calculus which is concerned with the rate at which a function is changing

*b. Complete the sentences below with words from the box.*

changing quantity	integral
limit	infinite series
Archimedes	

1. Newton's calculus was the application of ...
2. Calculus is a branch of mathematics using the idea of ....
3. Only in the 20th century the idea of ... has been extended and got new uses.
4. One of the greatest Greek mathematicians ... is justly called “the father of the integral calculus”.
5. It was Newton who regarded a function as ...

#### **Text 4. Integral and Differential calculus**

Calculus is a branch of mathematics using the idea of a limit and generally divided into two parts: integral and differential calculus.

Integral and differential calculus can be used for finding areas, volumes, lengths of curves, centroids, and moments of inertia of curved figures. It can be traced back to Eudoxus of Cnidus and his method of exhaustion (c. 360 BC). Archimedes (in "The Method") developed a way of finding the areas of curves by considering them to be divided up by many parallel line segments, and extended it to determine the volumes of certain solids; for this he is sometimes called the "father of the integral calculus".

In the early 17th century interest again developed in measuring volumes by integration methods. Kepler used a procedure for finding the volumes of solids by taking them to be composed of an infinite set of infinitesimally small elements ("Measurement of the Volume of Barrels", 1615). These ideas were generalized by Cavalieri in his "Geometria indivisibilibus continuorum nova" (1635), in which he used the idea that an area is made up of indivisible lines and a volume of indivisible areas; i.e., the concept used by Archimedes in "The Method". Cavalieri thus developed what became known as his "method of indivisible". John Wallis, in "Arithmetica infinitorum" (1655) arithmetized Cavalieri's ideas. In this period infinitesimal methods were extensively used to find lengths and areas of curves.

Differential calculus is concerned with the rates of changes of functions with respect to changes in the independent variable. It came out of problems of finding tangents to curves, and an account of the method is published in Isaac Barrow's "Lectiones geometricae" (1670). Newton had discovered the method (1665-66) and suggested that Barrow include it in his book. In his original theory Newton regarded a function as a changing quantity - a fluent - and the derivative or rate of change he called a fluxion. The slope of a curve at a point was found by taking a small element at the point and finding the gradient of a straight line through this element. The binomial theorem was used to find the limiting case,

e., Newton's calculus was an application of infinite series. He used the notation  $x'$  and  $y'$  for fluxions and  $x''$  and  $y''$  for fluxions of fluxions. Thus, if  $x = f(t)$ , where  $x$  is the distance and  $t$  - the time for a moving body, then  $x'$  is the instantaneous velocity and  $x''$  - the instantaneous acceleration. Leibniz had also discovered the method by 1676 publishing it in 1684. Newton did not publish until 1687. A bitter dispute arose over the priority for the discovery. In fact it is now known that the two made their discoveries independently and that Newton made his about ten years before Leibniz, although Leibniz published first. The modern notation of  $dy/dx$  and the elongated  $s$  for integration is due to Leibniz.

From about this time integration came to be regarded simply as the inverse process of differentiation. In the 1820s Cauchy put the differential and integral calculus on a more secure footing by using the concept of a limit. Differentiation he defined by the limit of a ratio and the integration by the limit of a type of sum. The limit definition of integral was made more general by Riemann.

In the 20th century the idea of an integral has been extended. Originally integration was concerned with elementary ideas of measure (i.e., lengths, areas and volumes) and with continuous functions. With the advent of set theory functions came to be regarded as one-to-one mappings, not necessarily continuous, and more general and abstract concepts of measure were introduced. Lebesgue put forward a definition based on the Lebesgue measure of a set. Similar extensions of the concept have been made by other mathematicians.

infinitesimal method - метод

fluxion – производная бесконечно малых

differentiation - дифференцирование

infinite series - бесконечный ряд

fluent - переменная величина

### **Comprehension**

***Read the text and answer the questions in your own words.***

What idea is constantly used in calculus?

How many parts is calculus divided into?

What for can integral and differential calculus be used?

What way did Archimedes consider areas of curves?

Kepler thought that solids were composed of an infinite set of infinitesimally small elements, didn't he?

What is differential calculus concerned with?

What way did Newton regard a function in his original theory?

What quantity did Newton call a fluxion?

What idea was used by Newton in his theory of calculus?

Is the modern notation of  $dy/dx$  and the elongated  $s$  for integration due to Leibniz or Newton?

Did integration come to be regarded simply as the inverse process of differentiation from the time of Newton or Archimedes?

Who put forward a definition based on the so called “Lebesgue measure of a set”?



## LESSON 13

### ISSUES OF TEACHING AND INTERPRETING TEXTS, TERMS AND DEFINITIONS OF MATHEMATICS

This study illuminates claims that teachers' mathematical knowledge plays an important role in their teaching of this subject matter. In particular, we focus on teachers' mathematical knowledge for teaching (MKT), which includes both the mathematical knowledge that is common to individuals working in diverse professions and the mathematical knowledge that is specialized to teaching.

#### General Analytic Strategy

Our strategy for determining the role mathematical knowledge plays in the mathematical quality of teaching involved both quantitative and qualitative analyses. To answer our first two research questions about the overall strength and nature of the MKT–MQI relationship, we began by scoring teachers' lessons on a rubric designed to represent facets of the mathematical quality of instruction, and correlating these scores with teachers' score on a pencil-and-paper assessment of mathematical knowledge for teaching. To confirm the strength of this relationship, and to challenge ourselves to uncover competing explanations for it, we next turned to more in-depth qualitative analysis via the construction of comparative case studies.

#### Sample and Data Collection

The data collected for the videotape study were part of a larger measures-development project with multiple goals. This project investigates the mathematical knowledge needed for teaching, and how such knowledge develops as a result of experience and professional learning. One result of our work has been a set of multiple-choice measures of teachers' MKT. The sampling and data collection described in this article grows from our efforts to validate these measures by examining the relationship between teachers' MKT and MQI scores.

#### Something about Mathematical Sentences

In all branches of mathematics you need to write many sentences about numbers. For example, you may be asked to write an arithmetic sentence that includes two numerals which may name the same number or even different numbers. Suppose that for your sentence you choose the numerals 8 and  $11-3$  which name the same number. You can denote this by writing the following arithmetic sentence, which is true:  $8 = 11 - 3$ .

Suppose that you choose the numerals  $9+6$  and 13 for your sentence. If you use the equal sign ( = ) between the numerals you will get the following sentence  $9+6=13$ . But do  $9+6$  and 13 both name the same number? Is  $9+6=13$  a true sentence? Why or why not?

You will remember<sup>1</sup> that the symbol of equality ( $=$ ) in an arithmetic sentence is used to mean is equal to. Another symbol that is the symbol of non-equality ( $\neq$ ) is used to mean is not equal to. When an equal sign ( $=$ ) is replaced by a non-equal sign ( $\neq$ ), the opposite meaning is implied. Thus the following sentence ( $9+6\neq 13$ ) is read: nine plus six is not equal to thirteen. Is it a true sentence? Why or why not?

An important feature about a sentence involving numerals is that it is either true or false<sup>2</sup>, but not both.

A mathematical sentence that is either true or false, but not both is called a closed sentence. To decide whether a closed sentence<sup>3</sup> containing an equal sign ( $=$ ) is true or false, we check to see<sup>4</sup> that both elements, or expressions, of the sentence name the same number. To decide whether a closed sentence containing a non-equal sign ( $\neq$ ) is true or false, we check to see that both elements do not name the same number.

As a matter of fact, there is nothing incorrect or wrong, about writing<sup>5</sup> a false sentence; in fact, in some mathematical proofs it is essential that you write false sentences. The important thing is that you must be able to determine whether arithmetic sentences are true or false.

The following properties of equality will help you to do so.

Reflexive:  $a = a$

Symmetric: If  $a = b$ , then  $b = a$ .

Transitive: If  $a = b$  and  $b = c$ , then  $a = c$ .

The relation of equality between two numbers satisfies these basic axioms for the numbers  $a$ ,  $b$ , and  $c$ .

Using mathematical symbols, we are constantly building a new language. In many respects it is more concise and direct than our everyday language. But if we are going to use this mathematical language correctly we must have a very good understanding of the meaning of each symbol used.

You already know that drawing a short line across the  $=$  sign (equality sign) we change it to  $\neq$  sign (non-equality sign). The non-equality symbol ( $\neq$ ) implies either of the two things, namely: is greater than or is less than. In other words<sup>6</sup>, the sign of non-equality ( $\neq$ ) in  $3+4\neq 6$  merely tells us that the numerals  $3+4$  and  $6$  name different numbers; it does not tell us which numeral names the greater or the lesser of the two numbers.

If we are interested to know which of the two numerals is greater we use the conventional symbols meaning less than ( $<$ ) or greater than ( $>$ ). These are inequality symbols or ordering symbols because they indicate order of numbers. If you want to say that six is less than seven, you will write it in the following way:  $6 < 7$ . If you want to show that twenty is greater than five, you will write  $20 > 5$ .

The signs which express equality or inequality ( $=$ ,  $\neq$ ,  $>$ ,  $<$ ) are called relation symbols because they indicate how two expressions are related.

## LESSON 14

### READING AND TRANSLATING TEXTS

**1. Read the following text and translate it. You can guess the meaning of some of the international words contained in the text. If you are not sure, you may consult the dictionary. Write down your translation.**

#### **M. V. Lomonosov**

We think of M. V. Lomonosov as the father of Russian science. Some of his scientific works were a great contribution to the world (мировую) science. A. S. Pushkin wrote: «Lomonosov was a great man. It was he who founded the first Russian University and he himself (сам) was our first University». He worked a lot in the field of natural science, especially in physics and chemistry. It was Lomonosov who originated the study of geology, geochemistry and physical chemistry in Russia. He also took great interest in history, mathematics and philosophy.

We know Lomonosov as the author of the first Russian book on grammar. He was the first to use Russian language when writing scientific books.

Working in various fields of science he also gave much of his time to practical application of natural sciences. He opened the first chemical laboratory and originated the production of glass (стекло) in Russia.

**2. This is a text about Leonardo da Vinci. Read it and write a few questions about it to ask your class-mates.**

#### **Leonardo da Vinci**

Leonardo da Vinci is a man of legend. He was an artist, who was interested in technology. He was an engineer and a scientist who was a great artist. In his time, in the fifteenth century he was recognized as an artist and as an engineer. He studied geometry, mechanics, hydraulics, botany, anatomy, geology, architecture and astronomy. He had a number of original ideas about the telescope, hydraulic turbines, tanks and aeroplanes and ... computers. It was Leonardo who introduced an important and useful coefficient of 'friction'. It can be said that Leonardo was actually the first engineer with modern understanding (понимание) of elementary principles of machine functioning. In all his studies he was interested not only in theory but in the practical application of his theoretical concepts.

**3. Here is another text. Read and entitle it. Get ready to render the text in class. You might add some information on the subject, if you have any.**

In ancient times people lived in small family groups. People lived in this way because there was little food (пища) around. When a family became so large that there was not enough food for all the members of the family, the group divided.

Some of its members went away looking for (в поисках) new hunting grounds (охотничьи угодья). Families divided over and over again until people lived in every part of the world.

When the separated groups of people lived away from each other for some time they began to talk differently. And so little by little hundreds and thousands of languages came into the world. And now, speech, which at one time was a bridge (мост) between people, often became a wall (стена) separating people.

But it is not only the language barrier that keeps people apart (разделяет). There are also social, political, and economic reasons for it and these reasons are very important.

## LESSON 15

### CURRENTLY BEING TAUGHT OF MATHEMATICS

#### OBJECTIVES AND METHODS OF TEACHING MATHEMATICS

**OBJECTIVES.** At different times and in different cultures and countries, mathematics education has attempted to achieve a variety of different objectives. These objectives have included:

1. The teaching and learning of basic [numeracy](#) skills to all pupils.
2. The teaching of practical mathematics ([arithmetic](#), [elementary algebra](#), plane and solid [geometry](#), [trigonometry](#)) to most pupils, to equip them to follow a trade or craft
3. The teaching of abstract mathematical concepts (such as [set](#) and [function](#)) at an early age
4. The teaching of selected areas of mathematics (such as [Euclidean geometry](#))[https://en.wikipedia.org/wiki/Mathematics\\_education\\_-\\_cite\\_note-6](https://en.wikipedia.org/wiki/Mathematics_education_-_cite_note-6) as an example of an [axiomatic system](#)[https://en.wikipedia.org/wiki/Mathematics\\_education\\_-\\_cite\\_note-7](https://en.wikipedia.org/wiki/Mathematics_education_-_cite_note-7) and a model of [deductive reasoning](#)
5. The teaching of selected areas of mathematics (such as [calculus](#)) as an example of the intellectual achievements of the [modern world](#)
6. The teaching of advanced mathematics to those pupils who wish to follow a career in [Science, Technology, Engineering, and Mathematics \(STEM\)](#) fields.
7. The teaching of [heuristics](#)[https://en.wikipedia.org/wiki/Mathematics\\_education\\_-\\_cite\\_note-8](https://en.wikipedia.org/wiki/Mathematics_education_-_cite_note-8) and other problem-solving strategies to solve non-routine problems.

**METHODS.** The method or methods used in any particular context are largely determined by the objectives that the relevant educational system is trying to achieve. Methods of teaching mathematics include the following:

Classical education: the teaching of mathematics within the [quadrivium](#), part of the classical education curriculum of the [Middle Ages](#), which was typically based on [Euclid's Elements](#) taught as a [paradigm](#) of [deductive reasoning](#).

Games can motivate students to improve skills that are usually learned by rote. In "Number Bingo," players roll 3 dice, then perform basic mathematical operations on those numbers to get a new number, which they cover on the board trying to cover 4 squares in a row. This game was played at a "Discovery Day" organized by [Big Brother Mouse](#) in Laos.

[Computer-based math](#) an approach based around use of mathematical software as the primary tool of computation.

Computer-based mathematics education involving the use of computers to teach mathematics. Mobile applications have also been developed to help students learn mathematics.

Conventional approach: the gradual and systematic guiding through the hierarchy of mathematical notions, ideas and techniques. Starts with arithmetic and is followed by Euclidean geometry and elementary algebra taught concurrently. Requires the instructor to be well informed about elementary mathematics, since didactic and curriculum decisions are often dictated by the logic of the subject rather than pedagogical considerations. Other methods emerge by emphasizing some aspects of this approach.

Discovery math: a constructivist method of teaching (discovery learning) mathematics which centres around problem-based or inquiry-based learning, with the use of open-ended questions and manipulative tools[https://en.wikipedia.org/wiki/Mathematics\\_education\\_-\\_cite\\_note-0-13](https://en.wikipedia.org/wiki/Mathematics_education_-_cite_note-0-13). This type of mathematics education was implemented in various parts of Canada beginning in 2005[https://en.wikipedia.org/wiki/Mathematics\\_education\\_-\\_cite\\_note-14](https://en.wikipedia.org/wiki/Mathematics_education_-_cite_note-14). Discovery-based mathematics is at the forefront of the Canadian Math Wars debate with many criticizing its effectiveness due to declining math scores, in comparison to traditional teaching models that value direct instruction, rote learning, and memorization[https://en.wikipedia.org/wiki/Mathematics\\_education\\_-\\_cite\\_note-0-13](https://en.wikipedia.org/wiki/Mathematics_education_-_cite_note-0-13).

**Exercises:** the reinforcement of mathematical skills by completing large numbers of exercises of a similar type, such as adding vulgar fractions or solving quadratic equations.

Historical method: teaching the development of mathematics within an historical, social and cultural context. Provides more human interest than the conventional approach.

**Mastery:** an approach in which most students are expected to achieve a high level of competence before progressing

**New Math:** a method of teaching mathematics which focuses on abstract concepts such as set theory, functions and bases other than ten. Adopted in the US as a response to the challenge of early Soviet technical superiority in space, it began to be challenged in the late 1960s. One of the most influential critiques of the New Math was Morris Kline's 1973 book Why Johnny Can't Add. The New Math method was the topic of one of Tom Lehrer's most popular parody songs, with his introductory remarks to the song: "...in the new approach, as you know, the important thing is to understand what you're doing, rather than to get the right answer."

**Problem solving:** the cultivation of mathematical ingenuity, creativity and heuristic thinking by setting students open-ended, unusual, and sometimes unsolved problems. The problems can range from simple word problems to problems from international mathematics competitions such as the International Mathematical Olympiad. Problem solving is used as a means

to build new mathematical knowledge, typically by building on students' prior understandings.

**Recreational mathematics**: Mathematical problems that are fun can motivate students to learn mathematics and can increase enjoyment of mathematics. [https://en.wikipedia.org/wiki/Mathematics\\_education\\_-\\_cite\\_note-16](https://en.wikipedia.org/wiki/Mathematics_education_-_cite_note-16)

**Standards-based mathematics**: a vision for pre-college mathematics education, focused on deepening student understanding of mathematical ideas and procedures, and formalized by the **National Council of Teachers of Mathematics** which created the **Principles and Standards for School Mathematics**.

**Relational approach**: Uses class topics to solve everyday problems and relates the topic to current events. This approach focuses on the many uses of mathematics and helps students understand why they need to know it as well as helping them to apply mathematics to real world situations outside of the classroom.

**Rote learning**: the teaching of mathematical results, definitions and concepts by repetition and memorisation typically without meaning or supported by mathematical reasoning. A derisory term is drill and kill. In [traditional education](#), rote learning is used to teach [multiplication tables](#), definitions, formulas, and other aspects of mathematics.

**CONTENT AND AGE LEVELS**. Different levels of mathematics are taught at different ages and in somewhat different sequences in different countries. Sometimes a class may be taught at an earlier age than typical as a special or [honors class](#).

Elementary mathematics in most countries is taught in a similar fashion, though there are differences. Most countries tend to cover fewer topics in greater depth than in the United States.

In most of the U.S., [algebra](#), [geometry](#) and analysis ([pre-calculus](#) and [calculus](#)) are taught as separate courses in different years of high school. Mathematics in most other countries (and in a few U.S. states) is integrated, with topics from all branches of mathematics studied every year. Students in many countries choose an option or pre-defined course of study rather than choosing courses à la carte as in the United States. Students in science-oriented curricula typically study [differential calculus](#) and [trigonometry](#) at age 16–17 and [integral calculus](#), [complex numbers](#), [analytic geometry](#), [exponential](#) and [logarithmic functions](#), and [infinite series](#) in their final year of secondary school. [Probability](#) and [statistics](#) may be taught in secondary education classes.

Science and engineering students in colleges and universities may be required to take [multivariable calculus](#), [differential equations](#), and [linear algebra](#). [Applied mathematics](#) is also used in specific majors; for example, [civil engineers](#) may be required to study [fluid mechanics](#), while "math for computer science" might

include [graph theory](#), [permutation](#), probability, and proofs. Mathematics students would continue to study potentially any area.

## LESSON 16

### EFFECTIVE TEACHING OF MATHEMATICS

**Before you read.**

*Discuss these questions with your partner.*

- 1. How is math being taught differently today?*
- 2. Why is math taught differently in school today?*
- 3. What is wrong with the way we learned it twenty years ago?*

1. 25 years ago math at the elementary level focused on solving problems with the four operations: addition, subtraction, division, multiplication by memorizing the steps. For example, long division was given a formula: Divide, Multiply, Subtract, Bring Down and students dutifully followed that formula. They also did not really understand the concepts behind what they were doing, but if the steps were followed, they arrived at a correct answer. “Word” problems were added in on occasion to give a context to the problems.

Now, we have “Common Core” math which has a significantly different approach. Here, students are to learn the concepts first and the “formula” is last. This approach requires much time developing students understanding: what does it mean to divide a number? Students are asked to show their understanding of concepts with multiple representations - draw a picture, use a number line, use an area model, create arrays. Students must write to explain their math thinking every step of the way, telling what and why with each step of problem solving. They might be doing multiplication in 3rd grade, but they are not taught the standard algorithm until 5th grade! In the meantime, they are solving the problem with those multiple representations and explaining their thinking with writing.

2. It's more accurate to say that math is not taught differently, it's taught badly. As for why, I would say there is no excuse. There may however be an explanation.

Common Core Math is the third chapter in a terrible trifecta: New Math around 1962, Reform Math around 1985 and later, and Common Core around 2008. The common nominator is that the curricula adopt various gimmicks which make elementary arithmetic difficult and unpleasant. The simple realities of basic mathematics are encumbered and indeed covered over by inappropriately advanced



aspects. In short, high school and college math were taught to second graders. It's idiotic and destructive. [The pattern was the same for the last 60 years.](#) Children complained and groaned and couldn't get it. Parents could not understand how to do the homework. Parents and teachers could not communicate with students, or each other. There was a general slowdown of everything mathematical, which undercut anything STEM.

3. The problem with students grasping math started when what was termed “new math” debuted 20 years ago) to help elementary students be able to grasp the complexities of math at an early age. Sets, groups, and other concepts were taught. However, that left little time for division and fractions. Math has been messed up ever since as MSG was attempted next which replaced time needed for learning decimals. In other words, the ideas behind math theory were being introduced but not the actual arithmetic which would build the foundation for these other math ideas.

Effective teaching of mathematics builds fluency with procedures on a foundation of conceptual understanding so that students, over time, become skillful in using procedures flexibly as they solve contextual and mathematical problems.

### **EFFECTIVE MATHEMATICS TEACHING PRACTICES**

1. Establish mathematics goals to focus learning. Effective teaching of mathematics establishes clear goals for the mathematics that students are learning, situates goals within learning progressions, and uses the goals to guide instructional decisions.
2. Implement tasks that promote reasoning and problem solving. Effective teaching of mathematics engages students in solving and discussing tasks that promote mathematical reasoning and problem solving and allow multiple entry points and varied solution strategies.
3. Use and connect mathematical representations. Effective teaching of mathematics engages students in making connections among mathematical representations to deepen understanding of mathematics concepts and procedures and as tools for problem solving.
4. Facilitate meaningful mathematical discourse. Effective teaching of mathematics facilitates discourse among students to build shared understanding of mathematical ideas by analyzing and comparing student approaches and arguments.
5. Pose purposeful questions. Effective teaching of mathematics uses purposeful questions to assess and advance students' reasoning and sense making about important mathematical ideas and relationships.

6. Build procedural fluency from conceptual understanding. Effective teaching of mathematics builds fluency with procedures on a foundation of conceptual understanding so that students, over time, become skillful in using procedures flexibly as they solve contextual and mathematical problems.
7. Support productive struggle in learning mathematics. Effective teaching of mathematics consistently provides students, individually and collectively, with opportunities and supports to engage in productive struggle as they grapple with mathematical ideas and relationships.
8. Elicit and use evidence of student thinking. Effective teaching of mathematics uses evidence of student thinking to assess progress toward mathematical understanding and to adjust instruction continually in ways that support and extend learning.

## LESSON 17

### STUDYING OF FOREIGN EXPERIENCE IN MATHEMATICS

**Before you read.**

*Discuss these questions with your partner.*

- 1. What should I study at high school if I want to study mathematics?**
- 2. Why do we need to study mathematics?**
- 3. What can you do with a degree in mathematics?**
- 4. What is the fear of maths called?**
- 5. Where can a mathematician work?**

1. Maths is not a subject to simply fall into, and will be taught on the assumption that students will have a concrete understanding of basic concepts in maths and applied mathematics before beginning a course.

Universities typically accept only students who have already received maths certificates at school and further education level (A level or international baccalaureate, for example) before applying, with preference given to students who have received high grades in maths and related school subjects such as the traditional sciences (such as chemistry).

2. Math helps us have better problem-solving skills.

Math helps us think analytically and have better reasoning abilities. Analytical thinking refers to the ability to think critically about the world around us. ... Analytical and reasoning skills are important because they help us solve problems and look for solutions.

3. Careers in accountancy and finance. A career path spanning many industries, accountancy offers a range of choices for math degree graduates. ...

- Careers in banking. ...
- Actuarial careers. ...
- Statistician careers. ...
- Careers in academia and research. ...
- Engineering. ...
- Meteorology. ...
- Teaching.

4. The fear of numbers is called arithmophobia. This fear is somewhat unusual in that it encompasses a wide variety of specific phobias, including a generalized fear of all numbers and fear of specific numbers. It is also sometimes called numerophobia. It is classified as an anxiety disorder

5. Most mathematicians work for the federal government or for private scientific and engineering research and development

companies. Mathematicians typically work in comfortable offices. They also may work on teams with engineers, scientists, and other professionals.

### **Math is All around the world**

Whether you like mathematics or are even very good at it, math is around us all the time. When you're at the department store, balancing your checkbook or doing your taxes, mathematics is a necessary skill. It can even improve your sports game.

"There's math all over the place in soccer," Southern New Hampshire University's mathematics department chairwoman Dr. Pamela Cohen told pro soccer player Calen Carr in this [video](#). From the curve - also known as a parabola - of a kicked ball to the rigidity of playing in triangles on the field, math factors into every aspect of the game. What is a math degree to an athlete? A competitive edge on the field.

Many professions, such as engineering, medicine, physics, nurses, computer science and actuarial science, require math proficiency. Virtually all fields benefit from the analytical and problem-solving skills students learn in mathematics. Anyone entering a science, technology, engineering and mathematics (STEM) career is expected to have harnessed basic and advanced math concepts.

Even professions as diverse as chefs or gardeners use math fundamentals when measuring and purchasing supplies. If you are an event planner, math will help you figure per-head costs and inventory. Seamstresses and decorators use math daily, as does anyone who works with measurements and schedules.

## LESSON 18

### FORMATION OF THE ABILITY TO INTERPRET SCIENTIFIC LITERATURE

#### Science & technology translations

**Before you read.**

*Discuss these questions with your group.*

- 1. What do you mean by interpreting?*
- 2. What is an example of an interpretation?*
- 3. What is the process of interpretation?*
- 4. What is interpretation in reading?*
- 5. How do you interpret?*

1. Interpretation. ... Interpretation is the act of explaining, reframing, or otherwise showing your own understanding of something. A person who translates one language into another is called an interpreter because they are explaining what a person is saying to someone who doesn't understand.

2. The definition of an interpretation is an explanation of a view of a person, place, work, thing, etc. An example of interpretation is a feminist perspective on a work of literature. Your Dictionary definition and usage example.

3. The process of interpretation. ... The interpretation has to stand the test of time. The Process of Interpreting. The order is received by our Project Managers, who assess the order (date, place, duration, languages, profession, etc.) and clarify any arising questions.

4. Interpretation: Analyzing What a Text Means. This final level of reading infers an overall meaning. ... We examine what a text does to convey meaning: how patterns of content and language shape the portrayal of the topic and how relationships between those patterns convey underlying meaning.

5. interpret.

- to give or provide the meaning of; explain; explicate; elucidate: to interpret the hidden meaning of a parable.

- to construe or understand in a particular way: to interpret a reply as favorable.

- to bring out the meaning of (a dramatic work, music, etc.) by performance or execution.

#### Science & technology translations

The complexity of scientific and technical translation lies in its very essence, it lies in the necessity to translate highly specific terminology. Apart from understanding the terminology itself, the translator must understand the context

where it is used for sometimes it is exactly the context that the use of a particular term depends on.

Additionally, in terms of translating scientific and technical literature, it is necessary to mention the strictly developed phraseology adopted in this field. This phraseology is used in order to ensure that professionals immediately notice the necessary details (information or a guide to an action). Any deviations from the language adopted among specialists in the field are immediately noticed, resulting in a sense of unprofessionalism on the translator's part. "Well-established documentation language" refers to the use of the same words and expressions, not only in terminology but also in the spheres of general technical and everyday language, a certain type of semi-professional jargon. Replacing these expressions with synonyms is unacceptable.

**POLYGLOT** translation. In fact, this type of translation is quite challenging and it not only requires a high level of proficiency in the target language, but also extensive knowledge of specific topics. Obviously, a person who does not understand what the source text is about can not fully convey the meaning regardless of how well he knows the target language.

POLYGLOT translation company possesses:

- the necessary skills and knowledge in scientific and technical translation;
- a large number of translators who specialise in various fields of science and technology;
- extensive experience in translating scientific and technical literature;
- a quality control system which enables the completion of all works on time and of high quality.

When placing an order of a highly specific text for translation, please bear in mind that the deadlines will be longer in most cases.

This is due to a limited number of translators who are capable of executing a full translation, considering all the peculiarities of terminology and the style of the text.

## LESSON 19

### PREPARATION OF PRESENTATIONS ON MATHEMATICS

**Before you read.**

*Discuss these questions with your group.*

- 1. How do you prepare notes for a presentation?*
- 2. How do you prepare a presentation material?*
- 3. How do you prepare an effective presentation?*

#### 1. Steps

1. Write your speech. Before you can create effective notes, you must make your speech as good as possible. ...
2. Read the speech aloud. Sit down in a quiet place and read the speech to yourself. ...
3. Edit the speech. ...
4. Get help from people you trust. ...
5. Break down your speech into keywords.

#### 2. Steps

1. Do your homework. ...
2. Give yourself ample time to prepare, and don't wait until the last minute. ...
3. Focus on the essentials first. ...
4. Consider how much printed material you want your audience to have, and when you want them to have it. ...
5. Organize the information for your presentation materials.
6. Design your presentation materials.

#### 3. **How can you make a good presentation even more effective?**

1. Show your Passion and Connect with your Audience. ...
2. Focus on your Audience's Needs. ...
3. Keep it Simple: Concentrate on your Core Message. ...
4. Smile and Make Eye Contact with your Audience. ...
5. Start Strongly. ...
6. Remember the 10-20-30 Rule for Slideshows. ...
7. Tell Stories.

### **Steps in Preparing a Presentation**

#### **Planning Your Presentation**

Preparing a presentation can be an overwhelming experience if you allow it to be one. The strategies and steps below are provided to help you break down what you might view as a large job into smaller, more manageable tasks.

### **Step 1: Analyze your audience**

The first step in preparing a presentation is to learn more about the audience to whom you'll be speaking. It's a good idea to obtain some information on the backgrounds, values, and interests of your audience so that you understand what the audience members might expect from your presentation.

### **Step 2: Select a topic**

Next, if possible select a topic that is of interest to the audience and to you. It will be much easier to deliver a presentation that the audience finds relevant, and more enjoyable to research a topic that is of interest to you.

### **Step 3: Define the objective of the presentation**

Once you have selected a topic, write the objective of the presentation in a single concise statement. The objective needs to specify exactly what you want your audience to learn from your presentation. Base the objective and the level of the content on the amount of time you have for the presentation and the background knowledge of the audience. Use this statement to help keep you focused as you research and develop the presentation.

### **Preparing the Content of Your Presentation**

#### **Step 4: Prepare the body of the presentation**

After defining the objective of your presentation, determine how much information you can present in the amount of time allowed. Also, use your knowledge about the audience to prepare a presentation with the right level of detail. You don't want to plan a presentation that is too basic or too advanced.

The body of the presentation is where you present your ideas. To present your ideas convincingly, you will need to illustrate and support them. Strategies to help you do this include the following:

1. Present data and facts
2. Read quotes from experts
3. Relate personal experiences
4. Provide vivid descriptions

And remember, as you plan the body of your presentation it's important to provide variety. Listeners may quickly become bored by lots of facts or they may tire of hearing story after story.

#### **Step 5: Prepare the introduction and conclusion**

Once you've prepared the body of the presentation, decide how you will begin and end the talk. Make sure the introduction captures the attention of your audience and the conclusion summarizes and reiterates your important points. In other words, "Tell them what you're going to tell them. Tell them. Then, tell them what you told them."



During the opening of your presentation, it's important to attract the audience's attention and build their interest. If you don't, listeners will turn their attention elsewhere and you'll have a difficult time getting it back. Strategies that you can use include the following:

Make the introduction relevant to the listeners' goals, values, and needs

1. Ask questions to stimulate thinking
2. Share a personal experience
3. Begin with a joke or humorous story
4. Project a cartoon or colorful visual
5. Make a stimulating or inspirational statement
6. Give a unique demonstration

During the opening you want to clearly present your topic and the purpose of your presentation. Clearly articulating the topic and purpose will help the listeners focus on and easily follow your main ideas.

During the conclusion of your presentation, reinforce the main ideas you communicated. Remember that listeners won't remember your entire presentation, only the main ideas. By reinforcing and reviewing the main ideas, you help the audience remember them.

## **Practicing and Delivering**

### **Step 6: Practice delivering the presentation**

Most people spend hours preparing a presentation but very little time practicing it. When you practice your presentation, you can reduce the number of times you utter words and phrases like, "um," "well," and "you know." These habits can easily diminish a speaker's credibility. You can also fine-tune your content to be sure you make your most important points in the time allotted.

In addition to planning the content of your presentation, you need to give advanced thought to how you want to deliver it. Do you want to commit your presentation to memory, use cards to guide you, or read from a script? Or, you might want to use a combination of methods. To help you decide, read the advantages and disadvantages of the four delivery methods described below.

## LESSON 20

### FORMATION OF SKILLS OF PRESENTATION

*Questions for discussion.*

- 1. What are the skills of presentation?*
- 2. How do you develop good presentation skills?*
- 3. What are the different ways to deliver a presentation?*

#### **22 Presentation Skills**

Why do some people almost always give first-rate presentations while others [seem to struggle](#)?

The main reason is that "presentation skills" is plural. It takes dozens of skills to be a good public speaker. These include:

##### **1. Verbal Communication**

The ability to communicate in a clear, concise and concrete way in front of an audience is the key skill required of public speakers.

##### **2. Delivery**

Delivery is how you connect with your audience. It includes techniques such as body language and pauses that give your words punch.

##### **3. Leadership**

The ability to establish yourself as the leader of your audience.

##### **4. Selling / Persuasion**

A presentation is all about selling your ideas using persuasion techniques.

##### **5. Humor**

Lighthearted presentations are almost always best. You don't have to be a stand-up comedian but the ability to deliver light humor works wonders on an audience.

##### **6. Storytelling**

The ability to tell a gripping story.

##### **7. Written and Visual Communication**

Your visual elements such as slides should be brief, clear and visually effective.

##### **8. Self Awareness**

Know your strengths and weaknesses and [lead with your strengths](#).

##### **9. Emotion Management**

Presentations can be emotional experiences. For one thing, 3 out of 4 people are have a [fear of public speaking](#). The ability to control emotions is also important to handle unexpected events such as rejection (e.g. a heckler).

##### **10. Adaptability**

No matter how much you prepare it's possible for your presentation to go off in an unexpected direction — especially if you involve your audience. The ability to adapt is an important presentation survival skill.

### **11. Listening**

Active listening is key to leading audience participation.

### **12. Facilitating**

The ability to lead workshops, conversations and issue resolution activities.

### **13. Networking Skills**

If you're speaking at a conference it's important to network before your presentation. Incorporate what you learn from networking into your talk.

### **14. Interpersonal Relationships**

The ability to establish rapport with an audience is closely related to your ability to establish and manage relationships with people. Legendary orators (e.g. Bill Clinton) have the ability to make each member of the audience feel as if they are speaking directly to them.

### **15. Dealing with Difficult Personalities**

The ability to deal with audience participation challenges.

### **16. Stress Management**

Many people find presentations to be a stressful experience. Even if you're comfortable with presentations, a stressful experience can always pop up when you're in front of an audience. The ability to manage stress and deliver under pressure is important.

### **17. Taking Criticism / Resilience**

The ability to bounce back from criticism and failure is common amongst accomplished public speakers.

### **18. Problem Solving**

The best presentations solve problems for the audience. You may also be asked to solve a problem as part of audience participation.

### **19. Research**

The ability to find statistics, facts, examples and stories that support your message.

### **20. Organization and Time Management**

Giving your presentation an organized flow that fits into time constraints.

### **21. Gestures / Using 3d Space**

Physical communication including effective use of the stage and gestures.

### **22. Showmanship**

Good public speakers do more than inform — they entertain.

## **20 Ways to Improve Your Presentation Skills**

### **1. Practice!**

Naturally, you'll want to rehearse your presentation multiple times. While it can be difficult for those with packed schedules to spare time to practice, it's

essential if you want to deliver a rousing presentation. I'm famous around the office for staying up late the night before a big presentation, practicing over and over. If you really want to sound great, write out your speech rather than taking chances winging it – if you get nervous about speaking, a script is your best friend.

## **2. Transform Nervous Energy Into Enthusiasm.**

It may sound strange, but I'll often down an energy drink and blast hip-hop music in my earphones before presenting. Why? It pumps me up and helps me turn jitters into focused enthusiasm. Studies have shown that an enthusiastic speech can win out over an eloquent one, and since I'm not exactly the Winston Churchill of presenters, I make sure that I'm as enthusiastic and energetic as possible before going on stage. Of course, individuals respond differently to caffeine overload, so know your own body before guzzling those monster energy drinks.

## **3. Attend Other Presentations.**

If you're giving a talk as part of a conference, try to attend some of the earlier talks by other presenters to scope out their presentation skills and get some context. This shows respect for your fellow presenters while also giving you a chance to feel out the audience. What's the mood of the crowd? Are folks in the mood to laugh or are they a bit more stiff? Are the presentations more strategic or tactical in nature? Another speaker may also say something that you can play off of later in your own presentation.

## **4. Arrive Early.**

It's always best to allow yourself plenty of time to settle in before your talk. Extra time ensures you won't be late (even if Google Maps shuts down) and gives you plenty of time to get adapted to your presentation space.

## **5. Adjust to Your Surroundings.**

The more adjusted to your environment you are, the more comfortable you'll feel. Make sure to spend some in the room where you will be delivering your presentation. If possible, practice with the microphone and lighting, make sure you understand the seating and be aware of any distractions potentially posed by the venue (e.g., a noisy road outside).

## **6. Meet and Greet.**

Do your best to chat with people before your presentation. Talking with audiences makes you seem more likeable and approachable. Ask event attendees questions and take in their responses. They may even give you some inspiration to weave into your talk.

## **7. Use Positive Visualization.**

Whether or not you're a Zen master, know that plenty of studies have proven the effectiveness of positive visualization. When we imagine a positive outcome to a scenario in our mind, it's more likely to play out the way we envision.

## **8. Remember That Most Audiences Are Sympathetic.**

One of the hardest fears to shake when speaking in public is that the audience is secretly waiting to laugh at your missteps or mistakes. Fortunately, this isn't the case in the vast majority of presentations.

The audience wants to see you succeed. In fact, many people have a fear of public speaking, so even if the audience seems indifferent, the chances are pretty good that most people listening to your presentation can relate to how nerve-racking it can be. If you start to feel nervous, remind yourself that the audience gets it, and actually wants to see you nail it.

### **9. Take Deep Breaths.**

The go-to advice for jitters has truth to it. When we're nervous, our muscles tighten--you may even catch yourself holding your breath. Instead, go ahead and take those deep breaths to get oxygen to your brain and relax your body.

### **10. Smile.**

Smiling increases endorphins, replacing anxiety with calm and making you feel good about your presentation. Smiling also exhibits confidence and enthusiasm to the crowd. And this tip works even if you're [doing a webinar](#) and people can't see you.

### **11. Exercise.**

Exercise earlier in the day prior to your presentation to boost endorphins, which will help alleviate anxiety. Better pre-register for that Zumba class!

### **12. Work on Your Pauses.**

When you're nervous, it's easy to speed up your presentation and end up talking too fast, which in turn causes you to run out of breath, get more nervous, and panic! Ahh!

Don't be afraid to slow down and use pauses in your speech. Pausing can be used to emphasize certain points and to help your talk feel more conversational. If you feel yourself losing control of your pacing, just take a nice pause and keep cool.

### **13. Don't Try to Cover Too Much Material.**

Yes, your presentations should be full of useful, insightful, and actionable information, but that doesn't mean you should try to condense a vast and complex topic into a 10-minute presentation.

Knowing what to include, and what to leave out, is crucial to the success of a good presentation. I'm not suggesting you skimp when it comes to data or including useful slides (some of my webinars have featured 80+ slides), but I am advocating for a rigorous editing process. If it feels too off-topic, or is only marginally relevant to your main points, leave it out. You can always use the excess material in another presentation.

### **14. Actively Engage the Audience.**

People love to talk and make their opinions heard, but the nature of presentations can often seem like a one-sided proposition. It doesn't have to be, though.

Asking the audience what they think, inviting questions, and other means of welcoming audience participation can boost engagement and make attendees feel like a part of a conversation. It also makes you, the presenter, seem much more relatable. Consider starting with a poll or [survey](#). Don't be put off by unexpected

questions – instead, see them as an opportunity to give your audience what they want.

### **15. Be Entertaining.**

Even if your presentation is packed with useful information, if your delivery bombs, so will your session.

### **16. Admit You Don't Have All the Answers.**

Very few presenters are willing to publicly concede that they don't actually know everything because they feel it undermines their authority. However, since we all know that nobody can ever know everything about a given topic, admitting so in a presentation can actually improve your credibility.

### **17. Use a Power Stance.**

Practicing confident body language is another way to boost your pre-presentation jitters. When your body is physically demonstrating confidence, your mind will follow suit. While you don't want to be jutting out your chest in an alpha gorilla pose all afternoon (somebody enjoyed Dawn of the Planet of the Apes a bit too much), studies have shown that using power stances a few minutes before giving a talk (or heading to a big interview) creates a lasting sense of confidence and assurance. Whatever you do, don't sit--sitting is passive. Standing or walking a bit will help you harness those stomach bats (isn't that more appropriate than butterflies?). Before you go on stage, strike your best Power Ranger stance and hold your head high!

### **18. Drink Water.**

Dry mouth is a common result of anxiety. Prevent cottonmouth blues by staying hydrated and drinking plenty of water before your talk (just don't forget to hit the bathroom before starting). Keep a bottle of water at arm's reach while presenting in case you get dry mouth while chatting up a storm. It also provides a solid object to hurl at potential hecklers. (That'll show 'em.)

### **19. Join Toastmasters.**

[Toastmaster clubs](#) are groups across the country (and the world) dedicated to helping members improve their presentation skills. Groups get together during lunch or after work to take turns delivering short talks on a chosen topic. The more you present, the better you'll be, so consider joining a Toastmaster club to become a top-notch orator. Just don't forget, it's BYOB (Bring Your Own Bread).

### **20. Don't Fight the Fear.**

Accept your fear rather than trying to fight it. Getting yourself worked up by wondering if people will notice your nervousness will only intensify your anxiety. Remember, those jitters aren't all bad – harness that nervous energy and transform it into positive enthusiasm and you'll be golden. We salute you, O Captain! My Captain!

## LESSON 21

### PREPARATION OF AN ARTICLE AND ANNOTATION FOR THE SPECIALTY

*Questions for discussion.*

- 1. How do you prepare an article?*
- 2. What must you always include when formatting an article?*

#### **A Step-by-Step Guide to Writing a Compelling Article Introduction**

1. Master the opening line. To have a strong introduction, you need to open with a strong first sentence. ...
2. Have something unique to say. ...
3. Keep it simple. ...
4. Speak directly to the reader. ...
5. Explain what the article is about. ...
6. Explain the importance of the article.

#### **How to write your article**

On this page you'll find guidance and tips for first-time and experienced authors on writing style and how to structure an article. We've also included some [article templates](#) to help you structure and format your manuscript.

##### **Article types**

Articles commonly fall into one of three main categories: Full papers, Communications and Reviews. However, each journal will have further, specific article types, so you should always refer to a [journal's specific author guidelines](#) while preparing your manuscript.

Full papers are original, unpublished primary research. Extensions of work that has been published previously in short form such as a **Communication are usually acceptable.**

Communications must contain original and highly significant work whose high novelty warrants rapid publication. Some journals have page limits for Communications.

Reviews may be an authoritative overview of a field, a comprehensive literature reviews, or tutorial-style reference materials. Reviews are usually invited by the editor, but a topic may be proposed by an author via the editorial office.

##### **Format & layout of your article**

Keep your writing clear and concise, avoiding repetition or embellishment. All submissions must be in English. We permit standard English and American spelling in our journals, but please use one or the other consistently within the article itself. You are welcome to use common or standard abbreviations; if your abbreviations are non-standard, please include a definition the first time you use

them.

All articles accepted for publication in our journals are edited and typeset to our house style by professional editors: the manuscript will be formatted for you.

If you would like professional guidance on improving the standard and style of your writing, before submitting your article, we offer a specialist [language editing service](#).

This section describes the content to be included in your article. Note that headings and subheadings are not permitted in articles submitted to ChemComm, although they are permitted in Communications submitted to other journals.

### **Experimental data**

On submission of a manuscript authors should provide all data required to understand and verify the research presented in the article. The Royal Society of Chemistry believes that where possible all data associated with the research in a manuscript should be freely available in an accessible and usable format, enabling other researchers to replicate and build on that research.

### **Preparing electronic supplementary information (ESI)**

You can include ESI with your article to enhance and increase the impact of your work, for example by including 3D molecular models and movies. Authors can also improve the readability of their articles by placing appropriate material in the ESI, such as repetitive experimental details or bulky data. All information published as ESI is fully archived and permanently linked to the article using CrossMark.

When preparing your ESI data files, you should keep in mind the following points:

Supplementary data is peer-reviewed and should therefore be included with the original submission.

ESI files are published 'as is'; editorial staff will not edit the data for style or content.

Data are useful only if readers can access it; use common, widely known file formats.

Large files may prove difficult for users to download and access.

References cited in the ESI should be included in a separate references list within the ESI document.

### **Multimedia files & video abstracts**

We welcome the use of multimedia files (including videos and animations) as these can be an excellent medium to present elements of your work. Any videos of general interest may be shared with the wider community through social media. Video abstracts offer an exciting opportunity to highlight the importance of a paper to the reader in a new and engaging way. Please notify the editorial team if you prefer for your video(s) not to be promoted in this way.

If you submit a multimedia file alongside your paper, please refer to it within your paper to draw it to the reader's attention. Please also provide a short descriptive title for the video.

### **Content**



Start by introducing the conclusion of your article and concentrate on the main results.

Focus the video on why the article is relevant to the reader.

Introduce relevant co-workers and mix in images/footage of your laboratory, experiment and equipment to make it more engaging.

Videos should be approximately two-three minutes in length (no longer than four minutes).

On screen text should be used sparingly and be large enough to read clearly.

### **Technical**

Resolution/aspect ratio: 720p, 1080p or 4k.

Frames per second: 25 to 30.

Formats accepted: MPG, MOV, AVI, WMV, MP4.

### **Notes**

You should ensure that you have copyright permission for any images, stock footage or background music used.

## LESSON 22

### *Questions for discussion.*

- 1. What is an example of annotation?*
- 2. How do you annotate?*
- 3. How do you annotate a piece of writing?*
- 4. What are annotations in a research paper?*

Writing Annotations. An annotation is a brief note following each citation listed on an annotated bibliography. The goal is to briefly summarize the source and/or explain why it is important for a topic. They are typically a single concise paragraph, but might be longer if you are summarizing and evaluating.

Annotations can be written in a variety of different ways and it's important to consider the style you are going to use. Are you simply summarizing the sources, or evaluating them? How does the source influence your understanding of the topic? You can follow any style you want if you are writing for your own personal research process, but consult with your professor if this is an assignment for a class.

### **Part 2 Annotating Keywords, Phrases, and Sections**

1. Remove distractions. Go to a quiet, isolated spot at school, like the library or a study hall. ...
2. Read the book slowly and carefully. ...
3. Underline key phrases. ...
4. Circle or box key words. ...
5. Bracket key sections. ...
6. Make a list of words you don't recognize.

### **Steps**

1. Recognize why you should annotate. ...
2. Mark down the source information. ...
3. Understand your reading goals. ...
4. Annotate as you read the article. ...
5. Ask questions as you go through the text. ...
6. Focus on themes and connections to your class topics. ...
7. Circle words or concepts that you don't understand.

An annotated bibliography is a list of citations to books, articles, and documents. Each citation is followed by a brief (usually about 150 words) descriptive and evaluative paragraph, the annotation. The purpose of the annotation is to inform the reader of the relevance, accuracy, and quality of the sources cited.

## **МУСТАҚИЛ ТАЪЛИМ МАШҒУЛОТЛАРИ**

### **Мустақил таълимни ташкил этишнинг шакли ва мазмуни**

Чет тили фанидан мустақил ишларининг мақсади - талабаларнинг касбий коммуникатив фаолиятини шакллантириш ва ривожлантириш, уларнинг ижодий фаолиятини ўстириш, ва чет тили устида мустақил ишлай олиш малака ва кўникмаларини ҳосил қилиш ва ривожлантиришдан иборат. Ушбу умумий мақсадга эришиш учун қуйидаги бир неча вазифаларни бажариш назарда тутилади:

- талабаларнинг тил тайёргарлик сифатини ошириб бориш, тил ва мутахассислик бўйича адабиётлар устида ишлай олиш кўникмаларини шакллантириш ва ривожлантириш;
- ўз касбий билим ва малакаларини кейинчалик мустақил тўлдириб ва янгилаб туриш эҳтиёжларини яратиш ва сақлаб қолиш, чет тили бўйича яратилган малака ва кўникмаларни ўстириб, ривожлантириб бориш;
- талаба бажариши керак бўлган ишларни тўғри ташкил қилиш, келиб чиқадиган қийинчиликларни олдиндан била олиш, ҳис этиш ва уларни бартараф қилиш йўллари топа олиш.

### **VII-семестр 16 соат**

<b>№</b>	<b>Theme</b>	<b>Hours</b>
1.	Profession skills.	4
2.	Life and creativity of famous people in the studied science.	6
3.	News of the learning science.	6

### **VIII-семестр 16 соат**

<b>№</b>	<b>Theme</b>	<b>Hours</b>
1.	Working on the text "Professionality and speciality".	8
2.	Actual problems on speciality.	8

### **Тавсия этилаётган мустақил ишларнинг мазмуни**

Талабаларнинг мустақил ишлари нутқ фаолиятининг қуйидаги турлари бўйича ташкил қилинади.

**Ўқиш:** (танишиб чиқиш, синчиклаб, қараб чиқиш), ёзув, тинглаб тушуниш ва гапириш;

**Тинглаб тушуниш:** ҳажми турлича бўлган аудио- ва видео матнларни тинглаб тушуниш, саволларга жавоб бериш, гапириб бериш, аннотация ёза олиш;

**Гапириш:** талабаларнинг диалогик ва монологик нутқлари бўйича мустақил ишлари аудиторияда ўргатилган матнлар, ўқув материаллари асосида ташкил қилинади. Гапириш бўйича мустақил иш сифатида мавзу асосида маълумот

тайёрлаш, матн мазмунини гапириб бериш, ўрганилган лексик материаллар асосида ҳикоялар тузиш, берилган муаммоли масала ва вазиятларни муҳокама қилиш каби топшириқлар бериш мумкин. Гапириш кўникмаларини ривожлантириб бориш учун мультимедиа дастурларини ва он-лайн технологияларини қўллашга асосий эътибор қаратилади;

**Ўқиш:** талаба ўрганаётган соҳасига оид адабиётлар билан танишиб чиқиши ва ўзи учун қизиқарли ва керакли бўлган ахборотни тушуниши, публицистик, илмий-оммабоп ижтимоий-сиёсий адабиётларни ўқиши ва керакли ахборотни олиши лозим. Машғулотларда юқорида айтилган малака ва кўникмаларни шакллантириш ва ўстириш жуда мураккаб бўлганлиги учун уларни мустақил иш жараёнида синчиклаб, кўз югуртириб, қараб чиқиб ўқиш турлари орқали ташкил қилинади. Ушбу ўқиш турларини назорат қилиш-матнни бутунлай таржима қилиш ёки унинг танлаб олинган қисмларини таржима қилиш билан амалга оширилади.

Танишиб чиқиб ўқиш мустақил иш тури сифатида уйда ўқиш шаклида олиб борилади. Ўқишнинг бу тури учун аутентик ёки адаптация қилинган адабий, илмий-оммабоп адабиёт танлаб олинади. Текшириш шакллари: ўқиганини мазмунини тушунганлиги бўйича савол-жавоб ишлари, ажратиб олинган масалалар бўйича ахборот олиш, бахс-мунозаралар ўтказиш, ахборотга режа тузиш ва ҳ.к.

Қараб чиқиб, кидириб топиш учун ўқиш. Ўқишнинг бу турида оммавий-сиёсий, публицистик матнлар, газета ва журнал материаллари берилади ва ҳар бир дарсда қисқача ахборот олинади. Талаба битта газета мақолалари асосида ахборот беради ёки мавзу бўйича бир қанча газета ва журналлардан ахборот тайёрлайди.

Ёзув. Ёзув бўйича мустақил иш ўз ичига ўрганилаётган тилда фикрни баён қила олиш ишларини олади. Бунда мустақил иш мазмунига қуйидагилар киради:

- аннотация, реферат, резюмелар туза олиш;
- оғзаки равишда нутқ ҳосил қилиш учун режа ёки тезис тузиш;
- турли хатлар, табрикнома, таклифлар, иш юзасидан хатлар туза олиш;
- ўқишга ва ишга қабул юзасидан аризалар ёза олиш;
- соҳага оид турли ҳужжатларни тўлдириш;
- баён, иншо, эсселар ёза олиш; касби бўйича иш юритиш ишларини (ёзувларини) олиб бориш.

Ўқиб таржима қилинган материаллар курс ишлари ва рефератларда қўлланилади.

## **САМООБРАЗОВАНИЕ**

### **VII-семестр 16 часов**

<b>№</b>	<b>Theme</b>	<b>Hours</b>
1.	Profession skills.	4
2.	Life and creativity of famous people in the studied science.	6
3.	News of the learning science.	6

### **VIII-семестр 16 часов**

<b>№</b>	<b>Theme</b>	<b>Hours</b>
1.	Working on the text “Professionalism and speciality”.	8
2.	Actual problems on speciality.	8

Самообразование с использованием научной и справочной литературы позволяет формировать у студентов навыки профессионального прочтения текста, вырабатывает умение анализировать различные аспекты структуры и образной системы произведения.

В процессе выполнения самообразования вырабатываются практические умения и навыки: овладеть речью, критическим мышлением, творческими способностями, написанием.

Рекомендуемые темы самостоятельной работы и самообразования должны быть разработаны в соответствии с темами практических занятий, направлены на выработку умения анализировать и исследовать языковые факты.

Предлагаемые формы работы – реферирование и подготовка слайд-презентаций.

# ГЛОССАРИЙ

English	Ўзбек	Русский
Central similarity symmetry	марказий ўхшашлик симметрия	симметрия центрального подобия
determine	аниқламоқ	определять
*-Algebra	*-алгебра	*-алгебра
2-order cone	2-тартибли конус	конус 2-порядка
2-order silindr	2-тартибли цилиндр	цилиндр 2-порядка
a complement of an event	тескари ходиса	отрицание событий
a fraction	каср	дробь
a intersection of events	ходисалар кўпайтмаси	произведение событий
a proper subset	Хос қисм тўплам	собственное подмножество
A sequence of numbers	Сонлар кетма-кетлиги	Последовательность чисел
a set of values	қийматлар тўплами	множество значений (случайной величины)
a subset	Қисм тўплам	подмножество
A theorem about two police officers	Икки миршаб ҳақидаги теорема	Теорема о двух полицейских
a union of events	ходисалар йиғиндиси	сумма событий
abelian group	Абель группа	Абелева группа
about	нисбатан	приблизительно
abbreviate	қисқартириш	сокращать
absolute convergence	Абсолют яқинлашиш	абсолютная сходимость
absolute value	Абсолют қиймат	абсолютная величина
Absorbing set	ютувчи тўплам	поглашающее множество
abstract mathematics	Соф математика	чистая математика
acceleration	тезланиш	ускорение
accelerator	Тезлаштиргич	ускоритель
accidental	тасодифий	случайный
ACNF	МКНФ	СКНФ

action of group to a set	<b>Группанинг тупламга таъсири</b>	Действие группы на множестве
actual	<b>ҳақиқий</b>	действительный
acute angle	<b>Ўткир бурчак</b>	острый угол
addend / item;	<b>Қўшилувчи</b>	слагаемое
addition	<b>Қўшиш</b>	сложение
additive group	<b>кушимча группа</b>	аддитивная группа
adjacent angle	<b>Қўшни бурчак</b>	смежный угол
adjacent class	<b>Кушни синф</b>	Смежный класс
Adjoint	<b>қўшма</b>	сопряжение
ADNF	<b>МДНФ</b>	СДНФ
Affine geometry	<b>Аффин геометрия</b>	аффинная геометрия
Affine map	<b>Аффин мослик</b>	аффинное преобразование
Affine perspective map	<b>Аффин перспектив мослик</b>	аффинно-перспективное преобразование
again	<b>бундан ташқари</b>	кроме того
Algebra	<b>алгебра</b>	алгебра
algebraic	<b>алгебраик</b>	алгебраический
algebraic complement of matrix	<b>Матрицанинг алгебраик тўлдирувчиси</b>	алгебраическое дополнение матрицы
algebraic extension	<b>Алгебраик кенгайтма</b>	алгебраическое расширение
algebraically closed field	<b>Алгебраик епик майдон</b>	Алгебраически замкнутое поле
Almost periodic function	<b>деярли даврий функция</b>	почти периодическая функция
amplitude	<b>амплитуда</b>	амплитуда
An isolated singular point of the function	<b>Функциянинг яккаланган махсус нуқтаси</b>	Изолированная особая точка функция
analysis	<b>таҳлил</b>	анализ
analytic function	<b>аналитик функция</b>	аналитическая функция
Annihilator	<b>аннулятор</b>	аннулятор
Antiderivatives	<b>Бошланғич функция</b>	Первообразный
Antisymmetric set	<b>антисимметрик тўплам</b>	антисимметрическое множество
application	<b>Қўллаш</b>	применение
applied	<b>Амалий</b>	прикладной

applied mathematiks	<b>Амалий математика</b>	прикладная математика
Appolo circles	<b>аполлоний айланалари</b>	окружности апполония
Approximate identity,	<b>такрибий мос келтириш</b>	приближенная единица
arbitrary	<b>ихтиёрий</b>	произвольный
arccosecant	<b>арккосеканс</b>	арккосеканс
Archimed's axiom	<b>Архимед аксиомаси</b>	Аксиома Архимеда
arcsecant	<b>арксеканс</b>	арксеканс
Areas of plane figures	<b>Текис шаклнинг юзи</b>	Площадь плоский фигуры
Arens-Royden theorem	<b>Аронс-Ройден теоремаси</b>	Теорема Аренса-Ройдена
arm	<b>томон, тараф</b>	сторона
Ascoli's theorem	<b>Асколи теоремаси</b>	Теорема Асколи
asimptota	<b>асймпототис лине</b>	асимптота
assertion	<b>тасдиқ</b>	утверждение
Association (sets)	<b>бирлашма</b>	объединение (множеств)
associative	<b>ассоциатив</b>	ассоциативный
associative law	<b>Ассоциатив конуни</b>	Закон ассоциативности
associativity	<b>ассоциативлик</b>	ассоциативность
assume	<b>фараз қилмоқ</b>	предполагать
asymmetry	<b>асимметрия</b>	асимметрия
attention	<b>диққат қилмоқ</b>	внимание
attractor	<b>аттрактор</b>	аттрактор
automorphism	<b>ўзини-ўзига</b>	себе
auxiliary	<b>ёрдамчи</b>	вспомогательный
A-valued function	<b>А-қийматли функция</b>	А-значная функция
axiom of choice	<b>Танлаш аксиомаси</b>	аксиома выбора
Axiomatic theory	<b>Аксиоматик назария</b>	Аксиоматическая теория



# **ИЛОВАЛАР**

## **5.1. ФАН ДАСТУРИ**

**ЎЗБЕКИСТОН РЕСПУБЛИКАСИ  
ОЛИЙ ВА ЎРТА МАХСУС ТАЪЛИМ ВАЗИРЛИГИ  
АНДИЖОН ДАВЛАТ УНИВЕРСИТЕТИ**

Рўйхатга олинди.

№ \_\_\_\_\_

2019 й. " \_\_\_\_ " \_\_\_\_\_



(барча таълим йўналишлари учун)

**Билим соҳаси:** 100000 - Гуманитар соҳа  
300000 - Ишлаб чиқариш-техник соҳа

**Таълим соҳаси:** 110000 - Педагогика  
130000 - Математика  
140000 - Табiiй фанлар  
320000 - Ишлаб чиқариш технологиялари

**Таълим йўналишлари:** 5140200 –Касб таълим (ИАТ)  
5130100 –Математика  
5140200 –Физика  
5140100 –Биология (турлари бўйича)  
5140500 –Кимё  
5140600 –География  
5140900 - Экология  
5140300- Механика  
5321000 – Озик-овкат технология (ёғ-мой махсулотлари)  
5110700 –Информатика ўқитиш методикаси  
5110200- Физика ва астрoномия ўқитиш методикаси

Анджон – 2019

Фаннинг ўқув дастури Андижон давлат университети Кенгаши қарорига мувофиқ, 2019 йил августдаги -сонли буйруғи билан тасдиқланган.

Фаннинг ўқув дастури Андижон давлат университети Кенгашининг 2019 йил 31 августдаги 1 сонли баёни билан маъқулланган.

Фан дастури Андижон давлат университетида ишлаб чиқилди.

Тузувчилар:

Д.Рустамов – АндДУ, Чет тиллари факультети, Факультетлараро чет тиллар (аниқ ва табиий фанлар) кафедраси мудири, ф.ф.ф.д.

Э.Курбанов – АндДУ, Чет тиллари факультети, Факультетлараро чет тиллар (аниқ ва табиий фанлар) кафедраси ўқитувчиси

Такризчилар:

С.Солижонов – АндДУ, Чет тиллар факультети, Инглиз тили фонетикаси кафедраси мудири, ф.ф.н. доцент

М. Абдувалиев - АндДУ, Чет тиллар факультети Инглизи тили ва адабиёти кафедраси доценти, ф.ф.н., доцент

Фаннинг ўқув дастури Андижон давлат университети Чет тиллар факультети кенгашининг 2019 йил августдаги 1-сон мажлисида кўриб чиқилган ва тасдиқланган.

### КИРИШ

Мазкур дастур Ўзбекистон Республикаси Президентининг 2012 йил 10 декабрдаги "Чет тилларни ўрганиш тизимини янада такомиллаштириш чора-тадбирлари тўғрисида"ги ПҚ-1875-сонли, Ўзбекистон Республикаси Вазирлар Маҳкамасининг 2013 йил 8 майдаги "Чет тиллар бўйича таълимнинг барча босқичлари битирувчиларининг тайёргарлик даражасига қўйиладиган талаблар" тўғрисидаги 124-сонли қарорлари ҳамда Европа Кенгашининг "Чет тилини эгаллаш умумевропа компетенциялари: ўрганиш, ўқитиш ва баҳолаш" тўғрисидаги умумэътироф этилган халқаро меъёрлари (CEFR – Common European Framework of Reference) га мувофиқ қайта ишлаб чиқилди.

Вазирлар Маҳкамасининг "Чет тиллар бўйича таълимнинг барча босқичлари битирувчиларининг тайёргарлик даражасига қўйиладиган талаблар" га кўра олий таълим муассасаларининг ихтисослиги чет тили бўлмаган факультетлари бакалаврият босқичи битирувчилари тўрт йиллик таҳсиллари нихоясида ўрганган чет тили бўйича B2 даражани эгаллашлари лозим.

"Амалий инглиз тили" фанидан тузилган ушбу дастур асосида чет тили ўқитувчилари ихтисослик хусусиятларини ҳисобга олган ҳолда ишчи дастур, ўқув-методик мажмуалар ва ўқув қўлланмаларни ишлаб чиқишлари мумкин. Ушбу дастур "Амалий инглиз тили" фанини бир босқичга бўлинган ҳолда ўқитишни назарда тутди, яъни касбга йўналтирилган босқич (чет тили махсус мақсадларда ўргатилади).

Курс учун ажратилган ўқув соатлари инглиз тилини ўргатиш ихтисослик хусусиятларидан келиб чиқиб, "Инглиз тили махсус мақсадлар учун" тамойилларига ва коммуникатив, интегратив компетентлик ёндашувларига асосланади.

**Коммуникатив фаолиятга йўналтирилган ёндашув** - таълимнинг ривожлантирувчи, функционал ва коммуникатив хусусиятларига эга бўлиб, таълим жараёнида билиш фаоллигини оширишга қўмаклашади. Таълим жараёнида мазкур ёндашув талабаларда рефлексия, ўз-ўзини ривожлантириш, намоён этишга қўмаклашади; чет тили таълимини маданиятлараро мулоқот сифатида ташкил этишга; дарс жараёнида ўқитувчи талабаларнинг ўзаро тенг ҳуқуқли иштирокчи сифатида ўзини намоён этишларини таъминлайди; таълимнинг интерактив шакллари қўллаш; талабаларда янги тил малакалари, сошио-маданий билимлар, амалий малакавий қўникмаларни мустақил эгаллашни ривожлантириш.

**Шахсга йўналтирилган ёндашув** - чет тилини ўқитишда нафақат илмий билимлар бериш, балки таълим жараёнининг иштирокчилари (талабалар, ўқитувчилар, ота-оналар) муносабатларининг фаол шаклларига асосланиш; талаба характери ва унинг ўзини ривожлантириш усулларини ўрганиш; индивидуалликни шакллантириш учун талабага қулай шарт-шароитлар яратиш; маданиятимизда шаклланган шахснинг психик ривожлантириш меъёрлари ҳақидаги тасаввурларни ўзгартириш (горизантал эмас, балки вертикал, яъни талаба ривожланиш динамикасини унинг олдинги ҳолати билан таққослаш орқали амалга оширишни, бошқалар билан эмас, балки уни ўзи билан таққослаш).

**Интегратив ёндашув** – турли фанлардан олинган билимлар, қўникма, малака ва тажрибани ҳисобга олиш, таяниш, интеграция қилиш, чет тилида коммуникатив, касбий коммуникатив, ижтимоий компетентликни баравар ривожлантиришни назарда тутди.

**Таълимда компетентлик ёндашув** - муайян натижаларга эришиш ва муҳим компетенцияларни эгаллашга қаратилади. Компетенция бўлажак касбий фаолиятга қараб шаклланиб боради. Бундай шароитда таълим жараёни янги мазмунга эга бўлади, у ўрганиш ва ўргатиш жараёнига айланади, яъни касбий ва ижтимоий аҳамиятга эга компетентликни мустақил ўқиб ўрганиш, ижтимоий-меҳнат, маданий, маиший ҳамда маданий ҳордиқ соҳаларда чет тилини қўллашга эришилади.



### Фанининг мақсад ва вазифалари

Чет тили фанининг мақсади талабаларнинг кўп маданиятли дунёда касбий, илмий ва маиший соҳаларда фаолият юритишларида коммуникатив компетенция (*унинг таркибий қисмлари ҳисобланувчи лингвистик, соціо-лингвистик, прагматик ва бошқа компетенциялари*)ни шакллантиришдан иборат.

**Компетенция** – коммуникация (мулоқот) иштирокчиларитомонидан таълимнинг аниқ мақсадларига қаратилган нутқ фаолиятини ривожлантиришга имкон берадиган билим, кўникма, малака ва шахсий фазилатлар йиғиндисини ифодалайди.

**Чет тили коммуникатив компетенцияси** – ўрганилаётган чет тилида сўзлашувчилар билан мулоқот қилишни амалга ошириш қобилияти ва тайергарлиги, шунингдек, талабаларнинг тили ўрганилаётган мамлакат маданияти билан танишиш, ўз мамлақати маданиятини янада яхшироқ англаш, уни мулоқот жараёнида тақдим эта олишини назарда тутати. Мазкур ўқув фанини ўрганишнинг асосий вазифаларига талабаларда қуйидаги компетенцияларни ривожлантириш қиради:

**Лингвистик компетенция** ўрганилаётган тил соҳиблари билан мулоқот қилиш учун тил материаллари (*фонетика, лексика, грамматика*)ни етарли даражада билиш ва нутқ фаолияти турлари (*тинглаб-тушуниш, гапириш, ўқиш ва ёзув*)да қўллай билишни назарда тутати.

**Ижтимоий-лингвистик компетенция** сўзловчининг бирон бир нуткий вазият, коммуникатив мақсад ва хоҳиш-истагидан келиб чиққан ҳолда керакли лингвистик шакл, ифода усулини танлаш кўникма ва малакаларини ўз ичига олади.

**Ижтимоий-маданий компетенция** аутентик нутқнинг миллий хусусиятларини: ўзи яшаётган мамлакатнинг урф-одатлари, қадриятлари, маросимларива бошқа миллий-маданий хусусиятларини тили ўрганилаётган мамлакат билан таққослаган ҳолда тақдим эта олиш компетенциясидир.

**Ижтимоий компетенция** - *ижтимоий-лингвистик* ва *соціо-маданий компетенцияларни ўз ичига олади*. У ҳозирги кўп маданиятли дунёда таълим олувчиларда чет тилини ўрганиш муҳимлиги тушунчаси, чет тилида мулоқот қилиш, ўз устида мустақил ишлаш ва ижтимоий мослашув воситаси сифатида фойдаланиш эҳтиёжини шакллантириш ва ривожлантириш, фуқаролик, ватанпарварлик фазилатларини тарбиялашда, чет тили орқали маданиятлараро мулоқотни амалга ошириш истаги ва хоҳишида намоён бўлади.

**Прагматик компетенция** қуйидагилардан иборат:

**Дискурсив компетенция** (*дискурс – оғзаки ёки ёзма нутқ матни*) матни тўғри талқин қилиш ва тузиш, шунингдек, шунга мос нуткий мулоқот турини танлаш учун оғзаки ва ёзма (стилистик ҳамда таркибий қисмларини билиб олишни назарда тутган) матнлар тузиш кўникма ва малакаларидан иборат.

**Стратегик (компенсатор) компетенция** чет тили муҳитида нуткий ҳамда ижтимоий мулоқот тажрибасидаги камчилик ва нуксонларни айрим вербал/новербал воситалар ёрдамида тўлдириш, коммуникатив вазиятда тушунмовчиликлар пайдо бўлганда такроран сўраш, узр сўраш ва ҳоказолар орқали мураккаб вазиятлардан уздабуронлик билан чиқиб кета олиш қобилиятини назарда тутати.

**Ўқув - билиш компетенцияси** таълим олувчининг мустақил билим олиш фаолиятида чет тиллар ва маданиятларни ўрганишнинг компетенциялар йиғиндиси бўлиб, замонавий таълим технологияларидан фойдаланиш билан боғлиқ бўлган мантикий, методологик ва умумтаълим вазифаларни ўз ичига олади.

Чет тилини ўқитиш дидактик, методик, лингвистик тамойилларни ҳамда замонавий таълим технологияларини қўллаш асосида амалга оширилади.

**Фан бўйича талабаларнинг билим, кўникма ва малакаларига  
қўйиладиган талаблар**

Чет тиллар бўйича таълимнинг барча боскичлари битирувчиларининг тайёргарлиги даражасига қўйиладиган талаблар"да олий таълим муассасаларининг ихтисослиги чет тили бўлмаган факультетлари бакалаврият боскичи битирувчилари тўрт йиллик тахсиллари нихоясида ўрганган чет тили бўйича В2 даражани эгаллашлари шарт. Унга кўра битирувчи талабалар В2 даражани таъминловчи қуйидаги коммуникатив компетенцияларни эгаллашлари лозим.

**Лингвистик компетенция:**

**Тинглаб тушуниш**

- ✓ узоқ давом этган суҳбат ва мураккаб далиллар келтирилган матни тушуниш ва идрок этиш;
- ✓ маъруза, суҳбат, мукаммал йўриқномалар, академик ва касбий презентациялар, савол-жавоблар асосий мазмунини тушуна олиш;
- ✓ реклама, эълон ва маълумотномаларни тушуниш;
- ✓ мураккаб аутентик нутқни таниш ва нотаниш контекстда тушуна олиш;
- ✓ тил соҳиблари суҳбатлари ва баҳс- мунозараларини тушуна олиш;
- ✓ радио ва интернет материаллари, интервьюларни (суҳбат) тўлиқ даражада тушуна олиш.

**Гапириш**

**Диалог**

- ✓ бизнесдаги ҳамкори билан музокара олиб бориш;
- ✓ аниқ масалалар бўйича ахборот олиш;
- ✓ узоқ муддатли музокараларда тил соҳиб билан катнашиш, уларни қўллаб-қувватлаш, керак бўлса музокараларни бошқариш;
- ✓ кундалик мавзуларда баҳс-мунозара, музокараларда фаол катнашиш;
- ✓ ихтисослик (касб) бўйича интервью, суҳбатларда катнашиш;
- ✓ фикрни аниқлаштириш, қайтадан тузиш ва баҳс- мунозара ривожига ўз хиссасини қўшиш;
- ✓ музокаралар олиб бориш жараёнида муаммоларни ечимини усталик билан ҳал этиш;
- ✓ вазиятга қараб саволлар бериш ва жавоб қайтариш.

**Монолог**

- ✓ алоҳида мавзу бўйича килинган презентациялар ўтказиш;
- ✓ ихтисослиги бўйича асбоб-ускуналарни аниқ ва равшан тасвирлаш;
- ✓ алоҳида мавзу бўйича оғзаки маъруза тузиш;
- ✓ мақола, маъруза, баҳс-мунозараларни аниқ ва равшан қилиб умумлаштириш;
- ✓ аниқ тизимга асосланган ҳолда қўшимча, етарли бўлган ҳолда ва таниш мавзу бўйича ўз фикрини ифода қила олиш.

**Ўқиш**

- ✓ таниш ва нотаниш мавзу бўйича тузилган матнлардан асосий / керакли бўлган ахборотни, шахсий ва мутахассислик бўйича корреспонденцияларни (хат-хабарларни) тушуниш;
- ✓ диаграмма, схема, чизмаларни қисқача таърифини тушуниш;
- ✓ мураккаб бўлган маълумотларни идрок этиш;
- ✓ махсус, мураккаб бўлган ёзма йўриқнома ва қўлланмаларни тушуниш;
- ✓ касбга оид мақола ва маърузалардан керакли ахборотни ажратиш олиш;
- ✓ керак ёки нокераклигини аниқлаш мақсадида матни у ёки бу қисмини синчиклаб ўқиш, конференция дастурларини ўқиб тушуниш.

**Ёзув.**

- ✓ махсус маълумотларни (тил юзасидан бўлган хатларни, маълумотларни, электрон хатларни) ёза олиш;



- ✓ эссе ва маърузаларни ёза олиш;
- ✓ аниқ мантикка эга бўлган илмий мақолалар ва илмий тадқиқот ишларни ёза олиш;
- ✓ ёзма таклифлар, ҳисобот ва резюмелар туза олиш;
- ✓ битирув малакавий ишларни зарур бўлганда ёза олиш.
- ✓ Тил компетенцияси

#### **Лексик компетенция**

- ✓ касбий лексика ва терминларни ишлата олиш;
- ✓ коммуникатив вазиятларда мавзуга оид бўлган лексикани ишлата олиш;
- ✓ интернационал сўзларни тушуниш ва қўллай олиш.

#### **Грамматик компетенция**

- ✓ мураккаб грамматик ва синтактик қурилмаларни коммуникатив вазиятларда қўллай олиш;
- ✓ боғловчи сўзларни тўғри қўллаш;
- ✓ мутахассисликка оид матнларни унинг мазмунини тушуниш мақсадида матнни таҳлил қилиш талаб этилади..

#### **Фаннинг ўқув режадаги бошқа фанлар билан ўзаро боғлиқлиги ва услубий жиҳатдан узвийлиги**

Хорижий тил фанининг мантикий давоми сифатида амалий инглиз тили фани ижтимоий-иқтисодий фанлар ва ихтисослик фанлари билан ўзаро боғлиқ. Ушбу фан бошқа фанлар билан интеграллашган ҳолда ўргатилади.

#### **Фаннинг фан, таълим ва ишлаб чиқаришдаги ўрни**

Амалий инглиз тили фани ишлаб чиқариш жараёни билан бевосита боғланмаган. Талабалар мазкур фандан ўрганган билимларидан бошқа ихтисослик фанларини ўзлаштиришда (соҳага оид маълумотларни чет тилида излаб топиш, таҳлил қилиш ва билим олиш жараёнида фойдаланиш), келгусидаги касбий фаолиятларида фойдаланишлари мумкин.

#### **Фанни ўқитишда замонавий ахборот ва педагогик технологиялар**

“Амалий инглиз тили” фанини ўқитишда таълимнинг қуйидаги илғор ва замонавий технология ва методларидан фойдаланилади:

- ✓ педагогик маҳорат технологияси (Ю.Н.Кулюткин, Е.Б.Спасская);
- ✓ билимдонлар баҳси;
- ✓ мавқеингизни эгалланг – шиорлар асосидаги баҳс;
- ✓ таълимнинг фаол услублари: “Кейс-услуби” (Гарвард университети бизнес мактаби), ишбоп ўйинлар.

#### **Ижодий топшириқларни гуруҳ билан ҳал қилиш услубларидан:**

- ✓ дельфи услуби – таклиф қилинган ечимдан статистик услуб асосида беш камчиликни аниқлаш ва улардан энг яхшисини танлаб, баҳолаш, камчиликлар сабабини аниқлаш;
- ✓ кора қути услуби – масалани таҳлил қилиш, ижодий баҳс орқали камчиликлар сабабини аниқлаш;
- ✓ кундаликлар услуби – гуруҳ аъзоларининг ён дафтарчаларидаги ёзувларни таҳлили ва уларда берилган таклиф-мулоҳазаларни муҳокама қилиш, умумий фикр ишлаб чиқиш;
- ✓ “Тўғридан-тўғри жамоавий ақлий ҳужум” (Дж.Дональд Филлипс) – 20-60 кишилиқ катта аудиторияда янги фикрларни, самарадорликни ошириш иш ёки машқ минн-гуруҳларда олиб борилади ва фикрлар жамоада муҳокама қилинади;

- ✓ “Ақлий ҳужум” – (Е.А.Александров и Г.Я.Буш) – гуруҳ катнашчилари ижодий гоёларини жамoa, гоёлари билан қарши гоёлар ёрдамида фаоллаштириш, уларни қўллашни баҳолаш;
- ✓ сенектика услуби (У.Гордон) – муаммони ифодалашга ўргатиш, унинг қисмларини аниқлаш, муаммони ечишдаги ўхшашликларни топиш. Креативлиқни ўстириш, оддий ҳодисаларнинг гайри-табiiй томонларини топиш, ижодий қобилиятларини аниқлаш;
- ✓ «АРИЗ – ТРИЗ» (Г.С.Альтшуллер ва унинг мактаби, ТРИЗ - кашфиёт топшириқлари технологияларини ривожлантириш) – ўрганилаётган тизим ривожланиши қонуниятларига бўйсундирилган лантикий операциялар тизими 40 усулдан иборат: “қўшилиш”, “матрёшка”, “карама-қарши”, “зарарни фойдага айлантириш” ва бошқалар.

### **АСОСИЙ ҚИСМ**

**Нутқ мавзулари:**

- ✓ Таълим мавзуси (Ўқув муассасаси, Ўқув қуроллари ва унга муносабат, ихтисослик фанларининг ҳозирда ўқитилиши ва ҳоказо)
- ✓ Ижтимоий маданий (Ўзбекистон Республикаси ва тили ўрганилаётган мамлакатнинг тарихий, географик, иқлимий, маданий, маиший хусусиятлари).
- ✓ Касбга йўналтирилган мавзу (ўрганилаётган ихтисослик тарихи, йўналишлари, соҳанинг буюк намоёндалари, долзарб муаммолари, касбий этика ва ҳоказо).

#### **Амалий машғулот бўйича кўрсатма ва тавсиялар**

Амалий машғулот учун қуйидаги мавзулар тавсия этилади:

1. Ўрганилаётган ихтисослик тарихи;
2. Ўрганилаётган ихтисослик йўналишлари;
3. Ўрганилаётган соҳанинг буюк намоёндалари;
4. Ўрганилаётган соҳанинг долзарб муаммолари;
5. Касбий этика;
6. Ихтисослик фанларининг ҳозирда ўқитилиши;
7. Ихтисосликка оид матнлар, атамалар тушунчаларни ўқитилиши ва таржима қилиш масалалари;
8. Ихтисослик бўйича чет эл тажрибасини ўрганиш, илмий адабиётларни шарҳлай олиш малақасини шакллантириш;
9. Ихтисосликка оид мавзуда тақдимот тайёрлаш ва уни тақдим қилиш малақасини шакллантириш;
10. Ихтисослик бўйича илмий мақола ва унга аннотация тайёрлаш.

#### **Умумий босқич**

##### **Нутқ компетенцияси**

Босқичнинг асосий мақсади:

- ✓ узлуксиз таълим тизимининг аввалги босқичлари (академик лицей ва касб-ҳунар коллежлари)да талабалар хорижий тилда эгаллаган малака ва қўникмаларини коррекция қилиш ва тенглаштириш;
- ✓ талабаларни нутқ фаолияти турлари бўйича касбий мулоқотга тайёрлашдан иборат;

**Тинглаб тушуниш:**

- ✓ маъруза, тақдимот ва мунозаралар, радио ва телевидение эшиттиришлари, янгиликлар, интервьюлар, ҳужжатли фильм ва шу каби оғзаки матнлар;
- ✓ реклама ва эълонлар;
- ✓ тил соҳиблари нутқ ёзувлари (бадиий, ҳужжатли фильмлар, оммавий чиқиш ва ҳоказо);
- ✓ тил соҳибларининг ижтимоий мавзулардаги ўзаро суҳбати;



- ✓ тингланган ахборотнинг асосий мақсади, тўлиқ мазмунини тинглаб тушуниш малака ва кўникмаларини ривожлантириш.

#### **Гапириш:**

##### **Диалог нутқ**

- ✓ ижтимоий мавзуларда суҳбат ва норасмий диалог;
- ✓ касбий ёки бошқа мавзуларда расмий ва норасмий мунозаралар;
- ✓ мунозарани бошқариш, интервью, музокаралар ва телефон орқали мулоқот олиб бориш.

##### **Монолог нутқ**

- ✓ ихтисосликка оид мавзуларда маъруза тайёрлаш ва ўқиш;
- ✓ мунозара, далил ва исботларни олға суриш, фикрни асослаб бериш;
- ✓ реклама ва махсус мавзуларда тақдирот тайёрлаш ҳамда чиқиш қилиш;
- ✓ маълумотларни умумлаштириш, мақолалар ёзиш, муҳокама қилиш.

##### **Ўқиш**

- ✓ танишув ўқиш, кўз югуртириб ўқиш ва синчиклаб ўқиш кўникма ва малакаларини ривожлантириш;
- ✓ хат-хабар, ёзишмалар ва электрон почтани ўқиш;
- ✓ махсус материалларни ўзида ақс эттирган аутентик матнларни ўқиш;
- ✓ махсус сўз ва терминларга эга матнларни, илмий ва касбга оид адабиётларни, электрон манбалар ва матбуот материалларини ўқиш.

##### **Ёзма нутқ**

- ✓ турли ёзишмалар, хат-хабарлар ва махсус докладлар (эслатма CVs ва ҳоказо) ёзиш;
- ✓ эссе, баён, резюме, тадқиқот иши (мақолалар, битирув малакавий ишлар) ёзиш.

#### **Касбга йўналтирилган босқич**

##### **Касбга йўналтирилган босқичнинг асосий мақсади:**

- ✓ нутқ турлари бўйича касбий соҳада чет тилини амалий эгаллаш;
- ✓ талабани ижодий шахс сифатида ривожлантириш;
- ✓ соҳа бўйича адабиётларни таржима қилиш малака ва кўникмаларини ривожлантириш;

##### **Тинглаб тушуниш:**

- ✓ касбга йўналтирилган аутентик материалларни бир марта эшитиб асосий мазмунини тушуниш ва зарур ахборотни олиш;
- ✓ кундалик воқеалар ҳақида янгиликлар, репортажларни тушуниш, фильм қаҳрамонлари нутқини тушуниш.

#### **Гапириш:**

##### **Диалогик нутқ**

- ✓ тил соҳиблари билан эркин мулоқотда бўлиш ва касбий мавзуларга ўз фикр ва мулоҳазаларини исботлаб бериш;
- ✓ суҳбатни бошлаш ва тугатишни билиш, суҳбатдошига таклиф ва маслаҳат бериш, саволларига жавоб бериш, ахборот алмашиш, муҳокама қилинаётган далилларни аниқлаштириш, ўқиган ёки эшитганларини муҳокама қилиш;
- ✓ матн асосий мазмунини ифодаловчи лексик ва синтактик қурилмаларга асосланиб гапириб бериш;
- ✓ ассоциатив тафаккурга асосланиб мулоҳаза, танқид, баҳолаш далиллар билан исботлаш орқали ўз нутқини тузиш;
- ✓ риторик характерга эга диалог нутқ малакаларини такомиллаштириш;
- ✓ касбий мулоқотлар, конференция, симпозиум, учрашув ва мунозараларда қатнашиш учун нутқ фаолияти, кўникма ва малакаларини такомиллаштириш.

##### **Монологик нутқ:**

- ✓ долзарб муаммо юзасида барча "Тарафдор" ва "Қарши" далилларни келтирган ҳолда ўз фикрини баён қилиш;
- ✓ тинглаган ва ўқиган матн мазмунини гапириш;

- ✓ мазмунга баҳо бериш;
- ✓ урганилган мавзулар бўйича ахборот бериш
- ✓ ўқиган матинни таҳлил қилиш ва шарҳлаш;
- ✓ ўқиган ёки тинглаган матинни қисқача мазмунини баён этиш;
- ✓ урганилган мавзуда чиқиш қилиш;
- ✓ ижтимоий –сиёсий матнларни ўқиб шарҳлаб бериш.

#### **Ўқиш:**

##### **Танишув ўқиш**

- ✓ матинни лугатсиз, берилган савол ёки умумий мазмунини тушуниш мақсадида ўқиш;
- ✓ матн: 10 % гача нотаниш сўз бўлган илмий-оммабоп, ижтимоий-сиёсий, махсус бадиий матнлар;
- ✓ матн мазмунини чет тилида ёки она тилида сўзлаб бериш, параграфларни номлаш, тест топшириш.

##### **Синчиклаб (Ўрганиб) ўқиш**

- ✓ матини асосий ахборотни ажратиб олган ҳолда мазмунини тўлиқ ва аниқ тушуниб ўқиш.

##### **Ўқиш тезлиги, ҳажми:**

- ✓ лугатдан фойдаланиб 1600 босма белгили матинни 1,0 академик соатда ўқиш.
- ✓ матн: махсус, илмий оммабоп 12% гача нотаниш сўзга эга бўлади.

##### **Кўз югуртириб ўқиш:**

- ✓ матн мазмуни хусусиятларини аниқлаш;
- ✓ зарур ахборотни матндан топиш;
- ✓ сўз (матн) маъно мазмунини контекст асосида фаҳмлаб олиш;
- ✓ матндаги бирламчи (асосий) иккинчи даражали ахборотни ажратиш;
- ✓ матн қалит сўзларини ажрата олиш;
- ✓ матн қисмларига сарлавҳа қўйиш.

##### **Ўзма нутқ**

##### **Ўзма нутқ бўйича:**

- ✓ касбга йўналтирилган босқичда шаклланган малакаларни такомиллаштириш;
- ✓ реферат, аннотация ёзиш техникасини такомиллаштириш;
- ✓ ҳужжатларни расмийлаштиришни билиш (тузилиши, услуби, ҳужжат тили) ва у асосида ҳужжатларни намунага қараб, схемага кўра, клише ва фразаларни қўллаб, ахборотни ҳисобга олиб, иш юритиш вазиятлари талабларига мос равишда расмийлаштириш;
- ✓ берилган мавзуда баён, эссе, резюме тузиш, соҳага оид адабиётлар бўйича реферат ёзиш.

##### **Лингвистик компетенция**

Лексик компетенция чет тилида кенг қўлланиладиган рецептив ва репродуктив актив, пассив, потенциал сўз бойлигини оширишга қаратилган бўлиб, унинг таркибига тургун сўз бирикмалари, нутқ намуналари, клише ва касбий терминлар киради. Мазкур лексик минимум тили ўрганилаётган мамлакат маданиятини ифодалайди.

Ихтисослик бўйича лексик минимум методик принциплар - кўп маънолилик, тематик, сўз яшаш хусусиятларини ҳисобга олиш тамойилларига кўра касбга йўналтирилган чет тили таълими асосида танлаб олинади. Санаб ўтилган тамойилларга кўра лексик минимум 2 турдан иборат:

- а) умумтаълимий;
- б) касбий лексика

Қуйидаги жадвалда таклиф этилаётган лексик минимум курслар бўйича тақсимлаб берилган:

Курс	Умумтаълимий минимум		Касбий лексика	Жами
	Актив*	Пассив**	Актив	
1	350	700	100	800
2	350	500	150	800
3	150	500	200	700
4	150	500	200	700
Жами	1000	2200	650	3000

\* Минимумда олдинги боскичда ўрганилган лексика сони кўрсатилмаган.

\*\* Пассив лексикага актив лексика ҳам кирadi.

#### Нутқ фаолияти турлари устида ишлаш учун вақтни тўғри тақсимлаш

Қўйилган мақсадларга эришиш учун ҳар бир дарсда нутқ фаолияти турлари қуйидаги нисбатда бўлиши мақсадга мувофиқ:

тинглаб тушуниш - 25% ;

гапириш - 25%;

ўқиш - 30%;

ёзув - 20% .

#### Талабалар билимининг назорат қилиш

Талабаларнинг чет тили бўйича эгаллаган билим, малака ва қўникмалари жорий, оралик ва якуний назоратлар орқали назорат қилинади.

Жорий назорат: ҳар бир дарсда алоҳида талаба билан ишлаб уларнинг дарсга тайёргарлик даражаси савол-жавоб орқали текширилиб, кундалик баллар қўйиб борилади.

Оралик назорат: кафедранинг фан бўйича ишчи дастурига асосланган ҳолда, ҳар бир семестрга қўйилган талаблар асосида бир қанча дарслар ўтилганидан кейин ўтказилади. Натижаларни дастурда берилган талаблар билан қиёслаш орқали талабаларнинг малака ва қўникмалари қанчалик ўсганлиги аниқлаб борилади.

Якуний назорат: фан бўйича бакалаврият курсининг якунида ўтказилади. Якуний назорат ўтказилиши натижасида дастур талаблари бўйича касбий чет тили компетенцияси аниқлаб олинади.

#### Якуний назорат мазмуни

##### 1. Тинглаб тушуниш бўйича:

Касбга йўналтирилган матнни тинглаш ва уни тушунганлигини аниқлаш мақсадида тестлар ечиш.

##### 2. Гапириш бўйича:

Касбга йўналтирилган мавзу бўйича батафсил, синчиклаб, аргументлар билан бойитган ҳолда ўз фикрини баён этиш.

##### 3. Ўқиш бўйича:

Касбий йўналишдаги матнни ўқиб, тушунганлиги асосида тест топшириқларини ечиш. Ўқиган матн мазмунини аниқ ва тўлиқ тушунганлигини текширишни ёзма таржима билан амалга ошириш мумкин. Бунда лугатдан фойдаланишга рухсат берилади.

##### 4. Ёзув бўйича:

Соҳанинг долзарб муаммоларига бағишланган эссе ёзиш.

#### Лаборатория ишларини ташкил этиш бўйича кўрсатмалар

Фан бўйича лаборатория ишлари намунавий ўқув режада кўзда тутилмаган

#### Курс ишини ташкил этиш бўйича услубий кўрсатмалар

Фан бўйича курс иши намунавий ўқув режада режалаштирилмаган



### Мустақил таълимни ташкил этишининг шакли ва мазмуни

Чет тили фанидан мустақил ишларининг мақсади - талабаларнинг касбий, коммуникатив фаолиятини шакллантириш ва ривожлантириш, уларнинг ижодий фаолиятини ўстириш, ва чет тили устида мустақил ишлай олиш малака ва кўникмаларини ҳосил қилиш ва ривожлантиришдан иборат. Ушбу умумий мақсадга эришиш учун қуйидаги бир неча вазифаларни бажариш назарда тутилади:

- талабаларнинг тил тайёргарлик сифатини ошириб бориш, тил ва мутахассислик бўйича адабиётлар устида ишлай олиш кўникмаларини шакллантириш ва ривожлантириш;
- ўз касбий билим ва малакаларини кейинчалик мустақил тўлдириб ва янгилаб туриш эҳтиёжларини яратиш ва сақлаб қолиш, чет тили бўйича яратилган малака ва кўникмаларни ўстириб, ривожлантириб бориш;
- талаба бажариши керак бўлган ишларни тўғри ташкил қилиш, келиб чиқадиган қийинчиликларни олдиндан била олиш, ҳис этиш ва уларни бартараф қилиш йўлларини топа олиш.

### Таълим этилаётган мустақил ишларининг мазмуни

Талабаларнинг мустақил ишлари нутқ фаолиятининг қуйидаги турлари бўйича ташкил қилинади.

**Ўқиш:** (таниниб чиқиш, синчиклаб, қараб чиқиш), ёзув, тинглаб тушуниш ва гапириш;

**Тинглаб тушуниш:** ҳажми турлича бўлган аудио- ва видео матнларни тинглаб тушуниш, саволларга жавоб бериш, ганириб бериш, аннотация ёза олиш;

**Гапириш:** талабаларнинг диалогик ва монологик нутқлари бўйича мустақил ишлари аудиторияда ўргатилган матнлар, ўқув материаллари асосида ташкил қилинади. Гапириш бўйича мустақил иш сифатида мавзу асосида маълумот тайёрлаш, матн мазмунини гапириб бериш, ўрганилган лексик материаллар асосида ҳикоялар тузиш, берилган муаммоларни масал ва вазиятларни муҳокама қилиш каби топшириқлар бериш мумкин. Гапириш кўникмаларини ривожлантириб бориш учун мультимедиа дастурларини ва он-лайн технологияларини қўлланга асосий эътибор қаратилади;

**Ўқиш:** талаба ўрганиётган соҳасига оид адабиётлар билан танишиб чиқиши ва ўзи учун қизикарли ва керакли бўлган ахборотни тушуниши, публицистик, илмий-оммабоп ижтимоий-сиёсий адабиётларни ўқиши ва керакли ахборотни олиши лозим. Машғулотларда юқорида айtilган малака ва кўникмаларни шакллантириш ва ўстириш жуда мураккаб бўлганлиги учун уларни мустақил иш жараёнида синчиклаб, кўз югуртириб, қараб чиқиб ўқиш турлари орқали ташкил қилинади. Ушбу ўқиш турларини назорат қилиш-матини бутунлай таржима қилиш ёки унинг танлаб олинган қисмларини таржима қилиш билан амалга оширилади.

Таниниб чиқиб ўқиш мустақил иш тури сифатида уйда ўқиш шаклида олиб борилади. Ўқишнинг бу тури учун аутентик ёки адаптация қилинган адабий, илмий-оммабоп адабиёт танлаб олинади. Текшириш шакллари: ўқиганини мазмунини тушунганлиги бўйича савол-жавоб ишлари, ажратиб олинган масалалар бўйича ахборот олиш, баҳс-мунозаралар ўтказиш, ахборотга режа тузиш ва ҳ.к.

**Қараб чиқиб, кидириб топиш** учун ўқиш. Ўқишнинг бу турида оммавий-сиёсий, публицистик матнлар, газета ва журнал материаллари берилади ва ҳар бир дарсда қисқача ахборот олинади. Талаба битта газета мақолалари асосида ахборот беради ёки мавзу бўйича бир қанча газета ва журналлардан ахборот тайёрлайди.

**Ёзув.** Ёзув бўйича мустақил иш ўз ичига ўрганилаётган тилда фикрни баён қила олиш ишларини олади. Бунда мустақил иш мазмунига қуйидагилар қиради:

- аннотация, реферат, резюмелар туза олиш;
- оғзаки равишда нутқ ҳосил қилиш учун режа ёки тезис тузиш;
- турли хатлар, табрикнома, таклифлар, иш юзасидан хатлар туза олиш;

- ўқишга ва ишга қабул юзасидан аризалар ёза олиш;
- соҳага оид турли ҳужжатларни тўлдириш;
- баён, ишро, эсселар ёза олиш; касби бўйича иш юритиш ишларини (ёзувларини) олиб бориш.

Ўқиб таржима қилинган материаллар курс ишлари ва рефератларда қўлланилади.

#### **Дастурнинг информацон – методик таъминоти**

Чет тили фанини ўқитиш жараёнида таълимнинг замонавий интерфаол усулларида, педагогик ва ахборот-коммуникация технологияларида кенг фойдаланилади. Амалий машғулотларда аклий ҳужум, кластер, блиц-сўров, кичик гуруҳларда ишлаш, инсерт, презентация, кейс стади каби усулларнинг мавзуга мос танланиши ва қўлланилиши дарс самарасини оширишга катта ҳисса қўшади.

#### **Фойдаланиладиган адабиётлар рўйхати**

##### **Асосий адабиётлар**

1. Абдалиева Е.Н. Учебник английского языка для студентов неязыковых вузов. Т. 1996
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##### **Қўшимча адабиётлар**

1. Агзамова З.И. Турдиева С.Х. Физика факультети бакалаврият талабалари учун инглиз тилидан матнлар тўплами. НУУЗ. Т. 2007
2. Артикова Ю.А. Механика-математика факультети бакалаврият талабалари учун инглиз тилидан матнлар тўплами НУУЗ. Т. 2006
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5. Саттарова З.Б. Методическая разработка по английскому языку на тему «Экология». НУУЗ. Т. 2003
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7. Х.Аловитдинова, Д. Раджабова ва б. English for esl and esp learners. Т. 2012

##### **Интернет сайтлари**

<http://www.adu.uz>  
<http://www.zivonet.uz>  
<http://www.teachingenglish.org.uk/>  
<http://www.inspiringteachers.com/>  
<http://teachnet.org/ntpi/research/prep/Cooper/http://www.alt-teachercert.org/Mentoring.html>  
[www.examenglish.com](http://www.examenglish.com)  
<http://www.edufle.net>

## **V.2 ISHCHI O'QUV DASTURI**

ЎЗБЕКИСТОН РЕСПУБЛИКАСИ  
ОЛИЙ ВА ЎРТА МАХСУС ТАЪЛИМ ВАЗИРЛИГИ  
АНДИЖОН ДАВЛАТ УНИВЕРСИТЕТИ



“ТАСДИҚЛАНДИ”

Ўқув йиллари бўйича проректор

доц. А.Маматқосупов

2019 йил “31” август

“АМАЛИЙ ИШЧИЛИК ТИЛИ”

фанининг

ИШЧИ ЎҚУВ ДАСТУРИ

(4 курс)

Билим соҳаси: 100000 - Гуманитар соҳа

Таълим соҳаси: 130000 - Математика

Таълим йўналишлари: 5130100 –Математика

Умумий ўқув соати -74 соат

Шу жумладан:

Амалий машғулотлар –42 соат

(7-семестр-20, 8-семестр-22)

Мустақил таълим соати– 32 соат

(7-семестр-16, 8-семестр-16)

Андижон-2019й.



Фаннинг ишчи ўқув дастури Андижон давлат университети кенгашининг 2019 йил “31” августдаги 1 сонли баёни билан тасдиқланган “Амбий инглиз тили” фанининг ўқув дастури асосида тайёрланган.

Фан дастури Андижон давлат университети Кенгашининг 2019 йил “31” августдаги “1” сонли баёни билан тасдиқланган.

Тузувчилар:

- Д.Рустамов – АндДУ, Факультетлараро чет тиллар (аниқ ва табиий  
фанлар) кафедраси мудири  
Э.Курбанов – АндДУ, Факультетлараро чет тиллар (аниқ ва табиий  
фанлар) кафедраси ўқитувчиси  
Д.Аҳмедова – АндДУ, Факультетлараро чет тиллар (аниқ ва табиий  
фанлар) кафедраси ўқитувчиси  
С.Абдукаҳҳорон – АндДУ, Факультетлараро чет тиллар (аниқ ва  
табиий фанлар) кафедраси ўқитувчиси

Такригчилар:

- М.Абдуваҳидов – АндДУ, “Инглиз тили ва адабиёти” кафедраси доценти,  
филология фанлари номзоди.  
С.Содиқжонов – АндДУ, “Инглиз тили фонетикаси” кафедраси  
мудири, филология фанлари номзоди.

АндДУ Чет тиллар факультети  
декани:

2019 йил “31”

08

А.Маматкулов



Факультетлараро чет тиллар (аниқ ва табиий фанлар)  
кафедраси мудири:

2019 йил “31”

08

Д.Рустамов



## К И Р И Ш

Мазкур дастур Ўзбекистон Республикаси Президентининг 2012 йил 10 декабрдаги “Чет тилларни ўрганиш тизимини янада такомиллаштириш чоратадбирлари тўғрисида”ги ПҚ-1875-сонли, Ўзбекистон Республикаси Вазирлар Маҳкамасининг 2013 йил 8 майдаги “Чет тиллар бўйича таълимнинг барча босқичлари битирувчиларининг тайёргарлик даражасига қўйиладиган талаблар” тўғрисидаги 124-сонли қарорлари ҳамда Европа Кенгашининг “Чет тилини эгаллаш умумевропа компетенциялари: ўрганиш, ўқитиш ва баҳолаш” тўғрисидаги умумэътироф этилган халқаро меъёрлари (CEFR – Common European Framework of Reference) га мувофиқ қайта ишлаб чиқилди.

Вазирлар Маҳкамасининг “Чет тиллар бўйича таълимнинг барча босқичлари битирувчиларининг тайёргарлик даражасига қўйиладиган талаблар” га кўра олий таълим муассасаларининг ихтисослиги чет тили бўлмаган факультетлари бакалаврият босқичи битирувчилари тўрт йиллик таҳсиллари нихоясида ўрганган чет тили бўйича B2 даражани эгаллашлари лозим.

“Амалий инглиз тили” фанидан тузилган ушбу дастур асосида чет тили ўқитувчилари ихтисослик хусусиятларини ҳисобга олган ҳолда ишчи дастур, ўқув-методик мажмуалар ва ўқув қўлланмаларни ишлаб чиқишлари мумкин. Ушбу дастур “Амалий инглиз тили” фанини бир босқичга бўлинган ҳолда ўқитишни назарда тутди, яъни **касбга йўналтирилган босқич** (чет тили махсус мақсадларда ўргатилади).

Курс учун ажратилган ўқув соатлари инглиз тилини ўргатиш ихтисослик хусусиятларидан келиб чиқиб, **“Инглиз тили махсус мақсадлар учун”** тамойилларига ва коммуникатив, интегратив компетентлик ёндашувларига асосланади.

**Коммуникатив фаолиятга йўналтирилган ёндашув** - таълимнинг ривожлантирувчи, функционал ва коммуникатив хусусиятларига эга бўлиб, таълим жараёнида билиш фаоллигини оширишга қўмаклашади. Таълим жараёнида мазкур ёндашув талабаларда рефлексия, ўз-ўзини ривожлантириш, намоён этишга қўмаклашади; чет тили таълимини маданиятлараро мулоқот сифатида ташкил этишга; дарс жараёнида ўқитувчи талабаларнинг ўзаро тенг ҳуқуқли иштирокчи сифатида ўзини намоён этишларини таъминлайди; таълимнинг интерактив шакллари қўллаш; талабаларда янги тил малакалари, соcio-маданий билимлар, амалий малакавий кўникмаларни мустақил эгаллашни ривожлантириш.

**Шахсга йўналтирилган ёндашув** - чет тилини ўқитишда нафақат илмий билимлар бериш, балки таълим жараёнининг иштирокчилари (талабалар, ўқитувчилар, ота-оналар) муносабатларининг фаол шакллари асосланиш; талаба характери ва унинг ўзини ривожлантириш усуллари ўрганиш; индивидуалликни шакллантириш учун талабага қулай шарт-шароитлар яратиш; маданиятимизда шаклланган шахснинг психик ривожлантириш меъёрлари ҳақидаги тасаввурларни ўзгартириш (горизантал

эмас, балки вертикал, яъни талаба ривожланиш динамикасини унинг олдинги ҳолати билан таққослаш орқали амалга оширишни, бошқалар билан эмас, балки уни ўзи билан таққослаш).

**Интегратив ёндашув** – турли фанлардан олинган билимлар, кўникма, малака ва тажрибани ҳисобга олиш, таяниш, интеграция қилиш, чет тилида коммуникатив, касбий коммуникатив, ижтимоий компетентликни баравар ривожлантиришни назарда тутди.

**Таълимда компетентлик ёндашув** - муайян натижаларга эришиш ва муҳим компетенцияларни эгаллашга қаратилади. Компетенция бўлажак касбий фаолиятга қараб шаклланиб боради. Бундай шароитда таълим жараёни янги мазмунга эга бўлади, у ўрганиш ва ўргатиш жараёнига айланади, яъни касбий ва ижтимоий аҳамиятга эга компетентликни мустақил ўқиб ўрганиш, ижтимоий-меҳнат, маданий, маиший ҳамда маданий ҳордиқ соҳаларда чет тилини қўллашга эришилади.

### **Фаннинг мақсад ва вазифалари**

Чет тили фанининг мақсади талабаларнинг кўп маданиятли дунёда касбий, илмий ва маиший соҳаларда фаолият юритишларида коммуникатив компетенция (*унинг таркибий қисмлари ҳисобланувчи лингвистик, соціо-лингвистик, прагматик ва бошқа компетенциялари*)ни шакллантиришдан иборат.

**Компетенция** – коммуникация (мулоқот) иштирокчиларитомонидан таълимнинг аниқ мақсадларига қаратилган нутқ фаолиятини ривожлантиришга имкон берадиган билим, кўникма, малака ва шахсий фазилатлар йиғиндисини ифода қилади.

**Чет тили коммуникатив компетенцияси** – ўрганилаётган чет тилида сўзлашувчилар билан мулоқот қилишни амалга ошириш қобилияти ва тайёргарлиги, шунингдек, талабаларнинг тили ўрганилаётган мамлакат маданияти билан танишиш, ўз мамлакати маданиятини янада яхшироқ англаш, уни мулоқот жараёнида тақдим эта олишини назарда тутди. Мазкур ўқув фанини ўрганишнинг асосий вазифаларига талабаларда қуйидаги компетенцияларни ривожлантириш киради:

**Лингвистик компетенция** ўрганилаётган тил соҳиблари билан мулоқот қилиш учун тил материаллари (*фонетика, лексика, грамматика*)ни етарли даражада билиш ва нутқ фаолияти турлари (*тинглаб-тушуниш, гапириш, ўқиш ва ёзув*)да қўллай билишни назарда тутди.

**Ижтимоий-лингвистик компетенция** сўзловчининг бирон бир нутқий вазият, коммуникатив мақсад ва хоҳиш-истагидан келиб чиққан ҳолда керакли лингвистик шакл, ифода усулини танлаш кўникма ва малакаларни ўз ичига олади.

**Ижтимоий-маданий компетенция** аутентик нутқнинг миллий хусусиятларини: ўзи яшаётган мамлакатнинг урф-одатлари, қадриятлари, маросимларива бошқа миллий-маданий хусусиятларини тили ўрганилаётган мамлакат билан таққослаган ҳолда тақдим эта олиш компетенциясидир.

*Ижтимоий компетенция - ижтимоий-лингвистик ва соціо-маданий компетенцияларни ўз ичига олади. У ҳозирги кўп маданиятли дунёдатаълим олувчиларда чет тилини ўрганиш муҳимлиги тушунчаси, чет тилида мулоқот қилиш, ўз устида мустақил ишлаш ва ижтимоий мослашув воситаси сифатида фойдаланиш эҳтиёжини шакллантириш ва ривожлантириш, фуқаролик, ватанпарварлик фазилатларини тарбиялашда, чет тили орқали маданиятлараро мулоқотни амалга ошириш истаги ва хоҳишида намоён бўлади.*

**Прагматик компетенция** қуйидагилардан иборат:

**Дискурсивкомпетенция** (дискурс – оғзаки ёки ёзма нутқ матни) матнни тўғри талқин қилиш ва тузиш, шунингдек, шунга мос нутқий мулоқот турини танлаш учун оғзаки ва ёзма (стилистик ҳамда таркибий қисмларини билиб олишни назарда тутган) матнлар тузиш кўникма ва малакаларидан иборат.

**Стратегик (компенсатор) компетенция** чет тили муҳитида нутқий ҳамда ижтимоий мулоқот тажрибасидаги камчилик ва нуқсонларни айрим вербал/новербал воситалар ёрдамида тўлдириш, коммуникатив вазиятда тушунмовчиликлар пайдо бўлганда такроран сўраш, узр сўраш ва ҳоказолар орқали мураккаб вазиятлардан уddaбуронлик билан чиқиб кета олиш қобилиятини назарда тутди.

**Ўқув - билиш компетенцияси** таълим олувчининг мустақил билим олиш фаолиятида чет тиллар ва маданиятларни ўрганишнинг компетенциялар йиғиндиси бўлиб, замонавий таълим технологияларидан фойдаланиш билан боғлиқ бўлган мантиқий, методологик ва умумтаълимвазифаларни ўз ичига олади.

Чет тилини ўқитиш дидактик, методик, лингвистик тамойилларни ҳамда замонавий таълим технологияларини қўллаш асосида амалга оширилади.

### **Фан бўйича талабаларнинг билим, кўникма ва малакаларига қўйиладиган талаблар**

Чет тиллар бўйича таълимнинг барча босқичлари битирувчиларининг тайёргарлик даражасига қўйиладиган талаблар”да олий таълим муассасаларининг ихтисослиги чет тили бўлмаган факультетлари бакалаврият босқичи битирувчилари тўрт йиллик таҳсиллари ниҳоясида ўрганган чет тили бўйича В2 даражани эгаллашлари шарт. Унга кўра битирувчи талабалар В2 даражани таъминловчи қуйидаги коммуникатив компетенцияларни эгаллашлари лозим.

**Лингвистик компетенция:**

**Тинглаб тушуниш**

- ✓ узоқ давом этган суҳбат ва мураккаб далиллар келтирилган матнни тушуниш ва идрок этиш;

- ✓ маъруза, суҳбат, мукаммал йўриқномалар, академик ва касбий презентациялар, савол-жавоблар асосий мазмунини тушуна олиш;
- ✓ реклама, эълон ва маълумотномаларни тушуниш;
- ✓ мураккаб аутентик нутқни таниш ва нотаниш контекстда тушуна олиш;
- ✓ тил соҳиблари суҳбатлари ва баҳс- мунозараларини тушуна олиш;
- ✓ радио ва интернет материаллари, интервьюларни (суҳбат) тўлиқ даражада тушуна олиш.

## **Гапириш**

### **Диалог**

- ✓ бизнесдаги ҳамкори билан музокара олиб бориш;
- ✓ аниқ масалалар бўйича ахборот олиш;
- ✓ узоқ муддатли музокараларда тил соҳиби билан қатнашиш, уларни қўллаб-қувватлаш, керак бўлса музокараларни бошқариш;
- ✓ кундалик мавзуларда баҳс-мунозара, музокараларда фаол қатнашиш;
- ✓ ихтисослик (касб) бўйича интервью, суҳбатларда қатнашиш;
- ✓ фикрни аниқлаштириш, қайтадан тузиш ва баҳс- мунозара ривожига ўз хиссасини қўшиш;
- ✓ музокаралар олиб бориш жараёнида муаммоларни ечимини усталик билан ҳал этиш;
- ✓ вазиятга қараб саволлар бериш ва жавоб қайтариш.

### **Монолог**

- ✓ алоҳида мавзу бўйича қилинган презентациялар ўтказиш;
- ✓ ихтисослиги бўйича асбоб-ускуналарни аниқ ва равшан тасвирлаш;
- ✓ алоҳида мавзу бўйича оғзаки маъруза тузиш;
- ✓ мақола, маъруза, баҳс-мунозараларни аниқ ва равшан қилиб умумлаштириш;
- ✓ аниқ тизимга асосланган ҳолда қўшимча, етарли бўлган ҳолда ва таниш мавзу бўйича ўз фикрини ифода қила олиш.

### **Ўқиш**

- ✓ таниш ва нотаниш мавзу бўйича тузилган матнлардан асосий / керакли бўлган ахборотни, шахсий ва мутахассислик бўйича корреспонденцияларни (хат-хабарларни) тушуниш;
- ✓ диаграмма, схема, чизмаларни қисқача таърифини тушуниш;
- ✓ мураккаб бўлган маълумотларни идрок этиш;
- ✓ махсус, мураккаб бўлган ёзма йўриқнома ва қўлланмаларни тушуниш;
- ✓ касбга оид мақола ва маърузалардан керакли ахборотни ажратиб олиш;
- ✓ керак ёки ноқераклигини аниқлаш мақсадида матнни у ёки бу қисмини синчиклаб ўқиш, конференция дастурларини ўқиб тушуниш.

### **Ёзув.**

- ✓ махсус маълумотларни (тил юзасидан бўлган хатларни, маълумотларни, электрон хатларни) ёза олиш;
- ✓ эссе ва маърузаларни ёза олиш;

- ✓ аниқ мантиққа эга бўлган илмий мақолалар ва илмий тадқиқот ишларни ёза олиш;
- ✓ ёзма таклифлар, ҳисобот ва резюмелар туза олиш;
- ✓ битирув малакавий ишларни зарур бўлганда ёза олиш.
- ✓ **Тил компетенцияси**

#### **Лексик компетенция**

- ✓ касбий лексика ва терминларни ишлата олиш;
- ✓ коммуникатив вазиятларда мавзуга оид бўлган лексикани ишлата олиш;
- ✓ интернационал сўзларни тушуниш ва қўллай олиш.

#### **Грамматик компетенция**

- ✓ мураккаб грамматик ва синтактик қурилмаларни коммуникатив вазиятларда қўллай олиш;
- ✓ боғловчи сўзларни тўғри қўллаш;
- ✓ мутахассисликка оид матнларни унинг мазмунини тушуниш мақсадида матнни таҳлил қилиши талаб этилади..

### **Фаннинг ўқув режадаги бошқа фанлар билан ўзаро боғлиқлиги ва услубий жиҳатдан узвийлиги**

Хорижий тил фанининг мантикий давоми сифатида амалий инглиз тили фани ижтимоий-иқтисодий фанлар ва ихтисослик фанлари билан ўзаро боғлиқ. Ушбу фан бошқа фанлар билан интеграллашган ҳолда ўргатилади.

#### **Фаннинг фан, таълим ва ишлаб чиқаришдаги ўрни**

Амалий инглиз тили фани ишлаб чиқариш жараёни билан бевосита боғланмаган. Талабалар мазкур фандан ўрганган билимларидан бошқа ихтисослик фанларини ўзлаштиришда (соҳага оид маълумотларни чет тилида излаб топиш, таҳлил қилиш ва билим олиш жараёнида фойдаланиш), келгусидаги касбий фаолиятларида фойдаланишлари мумкин.

#### **Фанни ўқитишда замонавий ахборот ва педагогик технологиялар**

“Амалий инглиз тили” фанини ўқитишда таълимнинг қуйидаги илғор ва замонавий технология ва методларидан фойдаланилади:

- ✓ педагогик маҳорат технологияси (Ю.Н.Кулюткин, Е.Б.Спасская);
- ✓ билимдонлар баҳси;
- ✓ мавқеингизни эгалланг – шиорлар асосидаги баҳс;
- ✓ таълимнинг фаол услублари: “Кейс-услуги” (Гарвард университети бизнес мактаби), ишбоп ўйинлар.

#### **Ижодий топшириқларни гуруҳ билан ҳал қилиш услубларидан:**

- ✓ **дельфи услуги** – таклиф қилинган ечимдан статистик услуб асосида беш камчиликни аниқлаш ва улардан энг яхшисини танлаб, баҳолаш, камчиликлар сабабини аниқлаш;

- ✓ **қора қути услуби** – масалани таҳлил қилиш, ижодий баҳс орқали камчиликлар сабабини аниқлаш;
- ✓ **кундаликлар услуби** – гуруҳ аъзоларининг ён дафтарчаларидаги ёзувларни таҳлили ва уларда берилган таклиф-мулоҳазаларни муҳокама қилиш, умумий фикр ишлаб чиқиш;
- ✓ **“Тўғридан-тўғри жамоавий ақлий ҳужум”** (Дж.Дональд Филлипс) – 20-60 кишилик катта аудиторияда янги фикрларни, самарадорликни ошириш иш ёки машқ мини-гуруҳларда олиб борилади ва фикрлар жамоада муҳокама қилинади;
- ✓ **“Ақлий ҳужум”** – (Е.А.Александров и Г.Я.Буш) – гуруҳ қатнашчилари ижодий ғояларини жамоа, ғоялари билан қарши ғоялар ёрдамида фаоллаштириш, уларни қўллашни баҳолаш;
- ✓ **сенектика услуби** (У.Гордон) – муаммони ифодалашга ўргатиш, унинг қисмларини аниқлаш, муаммони ечишдаги ўхшашликларни топиш. Креативликни ўстириш, оддий ҳодисаларнинг ғайри-табиий томонларини топиш, ижодий қобилиятларини аниқлаш;
- ✓ **«АРИЗ – ТРИЗ»** (Г.С.Альтшуллер ва унинг мактаби, ТРИЗ - кашфиёт топшириқлари технологияларини ривожлантириш) – ўрганилаётган тизим ривожланиши қонуниятларига бўйсундирилган мантикий операциялар тизими 40 усулдан иборат: “қўшилиш”, “матрёшка”, “қарама-қарши”, “зарарни фойдага айлантириш” ва бошқалар.

## АСОСИЙ ҚИСМ

### Нутқ мавзулари:

- ✓ **Таълим мавзуси** (ўқув муассасаси, ўқув қуроллари ва унга муносабат, ихтисослик фанларининг ҳозирда ўқитилиши ва ҳоказо)
- ✓ **Ижтимоий маданий** (Ўзбекистон Республикаси ва тили ўрганилаётган мамлакатнинг тарихий, географик, иқлимий, маданий, маиший хусусиятлари).
- ✓ **Касбга йўналтирилган мавзу** (ўрганилаётган ихтисослик тарихи, йўналишлари, соҳанинг буюк намоёндалари, долзарб муаммолари, касбий этика ва ҳоказо).

### “Хорижий (инглиз) тил” фани бўйича амалий машғулотларнинг мавзулар ва соатлар бўйича тақсимланиши:

№	Мавзулар номи	Ажратилган соат		
		Жами	Амалий	Мустақ. таълим
VII- семестр				
1.	Таълим мавзуси (ўқув муассасаси, ўқув куруллари ва	36	20	16

	унга муносабат, ихтисослик фанларининг ҳозирда ўқитилиши ва ҳоказо) ва <b>Ижтимоий маданий</b> (Ўзбекистон Республикаси ва тили ўрганилаётган мамлакатнинг тарихий, географик, иқлимий, маданий, маиший хусусиятлари)			
<b>VIII- семестр</b>				
2.	<b>Касбга йўналтирилган мавзу</b> (ўрганилаётган ихтисослик тарихи, йўналишлари, соҳанинг буюк намоёндалари, долзарб муаммолари, касбий этика ва ҳоказо)	38	22	16
	<b>Жами</b>	<b>74</b>	<b>42</b>	<b>32</b>

### **Амалий машғулот бўйича кўрсатма ва тавсиялар**

Амалий машғулот учун қуйидаги мавзулар тавсия этилади:

1. Ўрганилаётган ихтисослик тарихи;
2. Ўрганилаётган ихтисослик йўналишлари;
3. Ўрганилаётган соҳанинг буюк намоёндалари;
4. Ўрганилаётган соҳанинг долзарб муаммолари;
5. Касбий этика;
6. Ихтисослик фанларининг ҳозирда ўқитилиши;
7. Ихтисосликка оид матнлар, атамалар тушунчаларни ўқитилиши ва таржима қилиш масалалари;
8. Ихтисослик бўйича чет эл тажрибасини ўрганиш, илмий адабиётларни шархлай олиш малакасини шакллантириш;
9. Ихтисосликка оид мавзуда тақдимот тайёрлаш ва уни тақдим қилиш малакасини шакллантириш;
10. Ихтисослик бўйича илмий мақола ва унга аннотация тайёрлаш.

### **“Амалий инглиз тили” фани бўйича амалий машғулотларнинг календар тематик режаси (VII-семестр)**

<b>№</b>	<b>Амалий машғулотлар мавзулари</b>	<b>Соат</b>
<b>1.1</b>	<b>Lesson 1</b> History of the specialty studied	4
<b>1.2</b>	<b>Lesson 2</b> Areas of specialization studied	4
<b>1.3</b>	<b>Lesson 3</b> Great representatives of the studied area	4
<b>1.4</b>	<b>Lesson 4</b> Actual problems of the studied area	4
<b>1.5</b>	<b>Lesson 5</b> Professional ethics	4

	<b>Жами:</b>	<b>20</b>
<b>(VIII-семестр)</b>		
<b>№</b>	<b>Амалий машғулотлар мавзулари</b>	<b>Соат</b>
2.1	<b>Lesson 1</b> Relative disciplines to mathematics	2
2.2	<b>Lesson 2</b> Issues of teaching and interpreting texts, terms and definitions of specialization	4
2.3	<b>Lesson 3</b> Currently being taught of special subjects	4
2.4	<b>Lesson 4</b> Studying of foreign experience in the specialty, formation of the ability to interpret scientific literature	4
2.5	<b>Lesson 5</b> Preparation of presentations on specialization and formation of skills of presentation	4
2.6	<b>Lesson 6</b> Preparation of an article and annotation for the specialty	4
	<b>Жами:</b>	<b>22</b>

### Умумий босқич Нутқ компетенцияси

Босқичнинг асосий мақсади:

- ✓ узлуксиз таълим тизимининг аввалги босқичлари (академик лицей ва касб-хунар коллежлари)да талабалар хорижий тилда эгаллаган малака ва кўникмаларини коррекция қилиш ва тенглаштириш;
- ✓ талабаларни нутқ фаолияти турлари бўйича касбий мулоқотга тайёрлашдан иборат;

**Тинглаб тушуниш:**

- ✓ маъруза, тақдимот ва мунозаралар, радио ва телевидение эшиттиришлари, янгиликлар, интервьюлар, ҳужжатли фильм ва шу каби оғзаки матнлар;
- ✓ реклама ва эълонлар;
- ✓ тил соҳиблари нутқ ёзувлари (бадий, ҳужжатли фильмлар, оммавий чиқиш ва ҳоказо);
- ✓ тил соҳибларининг ижтимоий мавзулардаги ўзаро суҳбати;
- ✓ тингланган ахборотнинг асосий мақсади, тўлиқ мазмунини тинглаб тушуниш малака ва кўникмаларини ривожлантириш.

**Гапириш:**

**Диалог нутқ**

- ✓ ижтимоий мавзуларда суҳбат ва норасмий диалог;
- ✓ касбий ёки бошқа мавзуларда расмий ва норасмий мунозаралар;



- ✓ мунозарани бошқариш, интервью, музокаралар ва телефон орқали мулоқот олиб бориш.

### **Монолог нутқ**

- ✓ ихтисосликка оид мавзуларда маъруза тайёрлаш ва ўқиш;
- ✓ мунозара, далил ва исботларни олға суриш, фикрни асослаб бериш;
- ✓ реклама ва махсус мавзуларда тақдимот тайёрлаш ҳамда чиқиш қилиш;
- ✓ маълумотларни умумлаштириш, мақолалар ёзиш, муҳокама қилиш.

### **Ўқиш**

- ✓ танишув ўқиш, кўз югуртириб ўқиш ва синчиклаб ўқиш кўникма ва малакаларини ривожлантириш;
- ✓ хат-хабар, ёзишмалар ва электрон почтани ўқиш;
- ✓ махсус материалларни ўзида акс эттирган аутентик матнларни ўқиш;
- ✓ махсус сўз ва терминларга эга матнларни, илмий ва касбга оид адабиётларни, электрон манбалар ва матбуот материалларини ўқиш.

### **Ёзма нутқ**

- ✓ турли ёзишмалар, хат-хабарлар ва махсус докладлар (эслатма CVs ва ҳоказо) ёзиш;
- ✓ эссе, баён, резюме, тадқиқот иши (мақолалар, битирув малакавий ишлар) ёзиш.

### **Касбга йўналтирилган босқич**

Касбга йўналтирилган босқичнинг асосий мақсади:

- ✓ нутқ турлари бўйича касбий соҳада чет тилини амалий эгаллаш;
- ✓ талабани ижодий шахс сифатида ривожлантириш;
- ✓ соҳа бўйича адабиётларни таржима қилиш малака ва кўникмаларини ривожлантириш;

### **Тинглаб тушуниш:**

- ✓ касбга йўналтирилган аутентик материалларни бир марта эшитиб асосий мазмунини тушуниш ва зарур ахборотни олиш;
- ✓ кундалик воқеалар ҳақида янгиликлар, репортажларни тушуниш, фильм қаҳрамонлари нутқини тушуниш.

### **Гапириш:**

#### **Диалогик нутқ**

- ✓ тил соҳиблари билан эркин мулоқотда бўлиш ва касбий мавзуларга ўз фикр ва мулоҳазаларини исботлаб бериш;
- ✓ суҳбатни бошлаш ва тугатишни билиш, суҳбатдошига таклиф ва маслаҳат бериш, саволларига жавоб бериш, ахборот алмашиш, муҳокама қилинаётган далилларни аниқлаштириш, ўқиган ёки эшитганларини муҳокама қилиш;
- ✓ матн асосий мазмунини ифодаловчи лексик ва синтактик қурилмаларга асосланиб гапириб бериш;

- ✓ ассоциатив тафаккурга асосланиб мулоҳаза, танқид, баҳолаш далиллар билан исботлаш орқали ўз нутқини тузиш;
- ✓ риторик характерга эга диалог нутқ малакаларини такомиллаштириш;
- ✓ касбий мулоқотлар, конференция, симпозиум, учрашув ва мунозараларда қатнашиш учун нутқ фаолияти, кўникма ва малакаларини такомиллаштириш.

#### **Монологик нутқ:**

- ✓ долзарб муаммо юзасида барча “Тарафдор” ва “Қарши” далилларни келтирган ҳолда ўз фикрини баён қилиш;
- ✓ тинглаган ва ўқиган матн мазмунини гапириш;
- ✓ мазмунга баҳо бериш;
- ✓ ўрганилган мавзулар бўйича ахборот бериш
- ✓ ўқиган матнни таҳлил қилиш ва шарҳлаш;
- ✓ ўқиган ёки тинглаган матнни қисқача мазмунини баён этиш;
- ✓ ўрганилган мавзуда чиқиш қилиш;
- ✓ ижтимоий –сиёсий матнларни ўқиб шарҳлаб бериш.

#### **Ўқиш:**

##### **Танишув ўқиш**

- ✓ матнни луғатсиз, берилган савол ёки умумий мазмунини тушуниш мақсадида ўқиш;
- ✓ матн: 10 % гача нотаниш сўз бўлган илмий-оммабоп, ижтимоий-сиёсий, махсус бадиий матнлар;
- ✓ матн мазмунини чет тилида ёки она тилида сўзлаб бериш, параграфларни номлаш, тест топшириш.

##### **Синчиклаб (ўрганиб) ўқиш**

- ✓ матнни асосий ахборотни ажратиб олган ҳолда мазмунини тўлиқ ва аниқ тушуниб ўқиш.

##### **Ўқиш тезлиги, ҳажми:**

- ✓ луғатдан фойдаланиб 1600 босма белгили матнни 1,0 академик соатда ўқиш.
- ✓ матн: махсус, илмий оммабоп 12% гача нотаниш сўзга эга бўлади.

##### **Кўз югуртириб ўқиш:**

- ✓ матн мазмуни хусусиятларини аниқлаш;
- ✓ зарур ахборотни матндан топиш;
- ✓ сўз (матн) маъно мазмунини контекст асосида фаҳмлаб олиш;
- ✓ матндаги бирламчи (асосий) иккинчи даражали ахборотни ажратиш;
- ✓ матн калит сўзларини ажрата олиш;
- ✓ матн қисмларига сарлавҳа қўйиш.

#### **Ёзма нутқ**

##### **Ёзма нутқ бўйича:**

- ✓ касбга йўналтирилган босқичда шаклланган малакаларни такомиллаштириш;
- ✓ реферат, аннотация ёзиш техникасини такомиллаштириш;

- ✓ хужжатларни расмийлаштиришни билиш (тузилиши, услуби, хужжат тили) ва у асосида хужжатларни намунага қараб, схемага кўра, клише ва фразаларни қўллаб, ахборотни ҳисобга олиб, иш юритиш вазиятлари талабларига мос равишда расмийлаштириш;
- ✓ берилган мавзуда баён, эссе, резюме тузиш, соҳага оид адабиётлар бўйича реферат ёзиш.

### **Лингвистик компетенция**

Лексик компетенция чет тилида кенг қўлланиладиган рецептив ва репродуктив актив, пассив, потенциал сўз бойлигини оширишга қаратилган бўлиб, унинг таркибига турғун сўз бирикмалари, нутқ намуналари, клише ва касбий терминлар киради. Мазкур лексик минимум тили ўрганилаётган мамлакат маданиятини ифодалайди.

Ихтисослик бўйича лексик минимум методик принциплар - кўп маънолилиқ, тематик, сўз яшаш хусусиятларини ҳисобга олиш тамойилларига кўра касбга йўналтирилган чет тили таълими асосида танлаб олинади. Санаб ўтилган тамойилларга кўра лексик минимум 2 турдан иборат:

- а) умумтаълимий;
- б) касбий лексика

Қуйидаги жадвалда таклиф этилаётган лексик минимум курслар бўйича тақсимлаб берилган:

<b>Курс</b>	<b>Умумтаълимий минимум</b>		<b>Касбий лексика</b>	<b>Жами</b>
	<b>Актив*</b>	<b>Пассив**</b>	<b>Актив</b>	
1	350	700	100	800
2	350	500	150	800
3	150	500	200	700
4	150	500	200	700
<b>Жами</b>	<b>1000</b>	<b>2200</b>	<b>650</b>	<b>3000</b>

\* Минимумда олдинги босқичда ўрганилган лексика сони кўрсатилмаган.

\* Пассив лексикага актив лексика ҳам киради.

### **Нутқ фаолияти турлари устида ишлаш учун вақтни тўғри тақсимлаш**

Қўйилган мақсадларга эришиш учун ҳар бир дарсда нутқ фаолияти турлари қуйидаги нисбатда бўлиши мақсадга мувофиқ:

тинглаб тушуниш - 25% ;

гапириш - 25%;

ўқиш – 30%;

ёзув – 20% .

### **Талабалар билимини назорат қилиш**

Талабаларнинг чет тили бўйича эгаллаган билим, малака ва кўникмалари жорий, оралиқ ва якуний назоратлар орқали назорат қилинади.

Жорий назорат: ҳар бир дарсда алоҳида талаба билан ишлаб уларнинг дарсга тайёргарлик даражаси савол-жавоб орқали текширилиб, кундалик баллар қўйиб борилади.

Оралиқ назорат: кафедранинг фан бўйича ишчи дастурига асосланган ҳолда, ҳар бир семестрга қўйилган талаблар асосида бир қанча дарслар ўтилганидан кейин ўтказилади. Натижаларни дастурда берилган талаблар билан қиёслаш орқали талабаларнинг малака ва кўникмалари қанчалик ўсганлиги аниқлаб борилади.

Якуний назорат: фан бўйича бакалавриат курсининг якунида ўтказилади. Якуний назорат ўтказилиши натижасида дастур талаблари бўйича касбий чет тили компетенцияси аниқлаб олинади.

### **Якуний назорат мазмуни**

#### **1. Тинглаб тушуниш бўйича:**

Касбга йуналтирилган матнни тинглаш ва уни тушунганлигини аниқлаш мақсадида тестлар ечиш.

#### **2. Гапириш бўйича:**

Касбга йуналтирилган мавзу бўйича батафсил, синчиклаб, аргументлар билан бойитган ҳолда ўз фикрини баён этиш.

#### **3. Ўқиш бўйича:**

Касбий йўналишдаги матнни ўқиб, тушунганлиги асосида тест топшириқларини ечиш. Ўқиган матн мазмунини аниқ ва тўлиқ тушунганлигини текширишни ёзма таржима билан амалга ошириш мумкин. Бунда луғатдан фойдаланишга рухсат берилади.

#### **4. Ёзув бўйича:**

Соҳанинг долзарб муаммоларига бағишланган эссе ёзиш.

### **Лаборатория ишларини ташкил этиш бўйича кўрсатмалар**

Фан бўйича лаборатория ишлари намунавий ўқув режада кўзда тутилмаган

#### **Курс ишини ташкил этиш бўйича услубий кўрсатмалар**

Фан бўйича курс иши намунавий ўқув режада режалаштирилмаган

#### **Мустақил таълимни ташкил этишнинг шакли ва мазмуни**

Чет тили фанидан мустақил ишларининг мақсади - талабаларнинг касбий коммуникатив фаолиятини шакллантириш ва ривожлантириш, уларнинг ижодий фаолиятини ўстириш, ва чет тили устида мустақил ишлай олиш малака ва кўникмаларини ҳосил қилиш ва ривожлантиришдан иборат. Ушбу умумий мақсадга эришиш учун қуйидаги бир неча вазифаларни бажариш назарда тутилади:

- талабаларнинг тил тайёргарлик сифатини ошириб бориш, тил ва мутахассислик бўйича адабиётлар устида ишлай олиш кўникмаларини шакллантириш ва ривожлантириш;

- ўз касбий билим ва малакаларини кейинчалик мустақил тўлдириб ва янгилаб туриш эҳтиёжларини яратиш ва сақлаб қолиш, чет тили бўйича яратилган малака ва кўникмаларни ўстириб, ривожлантириб бориш;
- талаба бажариши керак бўлган ишларни тўғри ташкил қилиш, келиб чиқадиган қийинчиликларни олдиндан била олиш, ҳис этиш ва уларни бартараф қилиш йўллари топа олиш.

#### VII-семестр 16 соат

№	Theme	Hours
1.	Profession skills.	4
2.	Life and creativity of famous people in the studied science.	6
3.	News of the learning science.	6

#### VIII-семестр 16 соат

№	Theme	Hours
1.	Working on the text “Professionalism and speciality”.	8
2.	Actual problems on speciality.	8

#### Тавсия этилаётган мустақил ишларнинг мазмуни

Талабаларнинг мустақил ишлари нутқ фаолиятининг қуйидаги турлари бўйича ташкил қилинади.

**Ўқиш:** (танишиб чиқиш, синчиклаб, қараб чиқиш), ёзув, тинглаб тушуниш ва гапириш;

Тинглаб тушуниш: ҳажми турлича бўлган аудио- ва видео матнларни тинглаб тушуниш, саволларга жавоб бериш, гапириб бериш, аннотация ёза олиш;

**Гапириш:** талабаларнинг диалогик ва монологик нутқлари бўйича мустақил ишлари аудиторияда ўргатилган матнлар, ўқув материаллари асосида ташкил қилинади. Гапириш бўйича мустақил иш сифатида мавзу асосида маълумот тайёрлаш, матн мазмунини гапириб бериш, ўрганилган лексик материаллар асосида ҳикоялар тузиш, берилган муаммоли масала ва вазиятларни муҳокама қилиш каби топшириқлар бериш мумкин. Гапириш кўникмаларини ривожлантириб бориш учун мультимедиа дастурларини ва он-лайн технологияларини қўллашга асосий эътибор қаратилади;

**Ўқиш:** талаба ўрганаётган соҳасига оид адабиётлар билан танишиб чиқиши ва ўзи учун қизиқарли ва керакли бўлган ахборотни тушуниши, публицистик, илмий-оммабоп ижтимоий-сиёсий адабиётларни ўқиши ва керакли ахборотни олиши лозим. Машғулотларда юқорида айtilган малака ва кўникмаларни шакллантириш ва ўстириш жуда мураккаб бўлганлиги учун уларни мустақил иш жараёнида синчиклаб, кўз югуртириб, қараб чиқиб ўқиш турлари орқали ташкил қилинади. Ушбу ўқиш турларини назорат қилиш-матнни бутунлай таржима қилиш ёки унинг танлаб олинган қисмларини таржима қилиш билан амалга оширилади.

Танишиб чиқиб ўқиш мустақил иш тури сифатида уйда ўқиш шаклида олиб борилади. Ўқишнинг бу тури учун аутентик ёки адаптация қилинган адабий, илмий-оммабоп адабиёт танлаб олинади. Текшириш шакллари:

ўқиганини мазмунини тушунганлиги бўйича савол-жавоб ишлари, ажратиб олинган масалалар бўйича ахборот олиш, бахс-мунозаралар ўтказиш, ахборотга режа тузиш ва ҳ.к.

Қараб чиқиб, кидириб топиш учун ўқиш. Ўқишнинг бу турида оммавий-сиёсий, публицистик матнлар, газета ва журнал материаллари берилади ва ҳар бир дарсда қисқача ахборот олинади. Талаба битта газета мақолалари асосида ахборот беради ёки мавзу бўйича бир қанча газета ва журналлардан ахборот тайёрлайди.

Ёзув. Ёзув бўйича мустақил иш ўз ичига ўрганилаётган тилда фикрни баён қила олиш ишларини олади. Бунда мустақил иш мазмунига қуйидагилар киради:

- аннотация, реферат, резюмелар туза олиш;
- оғзаки равишда нутқ ҳосил қилиш учун режа ёки тезис тузиш;
- турли хатлар, табрикнома, таклифлар, иш юзасидан хатлар туза олиш;
- ўқишга ва ишга қабул юзасидан аризалар ёза олиш;
- соҳага оид турли ҳужжатларни тўлдириш;
- баён, иншо, эсселар ёза олиш; касби бўйича иш юритиш ишларини (ёзувларини) олиб бориш.

Ўқиб таржима қилинган материаллар курс ишлари ва рефератларда қўлланилади.

#### **Дастурнинг инфор­мацион – методик таъминоти**

Чет тили фанини ўқитиш жараёнида таълимнинг замонавий интерфаол усуллари­дан, педагогик ва ахборот-коммуникация технологияларидан кенг фойдаланилади. Амалий машғулотларда ақлий ҳужум, кластер, блиц-сўров, кичик гуруҳларда ишлаш, инсерт, презентация, кейс стади каби усулларнинг мавзуга мос танланиши ва қўлланилиши дарс самарасини оширишга катта ҳисса қўшади.

#### **Талабанинг Амалий инглиз тили фани бўйича ўзлаштириш кўрсаткичи қуйидаги мезонлар асосида баҳоланади**

##### **Рейтинг тизими асосида баҳолаш мезони**

<b>Фаннинг номи</b>	<b>Рейтинг назорати</b>									
	<b>Жорий назорат</b>			<b>Умумий</b>	<b>Мустақил таълим Оралиқ назорат</b>			<b>Умумий</b>	<b>ЯН</b>	<b>Умумий</b>
	<i>Сони</i>	<i>Балл</i>	<i>Жами</i>		<i>Сони</i>	<i>Балл</i>	<i>Жами</i>		<i>Ёзма</i>	<i>Жами</i>
<b>Ҳорижий тил</b>	1	60	60	60	1	10	10	10	30	100

**Талабалар ЖН дан тўплайдиган балларнинг мезонлари**

№	Кўрсаткичлар	Жорий назорат баллари	
		Максимал	Ўзгариш оралиғи
1	Дарсларга қатнашганлик ва ўзлаштириш даражаси. Амалий машғулотлардаги фаоллиги, амалий машғулот дафтарларининг юритилиши ва ҳолати	20	0-20
2	Вазифа топшириқларининг ўз вақтида ва сифатли бажарилиши. Мавзулар бўйича уй вазифаларини бажарилиш ва ўзлаштириш даражаси.	20	0-20
3	Оғзаки ўтилган мавзулар юзасидан саволларга жавоб.	20	0-20
<b>Жами ЖН баллари</b>		<b>60</b>	<b>0-60</b>

**Талабалар ОН дан тўплайдиган балларнинг мезонлари**

№	Кўрсаткичлар	Оралиқ назорат баллари	
		Максимал	Ўзгариш оралиғи
1	Талабаларнинг мустақил таълим топшириқларини ўз вақтида сифатли бажариши ва ўзлаштириш.	6	0-6
2	Тайёрлаган топшириқни тақдимот қилиш.	2	0-2
3	Берилган саволларга жавоб бериш.	2	0-2
<b>Жами ОН баллари</b>		<b>10</b>	<b>0-10</b>

**Талабалар ЯН дан тўплайдиган балларнинг мезонлари**

№	Кўрсаткичлар	Оралиқ назорат баллари	
		Максимал	Ўзгариш оралиғи
1	Грамматик кўникмаларни текшириш.	10	0-10
2	Ёзув кўникмаларини текшириш.	10	0-10
3	Берилган саволларга жавоб бериш.	10	0-10
<b>Жами ОН баллари</b>		<b>30</b>	<b>0-30</b>

## Умумий кўрсаткич:

Балл	Баҳо	Талабаларнинг билим даражаси
86-100 балл учун талабанинг билим даражаси куйидагиларга жавоб бериши лозим	Аъло	<ul style="list-style-type: none"> <li>✓ Янги мавзуни Инглиз тилида тушунтириш ва мазмунини оғзаки еркин баён қила олиш;</li> <li>✓ Инглиз тилида ижодий фикрлай олиш;</li> <li>✓ Инглиз тилида мустақил мушоҳада қила олиш;</li> <li>✓ Инглиз тилида оғзаки ахборот бера олиш;</li> <li>✓ Луғат ёрдамида таржима қила олиш;</li> <li>✓ Олган билимларни амалда қўллай олиш;</li> </ul>
71-85 балл учун талабанинг билим даражаси куйидагиларга жавоб бериши лозим	Яхши	<ul style="list-style-type: none"> <li>✓ Тил ўрганилаётган мамлакат тилида ўз фикрини тушунтира билиш;</li> <li>✓ Мустақил мушоҳада юрита олиш;</li> <li>✓ Тасаввурга ега бўлиш;</li> <li>✓ Луғат ёрдамида таржима қила олиш;</li> <li>✓ Матн мазмунини қисқача тушунтира олиш;</li> </ul>
55-70 балл учун талабанинг билим даражаси куйидагиларга жавоб бериши лозим	Қониқарли	<ul style="list-style-type: none"> <li>✓ Билиш, янги мавзуни қисман айтиб бериш;</li> <li>✓ Мавзуни қисман тушуна билиш.</li> <li>✓ Мавзу ҳақида тушунчага ега бўлиш.</li> </ul>
0-54 балл билан талабанинг билим даражаси куйидаги ҳолатларда баҳоланади	Қониқарсиз	<ul style="list-style-type: none"> <li>✓ Ўқий олмаслик;</li> <li>✓ Гапира олмаслик;</li> <li>✓ Тасаввурга ега бўлмаслик;</li> <li>✓ Билмаслик.</li> </ul>

Фан бўйича саралаш бали 55 баллни ташкил этади. Талабанинг саралаш балидан паст бўлган ўзлаштириши рейтинг дафтарчасида қайд етилмайди.

Жорий **ЖН** ва оралиқ **ОН** турлари бўйича 55 балл ва ундан юқори баллни тўплаган талаба фанни ўзлаштирган деб ҳисобланади ва ушбу фан бўйича якуний назоратга кирмаслигига йўл қўйилади.

Талабанинг семестр давомида фан бўйича тўплаган умумий балли ҳар бир назорат туридан белгиланган қоидаларга мувофиқ тўплаган баллари йиғиндисига тенг.

**ОН** ва **ЯН** турлари календар тематик режага мувофиқ деканат томонидан тузилган рейтинг назорат жадваллари асосида ўтказилади. **ЯН** семестрнинг охириги 2 ҳафтаси мобайнида ўтказилади.

**ЖН** ва **ОН** назоратларда саралаш балидан кам балл тўплаган ва узрли сабабларга кўра назоратларда қатнаша олмаган талабага қайта топшириш



учун, навбатдаги шу назорат туригача, сўнгги жорий ва оралик назоратлар учун еса якуний назоратгача бўлган муддат берилади. Талабанинг семестрда **ЖН** ва **ОН** турлари бўйича тўплаган баллари ушбу назорат турлари умумий балининг 55 фоизидан кам бўлса ёки семестр якуний жорий, оралик ва якуний назорат турлари бўйича тўплаган баллари йиғиндиси 55 балдан кам бўлса, у академик қарздор деб ҳисобланади. Талаба назорат натижаларидан норози бўлса, фан бўйича назорат тури натижалари еълон қилинган вақтдан бошлаб бир кун мобайнида факултет деканига ариза билан мурожаат етиши мумкин. Бундай ҳолда факултет деканининг тақдимномасига кўра ректор буйруғи билан 3 (уч) аъзодан кам бўлмаган таркибда апелляция комиссияси ташкил етилади.

Апелляция комиссияси талабаларнинг аризаларини кўриб чиқиб, шу куннинг ўзида ҳулосасини билдиради. Баҳолашнинг ўрнатилган талаблар асосида белгиланган муддатларда ўтказилиши ҳамда расмийлаштирилиши факултет декани, кафедра мудури, ўқув-услугий бошқарма ҳамда ички назорат ва мониторинг бўлими томонидан назорат қилинади.

**Якуний назорат** ёзма шаклда ўтказилади.

Якуний назорат максимал 30 баллик тизимда ўтказилади.

### **Фойдаланиладиган адабиётлар рўйхати**

#### **Асосий адабиётлар**

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#### **Кўшимча адабиётлар**

1. Агамова З.И. Турдиева С.Х. Физика факультети бакалавриат талабалари учун инглиз тилидан матнлар тўплами. НУЎЗ. Т. 2007
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4. Артикова Ю.А. Numerals and mathematical symbols. НУЎЗ. Т. 2013
5. Саттарова З.Б. Методическая разработка по английскому языку на тему «Экология». НУЎЗ. Т. 2003
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7. Х.Аловитдинова., Д. Раджабова ва б. English for esl and esp learners. Т. 2012

### **Интернет сайтлари**

<http://www.adu.uz>

<http://www.ziyonet.uz>

<http://www.teachingenglish.org.uk/>

<http://www.inspiringteachers.com/>

<http://teachnet.org/ntpi/research/prep/Cooper/http://www.alt-teachercert.org/Mentoring.html>

[www.examenglish.com](http://www.examenglish.com)

<http://www.edufle.net>

МИНИСТЕРСТВО ВЫСШЕГО И СРЕДНЕГО СПЕЦИАЛЬНОГО  
ОБРАЗОВАНИЯ РЕСПУБЛИКИ УЗБЕКИСТАН  
АНДИЖАНСКИЙ ГОСУДАРСТВЕННЫЙ УНИВЕРСИТЕТ

"УТВЕРЖДАЮ"

Проректор по учебной работе,

К.б.н., доцент Ш.Маматосупов

2019 год



ПРАКТИЧЕСКИЙ АНГЛИСКИЙ ЯЗЫК  
РАБОЧАЯ УЧЕБНАЯ ПРОГРАММА  
(для 4 курса)

Область знаний: - 100000- Гуманитарная сфера

Область образование: - 130000 - Математика

Направление образование: - 5130100 – Математика

Всего часов - 74

В том числе:

Практические-42

(7-семестр-20, 8-семестр-22)

Самообразование- 32

(7-семестр-16, 8-семестр-16)

Андижан - 2019

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- Преподаватель межфакультетских языков

- Заведующий межфакультетской кафедрой иностранных языков (точные и естественные науки)

- Преподаватель мефакультетской кафедры иностранных языков (точные и естественные науки)

\* Преподаватель межкафедретской кафедры иностранных языков (точные и естественные науки)

- Преподаватель межфакультетской кафедры иностранных языков (точные и естественные науки)

Докцент кафедры английского языка и литературы,  
к.п.н.

Заведующий кафедрой фонетики английского  
языка, к.ф.н. 

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610011

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collared

## **1. Актуальность и место изучаемого предмета в высших учебных заведениях.**

Обучение иностранному языку студентов неязыковых специальностей рассматривается как составная часть вузовской программы гуманитаризации высшего образования, как органическая часть процесса осуществления подготовки высококвалифицированных специалистов, активно владеющих иностранным языком как средством межкультурной и межнациональной коммуникации, как в сферах профессиональных интересов, так и в ситуациях социального общения.

## **2. Цели и задачи изучаемого предмета**

Цель обучения иностранному языку- обучать иностранному языку как средству межкультурной коммуникации, формировать личность, вобравшую в себя ценности родной и иноязычной культур и готовую к межнациональному общению во всех сферах жизни, находит свое отражение в определении новых целей и подходов в обучении иностранному языку в неязыковом вузе.

### **Задачи:**

- Развитие речевой компетенции;
- обеспечить активное владение иностранным языком как средством «формирования и формулирования мыслей» в социально обусловленных и профессионально ориентированных сферах общения.
- Научить работать с новейшими технологиями, открытиями и тенденциями в развитии науки и техники на иностранном языке;
- Обучить владению иностранным языком как средством «формирования и формулирования мыслей» в социально обусловленных и профессионально ориентированных сферах общения
- переориентировать студентов в психологическом плане на понимание иностранного языка как внешнего источника информации и иноязычного средства коммуникации, на усвоение и использование иностранного языка для выражения собственных высказываний и понимания других людей;

## **III. Основная часть(практические занятия)**

Умение простым языком представить людей или описать условия жизни и работы, повседневные занятия, то, что нравится и что не нравится, и т.д. в виде ряда коротких простых фраз и предложений в форме перечня; вести беседу на тему окружающей среды, социально-бытовые вопросы; умение высказать собственное мнение об образовании, учебных заведениях и т.д ; исторические, географические, климатические, социально- культурные сведения об Республике Узбекистан , а также стране изучаемого языка.

### **3.1 Речевая компетенция**

Обобщить полученное в школе умение и навыки чтения на расширенном языковом материале с целью подготовки студентов к различным видам чтения. Научить студентов формулировать мысли на иностранном языке в вопросно-ответной форме и монологических формах речи с привлечением элементов профессионально ориентированного регистра речи.

#### **Аудирование:**

Умение понимать основное содержание беседы на знакомую тему, связанную с работой, образованием, отдыхом ; рекламы и новостей; художественных и документальных фильмов; осуществляемой посредством четкого стандартного языка.

#### **Говорение:**

Диалогическая речь: умение вести беседу на социальные и профессиональные темы; интервью и обсуждения, телефонный разговор.

Монологическая речь: подготовка речи и презентации к докладам по специальности, умения предоставлять аргументы и факты; написание тезисов и научных статей

#### **Чтение:**

Умение работать с письмами, электронной почтой, средствами массовой информации

#### **Письмо:**

Уметь заполнить подробную анкету о себе; написать открытки различных функциональных типов; статьи профессионально-ориентированного содержания, сочинения

### **3.2 Профессиональное направление:**

#### **Чтение**

1. Умение понимать повседневную информацию и статьи по текущим вопросам, а также общее значение новой информации, входящей в знакомую сферу.

2. Умение понимать практически без затруднений любые тексты, содержащие трудные слова и грамматические конструкции (руководства, специализированные статьи).

3. Умение понимать специальные язык в статьях и технических инструкциях, даже если эти тексты выходят за рамки профессиональной деятельности читающего.

4. Умение читать достаточно бегло, чтобы справиться с учебным курсом, читать публикации в средствах массовой информации для получения сведений и понимать не стандартную переписку. 5. Умение понимать документы, корреспонденцию и доклады, включая тонкие нюансы сложных текстов.

#### **Говорение Монологическая речь**

1. Умение давать четкие, подробные описания по широкому кругу интересующих его вопросов, развивая отдельные мысли и подкрепляя их дополнительными положениями и примерами.

2. Умение давать четкие подробные описания и делать доклады на сложные профессиональные темы, углубляясь в подтемы, развивая отдельные положения и заканчивая подходящим выводом. 3. Умение пояснить свою точку зрения по актуальному вопросу, указывая на плюсы и минусы различных вариантов.

4. Умение привести ряд обоснованных доводов.

5. Умение разворачивать четкую систему аргументации, развивая и подкрепляя свою точку зрения достаточно развернутыми утверждениями и примерами.

### **Диалогическая речь**

1. Умение вести диалог довольно бегло и без подготовки, что позволяет регулярно и подолгу общаться с носителями языка без особых трудностей для обеих сторон.

2. Умение бегло, точно и эффективно говорить на разнообразные темы: общие, учебные, профессиональные.

3. Умение выбрать наиболее адекватное из имеющихся в его распоряжении средств языка для общения в нетипичных, трудных ситуациях.

4. Умение переключаться на другой регистр общения, гибко реагировать на изменения в теме, направленности, тоне разговора, при необходимости перефразировать высказывание.

5. Соблюдение правил речевого этикета в ситуациях научного диалогического общения.

### **Аудирование**

1. Умение без труда следить за ходом сложных диалогов, которые ведутся третьей стороной в процессе группового обсуждения/дискуссии даже по абстрактной, незнакомой тематике.

2. Умение понимать основные положения по смысловому наполнению речи на конкретные или абстрактные темы, произносимые на нормативном языке, включая технические обсуждения по темам, находящимся в рамках сферы деятельности.

3. Умение понимать основные положения лекций, бесед, докладов и других видов тематически сложных выступлений, касающихся профессиональной деятельности.

4. Умение извлекать конкретную информацию из объявлений в общественных местах, например, на вокзале, на стадионе и др., несмотря на

плохую слышимость и помехи. Умение понимать сложную техническую информацию, к примеру, правила эксплуатации, технические условия.

### **Письмо**

1. Умение написать отзыв о статье, тезисы на конференцию.

2. Умение писать четкие тексты (доклады), подробно освещающие разнообразные интересующие студента вопросы, синтезируя и оценивая информацию и аргументы, поступающие из нескольких источников.

3. Умение синтезировать информацию и аргументы из нескольких источников.

4. Умение написать эссе или доклад, в котором доказательства разворачиваются системно, важные моменты подчеркиваются и приводятся детали, подкрепляющие излагаемую точку зрения.

### **3.3 Грамматическая компетенция**

Активный грамматический минимум:

Существительное (число и падеж), артикль; Прилагательное и его степени;

Местоимение; глагол и его формы; страдательный залог; порядок слов в предложении, вопросительные, повелительные предложения; союзные слова if, that because, when, before, as soon as, till, until;

Пассивный грамматический минимум: Образование и применение герундия, причастия.

### **Распределение тем и часов практических занятий по предмету “Практический английский язык”:**

№	Название тем	Часы		
		Итог	практические	самообразова
VII - семестр				
1.	Темы по образованию	36	20	16
VIII- семестр				
2.	Темы направленные на специальности	38	22	16
	Итог	74	42	32

### **2. Календарно- тематический план практических занятий (VII-семестр)**

№	Темы практических занятий	Часы
<b>1.1</b>	<b>Lesson 1</b>	4



	History of the specialty studied	
<b>1.2</b>	<b>Lesson 2</b> Areas of specialization studied	4
<b>1.3</b>	<b>Lesson 3</b> Great representatives of the studied area	4
<b>1.4</b>	<b>Lesson 4</b> Actual problems of the studied area	4
<b>1.5</b>	<b>Lesson 5</b> Professional ethics	4
	<b>Всего:</b>	<b>20</b>

**(VIII-семестр)**

<b>№</b>	<b>Темы практических занятий</b>	<b>Часы</b>
2.1	<b>Lesson 1</b> Relative disciplines to biology	2
2.2	<b>Lesson 2</b> Issues of teaching and interpreting texts, terms and definitions of specialization	4
2.3	<b>Lesson 3</b> Currently being taught of special subjects	4
2.4	<b>Lesson 4</b> Studying of foreign experience in the specialty, formation of the ability to interpret scientific literature	4
2.5	<b>Lesson 5</b> Preparation of presentations on specialization and formation of skills of presentation	4
2.6	<b>Lesson 6</b> Preparation of an article and annotation for the specialty	4
	<b>Всего:</b>	<b>22</b>

Практические занятия проводятся в каждой академической группе отдельно в аудиториях, оснащённых мультимедийным оборудованием. Занятия проводятся с помощью активных и интерактивных методов, используется технология. Наглядные материалы представляются при помощи ИКТ.

**3. Самообразование**  
**VII-семестр 16 часов**

<b>№</b>	<b>Theme</b>	<b>Hours</b>
1.	Profession skills.	4
2.	Life and creativity of famous people in the studied science.	6
3.	News of the learning science.	6

**VIII-семестр 16 часов**

<b>№</b>	<b>Theme</b>	<b>Hours</b>
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1.	Working on the text “Professionalism and speciality”.	8
2.	Actual problems on speciality.	8

Самообразование с использованием научной и справочной литературы позволяет формировать у студентов навыки профессионального прочтения текста, вырабатывает умение анализировать различные аспекты структуры и образной системы произведения.

В процессе выполнения самообразования вырабатываются практические умения и навыки: овладеть речью, критическим мышлением, творческими способностями, написанием.

Рекомендуемые темы самостоятельной работы и самообразования должны быть разработаны в соответствии с темами практических занятий, направлены на выработку умения анализировать и исследовать языковые факты.

Предлагаемые формы работы – реферирование и подготовка слайд-презентаций.

#### Учебная нагрузка предмета

№	Тип занятия	Выделенные часы		Итог
		7 -сем.	8 -сем.	
1.	Практические	20	22	42
2.	Самообразование	16	16	32
	<b>Итог</b>	<b>36</b>	<b>38</b>	<b>74</b>

### ПОРЯДОК ПРОВЕДЕНИЯ ВИДОВ КОНТРОЛЯ

#### 1.Порядок проведения текущего контроля:

Этот тип контроля проводится в аудитории с участием всех студентов академической группы в следующих формах:

- проверка домашних заданий;
- решение примеров и задач;
- проведение тестовых испытаний;
- проведение контрольных работ;
- устный опрос.

#### 2. Порядок проведения промежуточного контроля:

Этот тип контроля проводится в аудитории с участием всех студентов потока в следующих формах:

- устный опрос(для осеннего семестра);
- письменная работа(для весеннего семестра).

#### 3. Порядок проведения итогового контроля:

Этот вид контроля проводится в аудиториях с участием всех студентов потока и академических групп в форме письменной работы .

### Критерии оценки знаний на основе рейтинговой системы

<i>Название предмета</i>	<b>рейтинговая система</b>									
	Текущий контроль			<i>Итог</i>	Промежуточный контроль			<i>Итог</i>	<i>И.К.</i>	<i>Итог</i>
	Число	Балл	Итог		Число	Балл	Итог		Писменно	
<b>Иностранный язык</b>	<b>1</b>	<b>60</b>	<b>60</b>	<b>60</b>	<b>1</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>30</b>	<b>100</b>

**Критерии оценок (баллов) студентов на текущем контроле.**

№	Показатели	Баллы ТК	
		Максималь	ТК
1	Посещаемость занятий и уровень успеваемости. Активность на практических занятиях. Состояние тетрадей по практическим занятиям.	20	0-20
2	Своевременное и качественное выполнение самостоятельных заданий. Выполнение домашних заданий	20	0-20
3	Результаты письменных работ или текущего тестового контроля	20	0-20
<b>Всего</b>		<b>60</b>	<b>0-60</b>

**Критерии оценок (баллов) студентов на промежуточной контроле.**

№	Показатели	Баллы ПК	
		Максималь	ПК
1	Посещаемость занятий студентами. Активность на лекционных занятиях. Состояние тетрадей по лекционным занятиям.	6	0-6
2	Своевременное и качественное выполнение самостоятельных работ и уровень успеваемости	2	0-2
3	Устный опрос, коллоквиумы, и другие виды опроса	2	0-2
<b>Всего</b>		<b>10</b>	<b>0-10</b>

**Критерий оценки письменной работы в итоговом контроле**

№	Показатели	Баллы ИК	
		Максималь	ИК
1	Проверка грамматических компетенций	10	0-10
2	Проверка письменных компетенций	10	0-10
3	Ответы на составленные вопросы	10	0-10
<b>Всего</b>		<b>30</b>	<b>0-30</b>

Итоговый контроль проводится в форме письменной работы и оценивается максимально 30 баллов

### Общие показатели:

Методы оценки	Уровень знаний студентов
Критерии оценки	<p><b>• 86 - 100 баллов «отлично»</b></p> <ul style="list-style-type: none"> <li>• делать выводы и решения;</li> <li>• креативное мышление;</li> <li>• уметь самостоятельно анализировать;</li> <li>• владеть умениями применения полученных знаний;</li> <li>• знать суть темы;</li> <li>• богатое представление, воображение и мышление;</li> <li>• объяснение терминологии и понятий, связанных с курсом «Частная методика преподавания математика»;</li> <li>• решение всех задач и примеров в включенных в курс математики средней курсив общеобразовательной школы, академических лицеев;</li> </ul>
	<p><b>71 - 85 баллов "хорошо"</b></p> <ul style="list-style-type: none"> <li>• способность самостоятельного мышления;</li> <li>• уметь применять полученные знания в аудитории;</li> <li>• знать суть темы;</li> <li>• объяснение терминологии и понятий, связанных с курсом «Частная методика преподавания математики»;</li> <li>• решение всех задач и примеров включенных в курс математики средней общеобразовательной школы, академических лицеев;</li> </ul>
	<p><b>55 - 70 баллов "удовлетворительно"</b></p> <ul style="list-style-type: none"> <li>• понимание сути методических ситуаций;</li> <li>• знать суть темы;</li> <li>• объяснение терминологии и понятий, связанных с курсом «Частная методика преподавания математики»;</li> </ul>
	<p><b>0 - 54 балла "неудовлетворительно"</b></p> <ul style="list-style-type: none"> <li>• понимать суть методических ситуаций;</li> <li>• отсутствие четкого понимания курса</li> </ul>

	<p><i>«Частная методика преподавания математики»;</i></p> <ul style="list-style-type: none"> <li><i>• неспособность объяснить термины и понятия, связанные с курсом «Частная методика преподавания математики»;</i></li> </ul>
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### **Критерий оценки письменной работы в итоговом контроле**

Итоговый контроль проводится в форме письменной работы, которая состоит из 15 вариантов. Каждый вариант содержит 2 теоретических вопроса и 3 практических заданий. Теоретические вопросы составлены на основе опорных и фразов охватывающих все разделы курса.

Ответы на каждый теоретический вопрос оцениваются в диапазоне 0-6 баллов. Каждое практическое задание также оценивается в диапазоне 0-6 баллов. При этом студент может набрать максимум 30 баллов.

Чтобы определить общий уровень знаний студентов в итоговом контроле баллы полученные за каждый вопрос варианта складываются; их результат (сумма) и будет результатом итогового контроля.

## **6. Основная и дополнительная учебная литература и информационные источники**

### **Основная литература**

1. Дудкина Г.А и др. English for businessmen. 1 ким. Тошкент 2000.
2. Кудрявцева О.Е. и др. English for businessmen. 2- ким. Тошкент-2000.
3. Абдалиева Е.А. Инглиз тили дарслиги". Тошкент-2000 й
4. Бонк Н.А. Учебник английского языка. Бишкек-1997 й.
5. Саттаров Т.К. Английский для студентов-юристов (I часть). Т.ТЮИ. 2005 й.

### **Дополнительная литература**

1. Каримов И.А. Юксак маънавият энгилмас куч. - Т.: Ўзбекистон- 2008.
2. Мирзиёев Ш.М. Эркин ва фаровон, демократик Ўзбекистон давлатини биргаликда барпо этамиз. Т-2016
3. Мирзиёев Ш.М. Танқидий таҳлил қатъий тартиб интизом ва шахсий жавобгарлик - ҳар бир раҳбар фаолиятининг кундалик қондаси бўлиши керак. Т- 2016
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## V.3 TARQATMA MATERIALLAR

### Coloids

Coloids (acc. to charge)

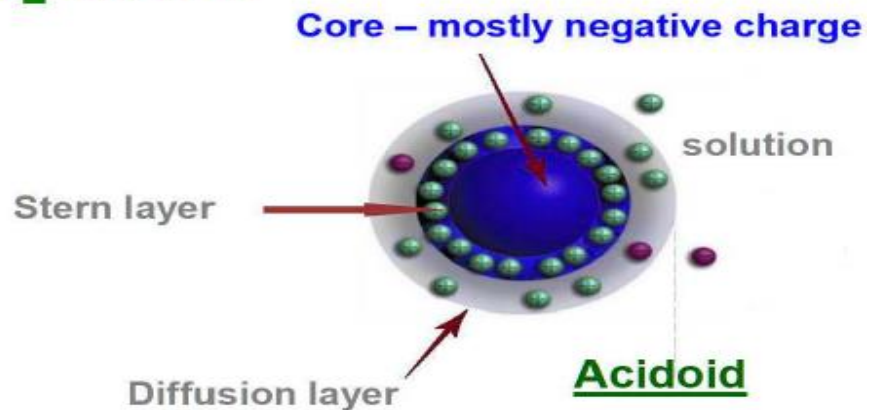
Acidoids (adsorb cations)

Bazoids (adsorb anions)

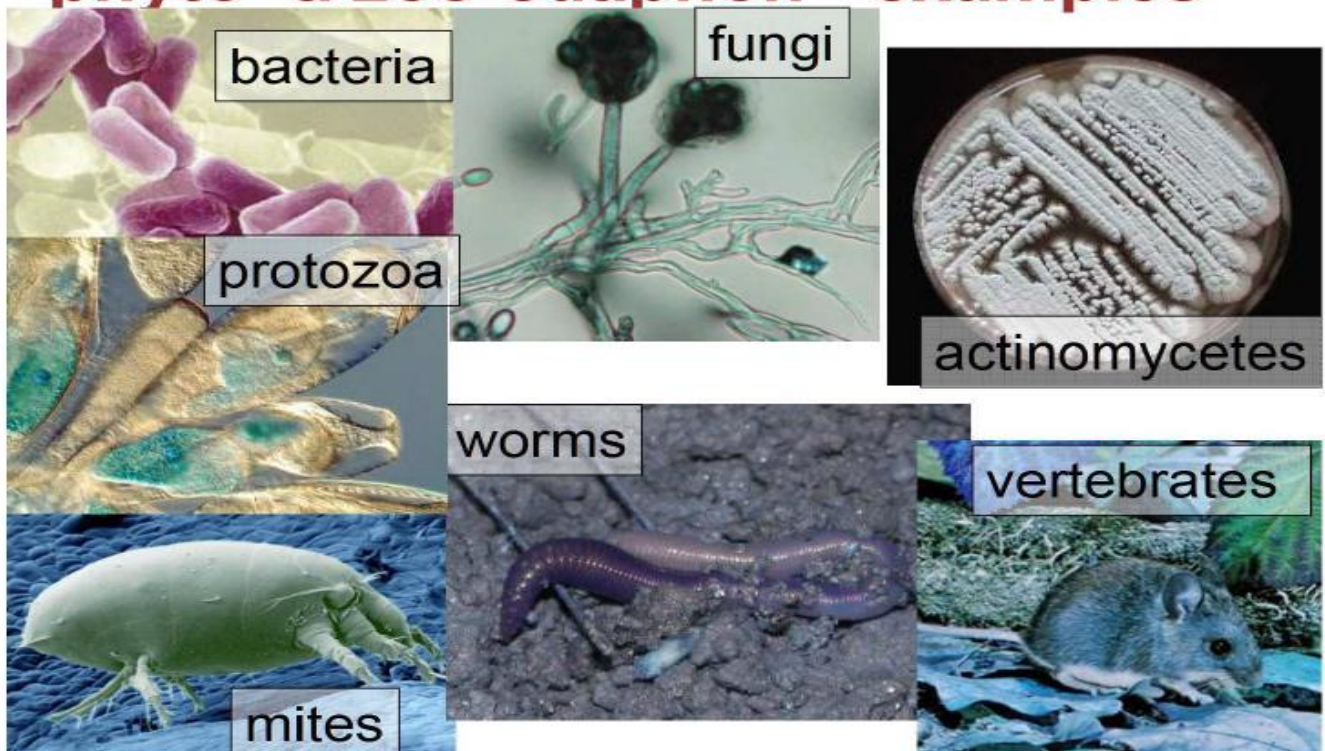
Ampholytoids (charge acc. to pH)

pH ↓ ... bazoids

pH ↑ ... acidoids



### phyto- a zoo-edaphon - examples





# Human impact on soils



- **intensive agriculture**

- ✓ fertilization
- ✓ pesticides
- ✓ toxic compounds

- **landfills**
- **urbanization**



- **desertification**
- **erosion**

- ✓ forest clear-cutting
- ✓ agriculture

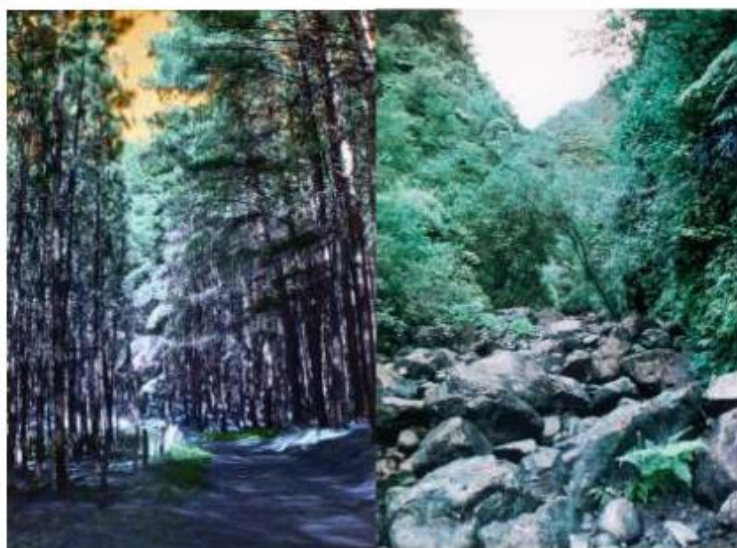


## Vegetation

natural plants, agriculture crops:  
fields, meadows, pastures, forests



trees – forests, rainforests





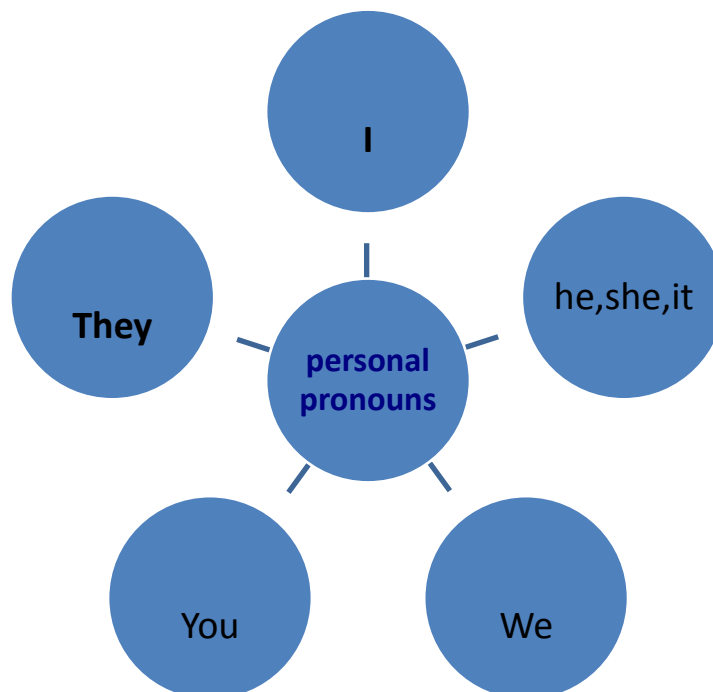
«*KLASTER*» metodi

Fikringizga nima kelsa, barchasini yozing. G'oyalar sifatini muhokama qilmang faqat ularni yozing.

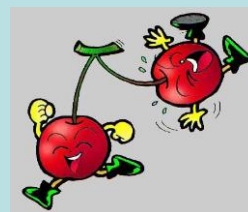
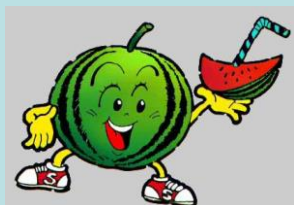


**Grammatika: Personal Pronouns –Kishilik olmoshlari**

Shaxsni bildiruvchi olmoshlar kishilik olmoshlari deyiladi. Ingliz tilida kishilik olmoshlari quyidagilar

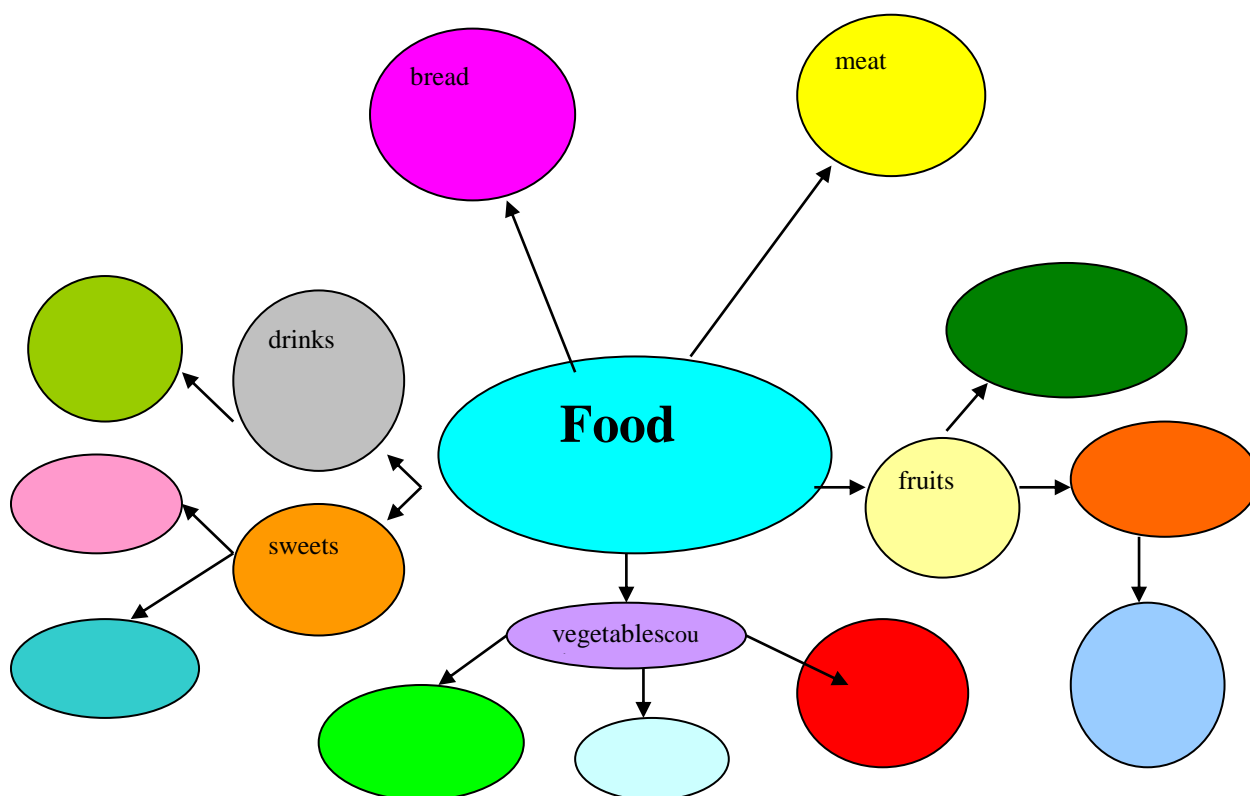


Quyidagi rasmlarning nomlarini ingliz tilida ayting va ular ishtirokida gaplar tuzing.



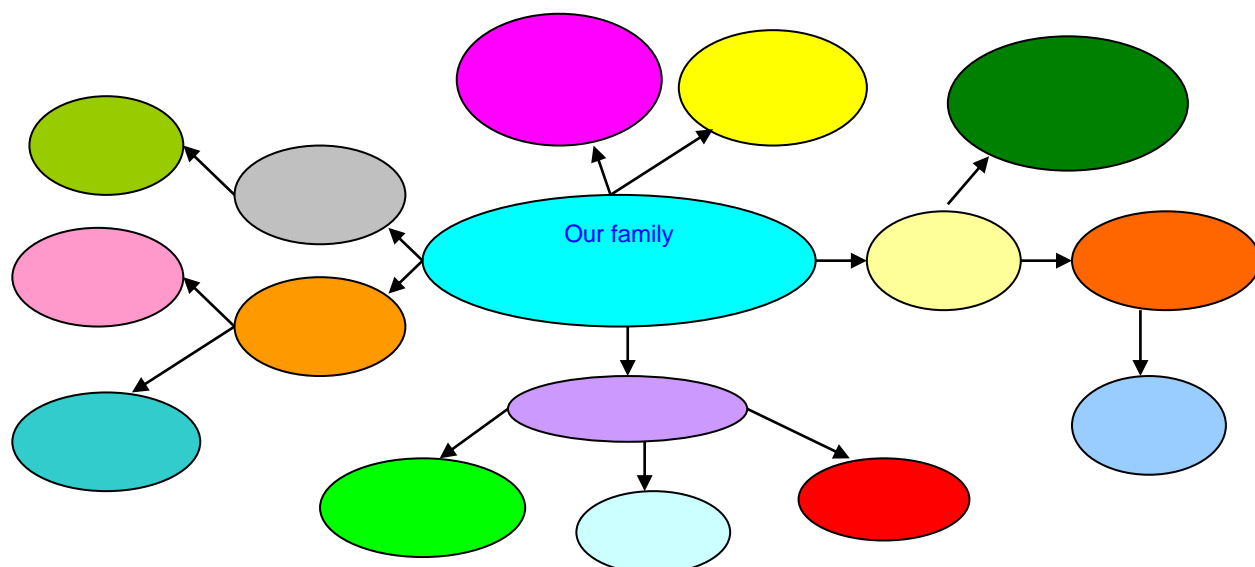
«KLAUSTER» metodi

Fikringizga nima kelsa, barchasini yozing. G'oyalari sifatini muhokama qilmang



faqat ularni yozing.

«KLASTER» metodi



**Guruhlar uchun topshiriqlar:**

Quyidagi rasm asosidagi soʻz va iboralardan foydalanib hikoya tuzing.

**I- guruh:**



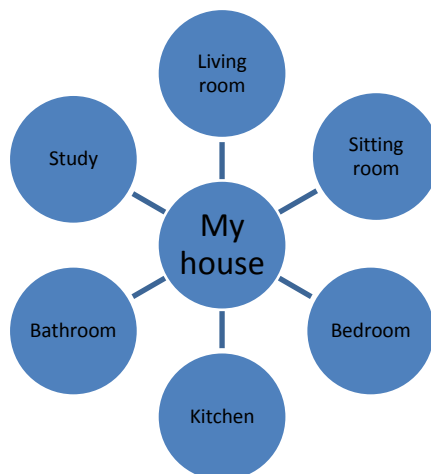
**II- guruh:**



**III- guruh:**



Fikringizga nima kelsa, barchasini yozing. Gʻoyalar sifatini muhokama qilmang faqat ularni yozing.



## Guruhlar uchun topshiriqlar.

### Guruh №1

How do you spend your day off?

### Guruh №2

How did you spend your last day off?

### Guruh №3

What are your plans for your next day off?

## Basic nomenclature

### Soil horizon designations

layers with properties different from other adjacent layers

litter layer

A (humus)

B (leached)

C (bedrock substrate)

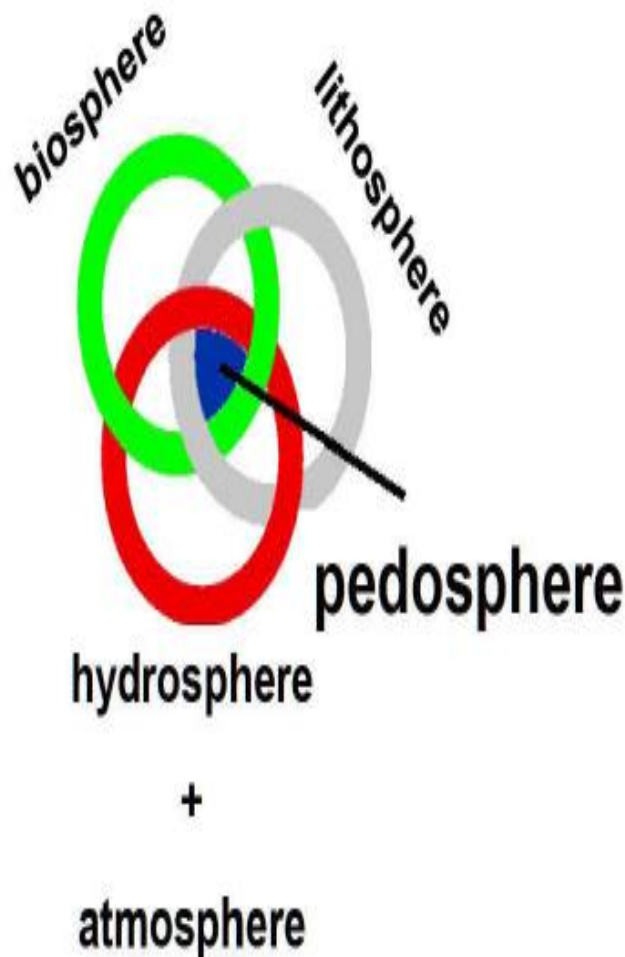
R (bedrock)



Soil profile – vertical section combining all soil horizons



# Soil – interface of systems



soil is natural unit generated  
at the **interface of**  
**lithosphere and atmosphere**  
under mutual process of  
pedogenetic factors

soil is **binding element** in  
between anorganic and  
organic matter and live  
organisms on the Earth

soil is described according to  
soil horizons

## **V.4    TESTLAR**

## 1. PRACTICE TESTS

### 1.1. GRAMMAR TESTS

#### Grammar Test 1

*Choose the best answer A, B, C or D.*

1. The universe is estimated \_\_\_\_\_ between 10 billion and 20 billion years old.  
A) being B) to be C) which is D) is
2. Genetically, the chimpanzee is more similar to human \_\_\_\_\_.  
A) and than any other animal B) than any other animal C) any other animal is D) and any other animal is
3. \_\_\_\_\_ in 1939, the Borne Bridge spans the Cape Cod Canal and is one of the many grand projects of the Depression era.  
A) Completed B) Completing C) Completes D) Being completing
4. Like the pyramid, the volume of a cone \_\_\_\_\_ by multiplying the area of the base by one third the altitude.  
A) obtain B) is obtained C) obtaining D) obtains
5. Over the past 40 years, world demand for food \_\_\_\_\_.  
A) triple B) tripled C) have tripled D) has tripled
6. The organizers would have responded positively to proposals if they \_\_\_\_\_ by 10<sup>th</sup> June.  
A) were submitted B) would be submitted C) had been submitted D) would have been submitted
7. When I finish the course next year I \_\_\_\_\_ speak perfect French.  
A) can B) will can C) was able to D) will be able to
8. You \_\_\_\_\_ to visit most museums in Britain.  
A) mustn't pay B) don't have to pay C) cannot pay D) need not have paid
9. What \_\_\_\_\_? I can't find it in the dictionary.  
A) means the word 'heliotrope' B) mean the word 'heliotrope'  
C) does the word 'heliotrope' mean D) do the word 'heliotrope' mean
10. He \_\_\_\_\_ that his mobile phone had been out of action all day.  
A) told B) said C) asked D) wanted to know
11. We asked the travel agent \_\_\_\_\_ a swimming pool at the villa.  
A) is there B) was there C) if there was D) whether there is
12. I've never heard \_\_\_\_\_ ridiculous speech.  
A) a such B) such a C) so a D) a so

## Grammar Test 2

*Choose the best answer A, B, C or D.*

1. The fact \_\_\_\_\_ money orders can usually be easily cashed has made them a popular form of payment.  
A) of B) that C) is that D) which is
2. The basic premise behind all agricultural production is \_\_\_\_\_ the riches of the soil available for human consumption.  
A) to be made B) the making C) making is D) to make
3. So many whales \_\_\_\_\_ that they are in danger of dying out.  
A) were killed B) are killed C) have killed D) have been killed
4. By the third month of the war rebel forces \_\_\_\_\_ most of the province.  
A) takes B) took C) had taken D) were taking
5. If you \_\_\_\_\_ the 'record' button, the green light will come on.  
A) will press B) would press C) press D) should press
6. The council \_\_\_\_\_ find ways of cutting costs last year.  
A) must B) had to C) will have to D) has to
7. Unfortunately, you \_\_\_\_\_ grow bananas in the British climate.  
A) may not B) can't C) must not D) ought not to
8. Who usually \_\_\_\_\_ the certificates at the graduation ceremony?  
A) does present B) do present C) presents D) present
9. The manager told us last Friday evening that he wanted us in at 8 a.m. \_\_\_\_\_ to start the Saturday sale.  
A) tomorrow B) the next day C) today D) the day before
10. The Stanford University survey asked respondents how much time \_\_\_\_\_ on the Internet.  
A) did you spend B) did they spend C) they spend D) they spent
11. Generally \_\_\_\_\_, our best business comes via our website.  
A) to speak B) speaking C) having spoken D) to have spoken
12. I have to say that the hotel wasn't quite \_\_\_\_\_ the brochure claimed.  
A) as luxurious as B) more luxurious as C) so luxurious how D) as luxurious how

## Grammar Test 3

*Choose the best answer A, B, C or D.*

1. Modern skyscrapers have a steel skeleton of beams and columns \_\_\_\_\_ a three-dimensional grid.  
A) forms B) from which forming C) and forming D) that forms
2. In the late 1970s and early 1980s, the United States developed a reusable space shuttle \_\_\_\_\_ to space cheaper and easier.  
A) to make access B) and making access C) which made accessible D) and made accessible



3. When I graduate from college next June, I \_\_\_\_\_ a student here for five years.  
A) has been B) will be C) will have been D) had been
4. No biological life was found, though it \_\_\_\_\_ by many scientists.  
A) had speculated B) have been speculating C) speculated D) had been speculated
5. If the museum had charged money for entry, a lot of people \_\_\_\_\_ able to use it at that time.  
A) would not be B) would not have been C) were not D) had not been
6. Thanks to satellite technology, we \_\_\_\_\_ now predict hurricanes quite accurately.  
A) may B) ought C) can D) must
7. If you think a piece of equipment in the gym isn't working properly and \_\_\_\_\_ mending, tell the instructor.  
A) must B) may be C) should be D) needs
8. The government has broken all its pre-election promises regarding the Health Service, \_\_\_\_\_?  
A) hasn't it B) hasn't the government C) has not it D) isn't it
9. The veterinarian told the farmer \_\_\_\_\_ the animal sleep.  
A) let B) to let C) not let D) to not let
10. Professor Jones rang from Vancouver. He said he \_\_\_\_\_ to stay another week as the research was still going on there.  
A) decides B) has decided C) had decided D) will decide
11. The Hyperlink modem is much \_\_\_\_\_ than any others in our catalogue.  
A) fastest B) the fastest C) more faster D) faster
12. \_\_\_\_\_ regularly, the engine should last for 200,000 kilometers.  
A) Serviced B) Servicing C) Service D) Having been servicing

#### **Grammar Test 4**

***Choose the best answer A, B, C or D.***

1. \_\_\_\_\_ more than 65,000 described species of protozoa of which more than half are fossils.  
A) Being that there are B) There being C) Are there D) There are
2. We are not allowed \_\_\_\_\_ any arrangements for the conference before talking to him.  
A) make B) made C) to make D) had made
3. In recent years, scientific and technological developments \_\_\_\_\_ human life on our planet.  
A) change B) have changed C) have change D) changed
4. If the form had been completed correctly, the transfer \_\_\_\_\_ only two days.  
A) would take B) will take C) took D) would have taken
5. Latecomers \_\_\_\_\_ to enter the theatre until there is a suitable break.  
A) may not B) will not may C) will not be allowed D) will not have

6. Applicants for this desk-top publishing course must have good keyboarding skills but \_\_\_\_\_ to have prior publishing experience.  
A) don't need B) must C) need D) mustn't
7. \_\_\_\_\_ does it take you to get to the university campus?  
A) How quickly B) When C) How long D) How far
8. The manager asked the staff \_\_\_\_\_ anything in the office before the police arrived.  
A) to touch B) not to touch C) to not touch D) don't touch
9. There are so many people here! But that TV programme a few weeks ago said the smaller islands of the archipelago \_\_\_\_\_ mostly uninhabited and very peaceful.  
A) are B) is C) was D) were
10. The scientists said it was one of \_\_\_\_\_ earthquakes ever.  
A) most powerful B) the most powerful C) powerfulest D) more powerful
11. \_\_\_\_\_ rich, he won't be able to afford this equipment.  
A) Being not B) Not being C) Having not been D) Not to be
12. The candidates \_\_\_\_\_ in alphabetical order.  
A) will be interviewed B) will interview C) will have been interviewed D) will have interviewed

### Grammar Test 5

*Choose the best answer A, B, C or D.*

1. The company launched an advertising campaign \_\_\_\_\_ its market share.  
A) to increase B) that increase C) that it increases D) to be increased
2. The new tax regulations are somewhat \_\_\_\_\_ last year's.  
A) rigourouser than B) more rigorous than C) more rigorous as D) as rigorous than
3. The value of the currency fell, \_\_\_\_\_ foreign holidays more expensive.  
A) having made B) making C) being made D) having been made
4. This area \_\_\_\_\_ by closed circuit cameras.  
A) is monitoring B) has been monitoring C) is being monitored D) is been monitored
5. The firm \_\_\_\_\_ company cars to junior managers since 2002.  
A) gives B) is giving C) has been giving D) has given
6. If the governments involved \_\_\_\_\_ positive action after the 1997 crisis, the current crisis would not have happened.  
A) took B) take C) have taken D) had taken
7. They finish the new motorway next month so we \_\_\_\_\_ get to the coast much more quickly.  
A) can B) will can C) will be able to D) will have to
8. You \_\_\_\_\_ have an international driving license for this country.

- A) don't have to B) must not C) has to D) must not to
9. Our CEO entered his chosen career quite late, \_\_\_\_\_?  
A) isn't it B) didn't he C) did not he D) didn't our CEO
10. The departmental manager \_\_\_\_\_ it was my fault that we had lost the Siemens contract.  
A) told B) said me C) said D) told to me
11. Does the brochure say \_\_\_\_\_ in the villas.  
A) how often is the bed linen changed B) how often the bed linen is changed  
C) how is the bed linen changed often D) how the bed linen often is changed
12. The damage was \_\_\_\_\_ severe that the pilot couldn't regain control.  
A) so B) such C) so a D) such a

### Grammar Test 6

*Choose the best answer A, B, C or D.*

1. Much of the forest \_\_\_\_\_ out in the hurricane, as you can see.  
A) has been wiped B) has wiped C) wiped D) was wiped
2. I \_\_\_\_\_ your report yesterday – could I see it now?  
A) have not received B) not received C) did not receive D) did not received
3. Could you look after Mrs White tomorrow – I can't do it because I \_\_\_\_\_ back from the conference when she gets here.  
A) will have travelled B) was travelling C) was going to travel D) will be travelling
4. The telecoms operator \_\_\_\_\_ figures showing that the demand for broadband Internet has grown twice this year.  
A) has been published B) has published C) is being published D) will be published
5. If that package from Neilson's arrives this afternoon, \_\_\_\_\_ it up to my office immediately.  
A) you are bringing B) you would bring C) bring D) you brought
6. No conclusions \_\_\_\_\_ from this chapter.  
A) can be drawn B) can't be drawn C) cannot be drawn D) can be not drawn
7. The files aren't here – I \_\_\_\_\_ them back at the office.  
A) may leave B) must be leaving C) should have left D) must have left
8. Every new discovery seems to widen the horizon and increase the extent of \_\_\_\_\_ contact with unexplored areas.  
A) our B) us C) we D) ours
9. I asked Martha \_\_\_\_\_ the conference had gone well.  
A) what B) did C) if D) that
10. My boss was very supportive and encouraged me \_\_\_\_\_ for the promotion.  
A) to apply B) to have applied C) to applying D) to be applied
11. Tourism today is an industry \_\_\_\_\_ has grown so much in recent years that in many countries it provides the greatest single contribution to the country's revenue.

- A) who                      B) which              C) whose              D) where
12. There is hardly \_\_\_\_\_ to be seen in the city centre after dusk.  
A) nobody      B) anybody      C) everybody      D) one
13. The new manager is sure \_\_\_\_\_ into ways to cut costs.  
A) to looking      B) to look              C) being looked              D) to be looked
14. Our new security scheme is much \_\_\_\_\_ than the previous Government's.  
A) generouser      B) more generouser      C) generousest              D) more generous
15. The Black Sea is \_\_\_\_\_ the North Sea.  
A) not so stormy than      B) not stormy as              C) not so stormy like      D) not so stormy as

### Grammar Test 7

*Choose the best answer A, B, C or D.*

1. I \_\_\_\_\_ for a German laboratory for two years, from 1990 to 1992.  
A) work              B) have worked              C) have been working              D) worked
2. We \_\_\_\_\_ our normal suppliers, but we have changed our minds because we have found some new ones that are cheaper.  
A) will use      B) are going to use      C) will be using              D) were going to use
3. The statistics published yesterday \_\_\_\_\_ that over 30000 subscribers a week are turning to high-speed Internet services.  
A) shows              B) show              C) are shown      D) were shown
4. Gas is made up of very \_\_\_\_\_ molecules.  
A) few              B) less              C) much              D) a large number
5. They refused to give \_\_\_\_\_ explanation to the fact.  
A) some              B) any              C) no              D) not any
6. We had to get an interpreter in Japan because none of us \_\_\_\_\_ speak Japanese.  
A) knew              B) were able      C) could              D) succeeded
7. The Manager asked me \_\_\_\_\_ of the new proposal.  
A) what did I think      B) if I thought      C) that I did think              D) what I thought
8. He apologized \_\_\_\_\_ at the meeting late.  
A) to arrive      B) that he arrived              C) of arriving      D) for arriving
9. You \_\_\_\_\_ yet whether to study management or business administration.  
A) need decide              B) need deciding              C) needn't decide              D) need to have decided
10. Do you think we will be able to find \_\_\_\_\_ amongst all the people at the exhibition hall?  
A) ourselves      B) us      C) each other      D) our
11. All the problems \_\_\_\_\_ from both theoretical and experimental viewpoints.  
A) will deal      B) will deal with              C) will be dealt with              D) deal with
12. This keyboard is much \_\_\_\_\_ than any other in our catalogue.  
A) conveniener              B) convenientest              C) more conveniener              D) more convenient
13. These \_\_\_\_\_ are available in current literature.  
A) datum              B) datums              C) datas              D) data
14. The atomic weight of sulphur is twice \_\_\_\_\_ that of oxygen.  
A) as large as      B) as large than              C) larger as              D) so large as
15. There will be a repeat of the smog crisis of two years ago here if nothing \_\_\_\_\_ to control the fires.

- A) be done    B) will be done    C) would be done    D) is done

### Grammar Test 8

*Choose the best answer A, B, C or D.*

1. We \_\_\_\_\_ that the authorities are not doing enough to restore this beautiful lake to its former state.  
A) believing    B) are believing    C) believes    D) believe
2. Customers in remote areas do not know whether the phone lines in their areas \_\_\_\_\_.  
A) will be being upgraded    B) will upgrade    C) will be upgraded    D) will have upgraded
3. Monsieur Degas \_\_\_\_\_ this afternoon, but he rang to change the appointment to next Tuesday.  
A) would come    B) was going to come    C) is going to come    D) will have come
4. \_\_\_\_\_ you those figures yet?  
A) Has he sent    B) Have he sent    C) Has he send    D) Did he send
5. Neil's a good administrator, but if he deals with customers, he always \_\_\_\_\_ problems.  
A) creating    B) creates    C) created    D) would create
6. If the temperature \_\_\_\_\_, the experiment might have been a failure.  
A) had been not raised    B) had not been raised    C) had not raised    D) would have been raised
7. I haven't seen Simone for ages - she \_\_\_\_\_ in a different department.  
A) should work    B) needn't have worked    C) must be working    D) ought to have been working
8. \_\_\_\_\_ these hypotheses can explain the origin of the solar system.  
A) Nothing of    B) No of    C) Nobody of    D) None of
9. At the meeting the shareholders asked how the company \_\_\_\_\_ in the previous year.  
A) did    B) had done    C) have done    D) has done
10. At present intensive research \_\_\_\_\_ on the improvement of spaceflight conditions.  
A) is done    B) is doing    C) is being done    D) has been done
11. You \_\_\_\_\_ such a long essay. Three paragraphs would be enough to demonstrate your writing ability. You have written much more than that.  
A) need have written    B) needn't have written    C) need write    D) need writing
12. I thought the Government \_\_\_\_\_ genetically modified food. Didn't the Prime Minister say that himself?  
A) is supported    B) supported    C) have been supported    D) will support
13. Electronic devices are in wide use in this \_\_\_\_\_.  
A) laboratory research    B) laboratory's researches    C) laboratories researches    D) laboratories's research
14. The physiologists are rather worried about the side effects of aspirin. Can you recommend a \_\_\_\_\_ alternative?  
A) safier    B) safer    C) more safe    D) more safer
15. The older the formations, \_\_\_\_\_ generally to study.  
A) hard they are    B) they are hard    C) the harder they are    D) harder they are

### Grammar Test 9

**Choose the best answer A, B, C or D.**

1. The main advantage of broadband Internet is that files \_\_\_\_\_ by users up to 40 times faster than with a dial-up modem.  
A) can download      B) can be downloaded      C) must be loaded      D) could download
2. How many units \_\_\_\_\_ last year?  
A) sold you      B) have you sell      C) have you sold      D) did you sell
3. If sales continue to do this well, we \_\_\_\_\_ our target by the end of next month.  
A) will have reached      B) are reaching      C) will be reaching      D) were reaching
4. Each year millions of reports on scientific research are published, a great number of \_\_\_\_\_ being in foreign languages.  
A) their      B) theirs      C) them      D) they
5. The device has got a year's guarantee, so you can bring it back if anything \_\_\_\_\_ wrong.  
A) will go      B) would go      C) goes      D) had gone
6. The research group might \_\_\_\_\_ good results.  
A) getting      B) got      C) get      D) not got
7. The detailed study of planets close to the Earth \_\_\_\_\_ in our knowledge concerning the origin of the solar system.  
A) won't filled gaps      B) will fill gaps      C) not fill gaps      D) fill gaps
8. I couldn't find Mrs Arnoux, so I asked her secretary \_\_\_\_\_.  
A) was she there      B) where was she      C) where she was      D) where she was being
9. He rang to ask \_\_\_\_\_ we were still interested in the site or not.  
A) whether      B) when      C) where      D) that
10. I can't wait so you must give me an \_\_\_\_\_ answer.  
A) immediately      B) immediate      C) more immediate      D) most immediate
11. You can't have lost the laboratory key. It's got to be \_\_\_\_\_.  
A) anywhere      B) somewhere      C) everywhere      D) where some
12. The problems that exist with your experimetns today should \_\_\_\_\_ a month or two ago.  
A) have been solved      B) be solved      C) have solved      D) have been solving
13. In our study children on a diet high in dairy products tended to be considerably \_\_\_\_\_ than average.  
A) more fat      B) fatter      C) fater      D) more fatter
14. Petrol is \_\_\_\_\_ it was a few years ago.  
A) twice more expensive as      B) two times more expensive as      C) twice as expensive as      D) two times much expensive than
15. They are often confronted with difficult problems which they have to \_\_\_\_\_.  
A) have solved      B) solve      C) be solving      D) have been solving

### **Grammar Test 10**

**Choose the best answer A, B, C or D.**

1. The weather forecast says there'll be wind from the north west tonight. That always \_\_\_\_\_ snow with it at this time of year.

- A) bring      ing      B) bring      C) brings      D) has brought
2. I can't find Ms Brown – \_\_\_\_\_ to lunch?
- A) Have she gone      B) Has she gone      C) Did she go      D) Has she went
3. The materials \_\_\_\_\_ excessively wet or excessively dry for this purpose.
- A) must be not      B) must not be      C) have not be      D) has not be
4. Usually outstanding scientists \_\_\_\_\_ to give review papers.
- A) are being invited      B) are invited      C) invited      D) were being invited
5. If you \_\_\_\_\_ tomorrow, you'll have problems because of the volcano eruption in Iceland.
- A) will travel      B) travelled      C) would travel      D) travel
6. I \_\_\_\_\_ the contract if I had read it properly.
- A) will have signed      B) wouldn't have signed      C) didn't sign      D) signed
7. Sorry, but \_\_\_\_\_ you give me a hand with these test tubes? They're very fragile.
- A) might      B) may      C) would      D) shall
8. We \_\_\_\_\_ them the reminder on Monday morning because the cheque arrived that afternoon.
- A) needed to send      B) needn't send      C) needed to have sent      D) needn't have sent
9. I didn't receive the ticket, so I rang the travel agent to find out if they \_\_\_\_\_ it.
- A) sent      B) had sent      C) have sent      D) sends
10. I rang to ask when they \_\_\_\_\_, but in fact they had already relocated.
- A) are moving      B) will move      C) shall move      D) were moving
11. Many research scientists are inspired by the hope of \_\_\_\_\_ diseases by genetic engineering,
- A) cure      B) having cured      C) being cured      D) curing
12. The new chess champion from Ukraine is amazing. \_\_\_\_\_ can beat him!
- A) Anyone      B) Everyone      C) No one      D) One
13. He brought a laptop \_\_\_\_\_ his e-mails when he was travelling.
- A) access      B) to access      C) to have accessed      D) to be accessed
14. I don't mind the Mediterranean summer because it's a \_\_\_\_\_ heat than you find in the tropics.
- A) dryer      B) drier      C) more dry      D) more drier
15. It doesn't rain \_\_\_\_\_ it does in autumn.
- A) as much in summer as      B) as many in summer as      C) so much in summer than      D) as much in summer like

### Grammar Test 11

**Choose the best answer A, B, C or D.**

1. Prior to the 19<sup>th</sup> century, professional scientists \_\_\_\_\_ and scientific research was largely carried out by amateurs.
- A) have not existed      B) not existed      C) did not exist      D) do not exist
2. Everybody \_\_\_\_\_ that rainforests are disappearing.
- A) is knowing      B) are knowing      C) know      D) knows
3. Analysis of the Martian soil suggests that water exists on Mars, and there are a \_\_\_\_\_ areas where scientists believe ice forms and melts.
- A) many      B) much      C) few      D) little

4. In recent years, many plans \_\_\_\_\_ for large 'floating cities' with living accommodation for as many as 50,000 people.  
A) have made B) have been making C) have been made D) making
5. The world's oceans contain huge amounts of salt. In fact, if you \_\_\_\_\_ all the salt from the oceans, you \_\_\_\_\_ to use it to build a wall about 300 km wide and a kilometer tall all around the Earth!  
A) remove/will be able B) removed/would be able  
C) had removed/would have been able C) would remove/were able
6. When you look into the night sky, you may not be able to tell the difference between stars and planets, but planets are \_\_\_\_\_ to Earth.  
A) a lot nearer B) nearer than C) less near than D) more nearer
7. The explorer tried \_\_\_\_\_ the journey the next year, but failed again.  
A) complete B) completing C) to complete D) in completing
8. Rapid population growth \_\_\_\_\_ cause problems.  
A) must B) can C) need D) have to
9. You \_\_\_\_\_ look at other students' work. It's against the rules.  
A) had better not B) needn't C) don't have to D) mustn't
10. The latest study \_\_\_\_\_ by these two environmental engineers has produced mixed results.  
A) conducting B) conducted C) been conducted D) having been conducted
11. Polar bears, \_\_\_\_\_ are excellent swimmers, can often be seen in open water kilometers from land.  
A) that B) which C) whom D) why
12. It remains to be seen \_\_\_\_\_ great companies or make them stronger than ever.  
A) if the new technology will weaken B) will the new technology weaken  
C) weaken the new technology D) when the new technology weakens
13. The participants were told \_\_\_\_\_ any questions while the experiment was going on.  
A) not to ask B) not ask C) do not ask D) to not ask
14. According to the plans, for this project, this huge ship \_\_\_\_\_ from smaller units.  
A) will construct B) will be constructing C) will be constructed D) will have been constructed
15. \_\_\_\_\_ a range of forest types depending on the annual rainfall.  
A) It is B) They are C) There are D) There is

## Grammar Test 12

**Choose the best answer A, B, C or D.**

1. Although rainforests cover only six per cent of the Earth's land surface, they \_\_\_\_\_ about 50% of all species of life on the planet.  
A) containing B) are containing C) contain D) have been containing
2. When Edouard Benedictus, a French scientist, \_\_\_\_\_ in his laboratory, he dropped a glass bottle which had some plastic inside – and invented safety glass.  
A) was working B) has worked C) works D) worked
3. \_\_\_\_\_ desert plants store food in their leaves or roots, and some desert plants can live for many years.  
A) Many B) A lot C) Lots D) much
4. The passengers of the cruise ship \_\_\_\_\_ with all kinds of entertainment and sports facilities.  
A) will have provided B) will be provided C) will provide D) will be providing
5. Humans are among the few animals to have colour vision. If you \_\_\_\_\_ a horse, for example, you \_\_\_\_\_ everything in black and white.  
A) would be/saw B) are/will see



- C) had been/would have seen                      D) were/would see
6. Planets are very far away, and a journey to Mars would take about 9 months, \_\_\_\_\_ a journey to the Moon (about 3 days).  
A) more longer than    B) as long as    C) much longer than    D) longest than
7. John Stuart decided \_\_\_\_\_ Australia from south to north in 1859.  
A) cross                      B) to cross    C) crossing                      D) in crossing
8. One of the possible reasons for sleeping is that if we didn't sleep and save some energy, we \_\_\_\_\_ have to eat a lot more food.  
A) can't                      B) will                      C) may                      D) must
9. Are you any good at athletics? How fast \_\_\_\_\_ you run?  
A) should    B) must                      C) need                      D) can
10. Before \_\_\_\_\_ about the problems caused by large-scale industry, it makes sense to consider small-scale pollution at home.  
A) worrying    B) worried    C) been worried                      D) having been worried
11. Today, mountain forests and fresh springs surround the rim of the crater's walls, \_\_\_\_\_ reach an elevation of 2286 km.  
A) that                      B) what                      C) those                      D) which
12. Do you happen to know \_\_\_\_\_ similar in size?  
A) are the Arabian Desert and the Gobi Desert                      B) whether the Arabian Desert and the Gobi Desert are  
C) the Arabian Desert and the Gobi Desert are                      D) if are the Arabian Desert and the Gobi Desert
13. The Managing Director told his secretary \_\_\_\_\_ anyone in during the staff meeting.  
A) not let                      B) don't let    C) not to let    D) to not let
14. Old companies always \_\_\_\_\_ new technology.  
A) fear                      B) are feared                      C) are being feared    D) have been feared
15. Each species of frog has a particular set of sounds, because \_\_\_\_\_ important that frogs of the same species find each other.  
A) it is                      B) they are    C) there is                      D) there are

### Grammar Test 13

**Choose the best answer A, B, C or D.**

1. While he \_\_\_\_\_ the Moon through his telescope, Galileo realized that it had mountains and craters.  
A) observed    B) was observing                      C) observes    D) observing
2. This telescope is excellent! It \_\_\_\_\_ for fifteen years, and it has produced more than 700,000 images of the universe.  
A) works    B) have worked                      C) has been working    D) worked
3. You can't swim in the Dead Sea because it contains too \_\_\_\_\_ salt.  
A) many                      B) a lot of                      C) lots                      D) much
4. Worldwide sales of bottled water \_\_\_\_\_ to reach \$72 billion by next year.  
A) forecast    B) forecasted    C) is forecast    D) are forecast
5. If a storm \_\_\_\_\_ Bartolomeu Dias's ship off the coast of Africa in 1487, they \_\_\_\_\_ in the Indian Ocean by accident.  
A) had not hit/would not have arrived                      B) did not hit/would not arrive  
C) would not hit/did not arrive                      D) would not have hit/had not arrived
6. Hot water can freeze \_\_\_\_\_ cold water.  
A) more easy than                      B) more easily than                      C) as easier as                      D) easiest as
7. Finally in 1861 Stuart managed \_\_\_\_\_ at the northern coast of Australia, near the modern city of Darwin.

- A) to arrive B) arriving C) in arriving D) arrive
8. Scientists could not understand why Mercury appeared to rotate faster than it should, and some astronomers suggested that there \_\_\_\_\_ be an undiscovered planet causing this unusual orbit and even gave it the name 'Vulcan'.
- A) can not B) might C) need D) mustn't
9. You \_\_\_\_\_ eat so many sweets. They aren't good for you.
- A) had better B) don't have to C) shouldn't D) needn't
10. The results \_\_\_\_\_ by our American colleagues are easy to explain if you apply Einstein's theory of relativity.
- A) obtaining B) been obtained C) having been obtained D) obtained
11. Millions of years ago, Ngorongoro was an active volcano with a cone \_\_\_\_\_ some scientists believe was as high as Mount Kilimanjaro.
- A) what B) where C) that D) why
12. Do you know \_\_\_\_\_?
- A) how high is Mount Everest B) how Mount Everest is high C) Mount Everest how high is D) how high Mount Everest is
13. The explorer asked his companions \_\_\_\_\_ fires after dark.
- A) not make B) don't make C) to not make D) not to make
14. In many countries in recent years, areas of urban land which were once used for industry \_\_\_\_\_ for other purposes.
- A) have redeveloped B) have been redeveloped C) have redeveloping D) have being redeveloping
15. At the Equator, \_\_\_\_\_ a lot of rain, on average more than 200 cm per year.
- A) it is B) they are C) there is D) there are

### Grammar Test 14

**Choose the best answer A, B, C or D.**

1. In recent years, cable television \_\_\_\_\_ the power of the broadcasters.
- A) has undermined B) undermined C) was undermined D) undermining
2. In 1999, 156 countries \_\_\_\_\_ the Kyoto protocol, part of a United Nations agreement on climate change.
- A) have signed B) signed C) signing D) were signing
3. In geography, a desert is an area which receives little rain and which loses \_\_\_\_\_ its moisture through evaporation.
- A) a lot of B) a lot of C) many D) much
4. Overcrowded classrooms frequently \_\_\_\_\_ levels of carbon dioxide that would be regarded as unacceptable on board a submarine.
- A) are contained B) contain C) contains D) containing
5. If Charles Darwin \_\_\_\_\_ a voyage to South America between 1831 and 1836, he \_\_\_\_\_ his famous book *The Origin of Species*, which argued that living creatures evolved over millions of years.
- A) did not take/would not write B) would not take/did not write
- C) would not have taken/had not written D) had not taken/would not have written
6. Research shows that levels of pollutants are usually \_\_\_\_\_ indoors than out, even in the most polluted cities.
- A) highest B) most high C) more high D) higher
7. On that expedition, Stuart failed \_\_\_\_\_ the coast, and turned back ill and short of food.
- A) to reach B) reaching C) in reaching D) reach
8. Lack of sleep \_\_\_\_\_ damage the immune system, so people who do not sleep enough tend to fall ill more often.

- A) can      B) should      C) must      D) need to
9. I'm really tired, but luckily I \_\_\_\_\_ get up early in the morning.
- A) can't      B) don't have to      C) had better      D) shouldn't
10. Some amateur paleontologists insist that \_\_\_\_\_ fossils can be really exciting.
- A) having collected      B) collect      C) having been collected      D) collecting
11. The Polar Bear, \_\_\_\_\_ is threatened by global warming, may become extinct by the end of the century.
- A) that      B) which      C) whom      D) those
12. We still don't know how many \_\_\_\_\_ in the earthquake.
- A) have people been injured      B) if people have been injured
- C) people have been injured      D) whether have people been injured
13. People once thought that coal and sulphur burning below ground \_\_\_\_\_ volcanic eruptions
- A) cause      B) are causing      C) caused      D) will cause
14. Since the 1980s, \$ 10 billion \_\_\_\_\_ on the project.
- A) has been spent      B) has spending      C) has been spending      D) has spent
15. In a tropical forest, \_\_\_\_\_ difficult for plants on the forest floor to develop, as tall trees (25-35 metres) block the light.
- A) they are      B) there are      C) there is      D) it is

### Grammar Test 15

*Choose the best answer A, B, C or D.*

1. News of this technological development \_\_\_\_\_ some years ago.
- A) has been published      B) was published      C) published      D) have been published
2. Since the early 1980s, we \_\_\_\_\_ aware of the devastating effects of large-scale environmental pollution.
- A) are      B) have been      C) are being      D) will be
3. Reptiles, such as snakes, lizards and tortoises, spend \_\_\_\_\_ hours in the sun to generate body heat.
- A) lots      B) a lot      C) many      D) much
4. New technologies always \_\_\_\_\_ within them both threats and opportunities.
- A) contain      B) are contained      C) containing      D) have been contained
5. If Columbus \_\_\_\_\_ about Marco Polo's trip to China, he \_\_\_\_\_ to sail there by crossing the Atlantic.
- A) did not read/would not try      B) had not read/would not have tried
- C) would not have read/had not tried      D) would not read/would not try
6. Brazil's Amazon forest is disappearing \_\_\_\_\_ scientists previously imagined.
- A) as fast than      B) less faster than      C) fastest than      D) faster than
7. John Stuart's expedition succeeded \_\_\_\_\_ a huge desert.
- A) to discover      B) discovering      C) in discovering      D) discover
8. Most of us enjoy a good night's sleep, but we \_\_\_\_\_ not realize just how important sleep is.
- A) must      B) should      C) may      D) can
9. I think that was the last bus. \_\_\_\_\_ look for a taxi.
- A) We needn't      B) We'd better      C) We're able to      D) We don't have to
10. \_\_\_\_\_ all those contradictory data, the researchers had some difficulty trying to interpret them in a proper way.
- A) Collected      B) Having been collected      C) Having collected      D) Being collected

11. Contained within the Ngorongoro Conservation Area is the geologically important and historically controversial Olduvai Gorge, \_\_\_\_\_ the anthropologists Louis and Mary Leakey discovered numerous specimens of the fossil remains of early humans.

A) which      B) where      C) that      D) whom

12. The researchers are wondering how long \_\_\_\_\_ in tap water.

A) chlorine stays      B) does chlorine stay      C) does chlorine stays      D) if chlorine stays

13. Scientists predicted when \_\_\_\_\_ by measuring movements in the Earth.

A) the volcano will erupt      B) will the volcano erupt

C) the volcano would erupt      D) would the volcano erupt

14. Modern recycling methods \_\_\_\_\_ to save energy on board the Freedom Ship.

A) will use      B) will be using      C) will have used      D) will be used

15. Frogs lay large numbers of eggs, because \_\_\_\_\_ likely that predators will eat most of them.

A) they are      B) it is      C) there is      D) there are

## 1. 2. VOCABULARY TESTS

### Vocabulary Test 1

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

#### Sound Advice for Language Learners

A recent (0)...B..... of a language learning magazine has consulted a number of experts in the (1).....of second language acquisition. Their advice may prove invaluable for those (2) .....a language course. One suggestion is that you (3)..... whether you are likely to be successful at learning a language. Did you enjoy studying languages at school, for example? Do you have enough time to learn a language? The major (4) ..... will be your own time and effort. Therefore you must make sure that the course on offer leads to a (5) ..... qualification. Also, be realistic in your (6)..... . If you don't set achievable aims you are most likely to give up. Do not be deceived (7)..... thinking that the most expensive courses are the best. (8)..... around to get the best possible value for money. You should also bear in mind that the quicker you learn a language the more quickly you forget it. Sandra Miller, a French teacher, tried to teach herself German by enrolling on a (9)..... course. Already fluent in four languages and with a sound knowledge of teaching methodology her chances of (10)..... progress were high. Three years (11)..... she remembers very little. She feels her biggest mistake was not to follow (12)..... her first experience. "I should have consolidated what I had learnt by continuing to study, even if it were by myself."

0      A series      B issue      C programme      D release

1      A domain      B branch      C field      D area

2      A wondering      B thinking      C looking      D considering

3      A assess      B review      C balance      D survey

4      A charge      B cost      C price      D valuation

5      A recognised      B understood      C valued      D regarded

6      A sights      B ends      C objects      D goals

7      A by      B about      C into      D in

8      A Nose      B Push      C Run      D Shop

9      A rapid      B crash      C quick      D fast

- |    |             |           |           |          |
|----|-------------|-----------|-----------|----------|
| 10 | A achieving | B doing   | C gaining | D making |
| 11 | A on        | B forward | C from    | D onward |
| 12 | A up        | B on      | C through | D out    |

### Vocabulary Test 2

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

#### Improving Your Intellect

A (0)...B..... of researchers at the University of California claimed in a recently published report that listening to classical music can actually improve one's level of intelligence. This surprising claim was (1)..... after groups of volunteers listened to three different tapes and completed IQ tests after listening to each one. The volunteers (2)..... ten minutes of Mozart, a relaxation tape and a recording of silence. When making the test after listening to Mozart, the subjects' scores were noticeably (3)..... than after the other two. However, the tape had no (4)..... effect on any of the volunteers' intelligence levels.

Researchers believe that this kind of music opens certain neural networks which are used when performing intellectual tasks like puzzle (5)..... . They do not claim that Mozart alone among classical composers is (6)..... of lifting your spirits and boosting brain-power, but they do believe that this particular composer's distinctive style makes his works ideally suited for stimulating our grey matter. Researchers in New Zealand attempted to (7)..... these results, but their efforts did not (8)..... with success. Despite this lack of this outside verification, the Californian team are determined to carry (9)..... . Further (10)..... have been planned, this time using a (11)..... range of audio material. Chris Band, one of the leaders in the UK intelligence research field, has poured cold water on Californian claims. He asserts that their results cannot be (12)..... seriously until someone else manages to reproduce them.

- |    |           |               |             |              |
|----|-----------|---------------|-------------|--------------|
| 0  | A party   | B team        | C band      | D gang       |
| 1  | A made    | B said        | C stated    | D done       |
| 2  | A heard   | B listened    | C followed  | D attended   |
| 3  | A larger  | B more        | C greater   | D higher     |
| 4  | A last    | B permanent   | C final     | D constant   |
| 5  | A solving | B working     | C doing     | D putting    |
| 6  | A capable | B able        | C competent | D proficient |
| 7  | A redo    | B copy        | C imitate   | D reproduce  |
| 8  | A engage  | B welcome     | C meet      | D accept     |
| 9  | A off     | B on          | C along     | D out        |
| 10 | A trials  | B experiences | C efforts   | D attempts   |
| 11 | A longer  | B richer      | C further   | D broader    |
| 12 | A faced   | B accepted    | C taken     | D believed   |

### Vocabulary Test 3

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

#### Environmental Concerns

Earth is the only (0)...B..... we know of in the universe that can support human life. (1)..... human activities are making the planet less fit to live on. As the western world (2)..... on consuming two-thirds of the world's resources while half of the world's population do so (3)..... to stay alive we are rapidly destroying the (4)..... resources we have by which all people can survive and prosper. Everywhere fertile soil is (5)..... built on or washed into the sea. Renewable resources are exploited so much that they will never be able to recover

(6)..... . We discharge pollutants into the atmosphere without any thought of the consequences. As a (7)..... the planet's ability to support people is being (8)..... at the very time when rising human numbers and consumption are (9)..... increasingly high demands on it.

The Earth's (10)..... resources are there for us to use. We need food, water, air, energy, medicines, warmth, shelter and minerals to (11)..... us fed, comfortable, healthy and active. If we are sensible in how we use the resources they will (12)..... indefinitely. But if we use them wastefully and excessively they will soon run out and everyone will suffer.

- |    |               |               |               |              |
|----|---------------|---------------|---------------|--------------|
| 0  | A situation   | B place       | C position    | D site       |
| 1  | A Still       | B Even though | C In spite of | D Despite    |
| 2  | A continues   | B repeats     | C carries     | D follows    |
| 3  | A already     | B just        | C for         | D entirely   |
| 4  | A alone       | B individual  | C lone        | D only       |
| 5  | A sooner      | B neither     | C either      | D rather     |
| 6  | A quite       | B greatly     | C utterly     | D completely |
| 7  | A development | B result      | C reaction    | D product    |
| 8  | A stopped     | B narrowed    | C reduced     | D cut        |
| 9  | A doing       | B having      | C taking      | D making     |
| 10 | A natural     | B real        | C living      | D genuine    |
| 11 | A hold        | B maintain    | C stay        | D keep       |
| 12 | A last        | B stand       | C go          | D remain     |

#### Vocabulary Test 4

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

##### No More Classes

The use (0)...C..... computers has meant students can study language programmes (1)..... their own speed when and for how long they want – and no need to worry about the teacher having a favourite or doing (2)..... another boring lesson. What's more, in the virtual classrooms of the future the student will (3)..... on their headset, and be transported into an imaginary school, choose their class, take the books they need off the shelf and (4)..... conversations with other computerized students.

They might (5)..... choose to pay a visit to the supermarket or the train station, the bank or the restaurant. At the (6)..... of a button they would be transported to (7).....realistic settings where they could practice their English, maybe getting a hand (8)..... a virtual English companion. All this perhaps, at the computer, from the comfort of their home: no (9).....to catch the bus to college, or a plane to England.

Exciting? Certainly, and an interesting alternative to traditional classroom lessons. But would it ever (10)..... the classroom? Hopefully not. (11)..... the need to relate to real people talking about real issues and generally learning a little more about others will always lead language learners to (12).....at least a little of their time with real people.

- |   |            |              |           |            |
|---|------------|--------------|-----------|------------|
| 0 | A in       | B at         | C of      | D to       |
| 1 | A with     | B for        | C at      | D in       |
| 2 | A still    | B for        | C yet     | D already  |
| 3 | A place    | B put        | C set     | D get      |
| 4 | A take     | B do         | C catch   | D hold     |
| 5 | A although | B preferably | C instead | D contrary |
| 6 | A force    | B hit        | C depress | D push     |
| 7 | A so       | B such       | C like    | D alike    |

- |    |              |           |              |           |
|----|--------------|-----------|--------------|-----------|
| 8  | A with       | B to      | C from       | D for     |
| 9  | A role       | B duty    | C obligation | D need    |
| 10 | A replace    | B restore | C succeed    | D recover |
| 11 | A definitely | B mainly  | C totally    | D surely  |
| 12 | A spend      | B make    | C have       | D do      |

### Vocabulary Test 5

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

#### The Sahara

Around 4,000 BC, the Sahara began to turn (0)...A..... a desert. Since that time, it has slowly been growing larger and larger and today it is the world's largest desert. It (1)..... nine million square kilometers of Africa, that is, as (2)..... land as the United States. The Sahara is mostly made up of mountains, bare rocky plains and high flatlands (3)..... plateaus. The rest is a(n) (4)..... sea of sand which in some (5)..... piles up into dunes. Very few plants survive more than a few weeks and those that do have adapted deep roots or take in moisture (6)..... their leaves. The desert is hot and dry during the day but (7).....cool at night. Many of the two million people who (8).....in the Sahara are nomads – people who travel from place to place to (9)..... food and water for themselves and their animals. This traveling is necessary since the Sahara gets less than ten centimeters of water a year. Other people (10)....., prefer not to travel and live in oases. Oases are places where water comes from wells or springs and where people can (11)..... their crops and water their animals. This picture of the Sahara is different to how it was over ten thousand years (12)....., when it had lakes and streams and was a fertile place.

- |    |            |            |           |             |
|----|------------|------------|-----------|-------------|
| 0  | A into     | B to       | C from    | D out       |
| 1  | A has      | B covers   | C takes   | D owns      |
| 2  | A long     | B far      | C much    | D many      |
| 3  | A said     | B named    | C told    | D called    |
| 4  | A extreme  | B huge     | C bulky   | D extended  |
| 5  | A sites    | B events   | C places  | D positions |
| 6  | A in       | B on       | C through | D about     |
| 7  | A turns    | B converts | C changes | D has       |
| 8  | A inhabit  | B live     | C stay    | D exist     |
| 9  | A explore  | B invent   | C find    | D supply    |
| 10 | A although | B but      | C and     | D however   |
| 11 | A grow     | B raise    | C develop | D increase  |
| 12 | A since    | B before   | C ago     | D after     |

### Vocabulary Test 6

*Choose the word or phrase (A, B, C or D) that best keeps the meaning of the original sentence if it is substituted for the underlined word or phrase.*

- The buyer wanted the furniture manufacturer to cut his prices.  
A) do away with                      B) make use of                      C) reduce                      D) review
- The prime ingredient in table salt is sodium.  
A) curious                      B) unexpected                      C) effective                      D) main
- The temperature of water can accelerate a chemical reaction.  
A) quicken                      B) increase                      C) delay                      D) stop
- He is very enthusiastic about his acceptance to the University.

- A) excited    B) pleased    C) passive    D) non-committal
5. What is necessary now is a correct balance of the use of coal, gas, oil and nuclear power.  
A) method in    B) mixture of    C) technique    D) technology in
6. The cup was filled to the rim.  
A) to the brim    B) too full    C) overflowing    D) half way
7. She always avoided her bad-tempered aunt.  
A) disliked    B) remembered    C) took care of    D) evaded
8. I was all alone and felt like crying.  
A) sad    B) unhappy    C) lonely    D) unloved
9. He looked up just as the sun emerged from the cloud.  
A) vanished in    B) covered    C) appeared out of    D) revealed
10. A flying aeroplane maintains its equilibrium as long as there is sufficient support from the pressure of air or wind against its wings.  
A) equanimity    B) balance    C) ability to fly    D) flight path

### Vocabulary Test 7

*Choose the word or phrase (A, B, C or D) that best keeps the meaning of the original sentence if it is substituted for the underlined word or phrase.*

1. A conscientious scientist hardly ever bases his research on a guess.  
A) probably    B) variably    C) scarcely    D) undeniably
2. The University basketball team is undoubtedly the best one in the city.  
A) persistently    B) relatively    C) certainly    D) practically
3. There is an abundance of ore in the mountain area.  
A) a wide variety    B) more than sufficient    C) a unique type    D) a common type
4. Severe criticism does not create a supportive learning environment.  
A) harsh    B) unfair    C) special    D) light
5. They adapted slowly because their surroundings were so new to them.  
A) warmed up    B) adjusted    C) frozen    D) improved
6. Congress is discussing tax rates tomorrow in a closed session.  
A) abolishing    B) reducing    C) debating about    D) revoking
7. He has a fine apartment with all the modern conveniences.  
A) house    B) flat    C) office    D) department
8. The child died from lack of care and proper nourishment.  
A) excess    B) desire    C) denial    D) absence
9. The basic colours of the spectrum are red, blue and yellow.  
A) necessary    B) secondary    C) exceptional    D) primary
10. His attempts to shift the blame for his defeat onto his companion met no response.  
A) responsibility    B) importance    C) reason    D) necessity

### Vocabulary Test 8

*Choose the word or phrase (A, B, C or D) that best keeps the meaning of the original sentence if it is substituted for the underlined word or phrase.*

1. Modern technology was not generally available before the 1930s.  
A) at the time of    B) prior to    C) due to    D) thanks to
2. A group of geologists explored the caves.  
A) isolated    B) inscribed    C) tested    D) examined



3. Ecologists are advocating measures to clean the polluted areas.  
A) supporting B) opposing C) discouraging D) believing in
4. The Mississippi River flood in 1994 was devastating.  
A) divisible B) crushing C) damaging D) shocking
5. At times the vital balance between animals and plants is upset by man's interference.  
A) good intentions B) intrusion C) assistance D) withdrawal
6. Congress is discussing tax rates tomorrow in a closed door session.  
A) abolishing B) reducing C) debating about D) revoking
7. Suddenly a cloud appeared on the horizon.  
A) emerged B) grew larger C) was hidden D) turned back
8. His enthusiasm for sports affected the results of his school examination.  
A) effected B) improved C) influenced D) inspired
9. The population of the town is slightly less than one hundred thousand people.  
A) even B) a little C) a lot D) much
10. Gradually the participants of the conference filled the conference hall.  
A) all at once B) recently C) suddenly D) little by little

### Vocabulary Test 9

*Choose the word or phrase (A, B, C or D) that best keeps the meaning of the original sentence if it is substituted for the underlined word or phrase.*

1. If water freezes, its volume increases.  
A) varies B) expands C) diminishes D) weighs
2. The scientist studied his subject thoroughly before he started the project.  
A) incredibly B) in depth C) in vain D) imperceptibly
3. In the laboratory the test tube rack is adjacent to the desk.  
A) far from B) within C) behind D) next to
4. The drop in temperature was negligible.  
A) unimportant B) average C) needless D) misleading
5. The young engineer had to take upon himself all the blame for the failure of the project.  
A) recognition B) praise C) responsibility D) credit
6. The rain was lashing and it was cold in the room without a fire.  
A) stuffy B) cosy C) icy D) chilly
7. I am alone and can do more or less whatever I like.  
A) solitary B) superior C) among friends D) grown-up
8. The government's failure to establish any sound economic policy was acknowledged by the minister.  
A) talked about B) made public C) admitted D) denied
9. Our manufacturing methods will be adapted to conform to the new technology.  
A) improved B) renewed C) adjusted D) tolerated
10. The debate about the health care reform seems to go on endlessly.  
A) discussion B) complaints C) disquietude D) disagreement

### Vocabulary Test 10

*Choose the word or phrase (A, B, C or D) that best keeps the meaning of the original sentence if it is substituted for the underlined word or phrase.*

1. The Alps are huge and treacherous mountains.  
A) low B) spectacular C) enormous D) solid

2. In colonial times marketing was basically an exchange of goods and services.  
A) a harmony B) a collection C) a trade D) a cycle
3. The doctor verified that the disease could be prevented.  
A) confirmed B) stated C) believed D) disproved
4. The economic conditions influenced the Ukrainian life style.  
A) effected B) affected C) improved D) stabilized
5. We put up tents on the border of the lake.  
A) on the edge of the lake B) near the lake C) on the pier of the lake D) in front of the lake
6. We asked a plumber to take a look at our bathroom so he could make an estimate of the repair costs.  
A) a hypothesis B) a rough calculation C) a long list D) a proposal
7. We are alone here; you can tell me whatever you've come to tell.  
A) among friends B) by ourselves C) close together D) forgotten
8. Want of money forced the old man to go begging.  
A) excess B) love C) banishment D) lack
9. He acknowledged his defeat in the chess tournament by failing to appear in the last game.  
A) refused B) spoke about C) admitted D) learned about
10. The gallery displayed an authentic picture by da Vinci.  
A) genuine B) antique C) expensive D) forgotten

### Vocabulary Test 11

*Choose the word or phrase (A, B, C or D) which best completes each sentence.*

1. Technology has indeed had a significant \_\_\_\_\_ on our lives today.  
A) change B) role C) effort D) effect
2. The experiment was successfully \_\_\_\_\_ by a team of scientists.  
A) performed B) created C) operated D) fulfilled
3. The third \_\_\_\_\_ of the book has not been published yet.  
A) report B) publicity C) edition D) issue
4. Since he lost his job last year, he has been \_\_\_\_\_.  
A) unworked B) resting C) sitting D) unemployed
5. This tradition is \_\_\_\_\_. It is found nowhere else in the world.  
A) rare B) individual C) single D) unique
6. Her problem was that she \_\_\_\_\_ stand losing.  
A) couldn't B) wouldn't C) didn't D) shouldn't
7. They decided to \_\_\_\_\_ the deadline.  
A) proceed B) travel C) extend D) continue
8. The management promise to \_\_\_\_\_ action if a customer has been poorly treated by the staff.  
A) take B) get C) make D) do
9. The next generation of telephones in every home will \_\_\_\_\_ us to see the person we are speaking to.  
A) permit B) enable C) assist D) let
10. The repairs will be carried out \_\_\_\_\_ a week of receipt of your call.  
A) with B) for about C) until D) within

### Vocabulary Test 12

*Choose the word or phrase (A, B, C or D) which best completes each sentence.*

1. The bigger the memory on your hard disk, the more \_\_\_\_\_ you can store.  
A) details    B) money    C) data    D) transactions
2. Alexander Graham Bell \_\_\_\_\_ the telephone.  
A) invented    B) discovered    C) founded    D) created
3. This job requires certain \_\_\_\_\_. You have to be good at operating computers and dealing with people.  
A) qualifications    B) skills    C) techniques    D) knowledge
4. The pumping of industrial \_\_\_\_\_ into the sea kills marine life.  
A) sewage    B) litter    C) rubbish    D) waste
5. Traffic congestion can \_\_\_\_\_ to delays in reaching your destinations.  
A) lead    B) drive    C) result    D) direct
6. Please make \_\_\_\_\_ your mind what you what to do.  
A) out    B) clear    C) sure    D) up
7. The \_\_\_\_\_ requirements for British universities is usually three A levels.  
A) exit    B) reception    C) entrance    D) coming
8. You ought to take \_\_\_\_\_ of the great prices in the winter sales.  
A) opportunity    B) advantage    C) profit    D) benefit
9. The hang-glider pilot \_\_\_\_\_ to land safely, despite the strong wind.  
A) achieved    B) managed    C) resulted    D) succeeded
10. She's got a new job. She's been put in \_\_\_\_\_ of the Loans Department in the bank.  
A) control    B) authority    C) power    D) charge

### Vocabulary Test 13

*Choose the word or phrase (A, B, C or D) which best completes each sentence.*

1. A lot of \_\_\_\_\_ has been put into finding effective ways to protect our natural environment.  
A) effort    B) job    C) task    D) attempt
2. Nicolas Copernicus \_\_\_\_\_ the orbits of the planets.  
A) created    B) invented    C) devised    D) discovered
3. Computer services are at the public's \_\_\_\_\_ in most libraries.  
A) availability    B) employment    C) disposal    D) practicality
4. The vegetation in one part of the forest is so \_\_\_\_\_ that when you look up you cannot see the sky.  
A) dense    B) dim    C) close    D) heavy
5. I was under the \_\_\_\_\_ that you knew how to use this programme.  
A) understanding    B) impression    C) belief    D) feeling
6. The famous scientist came \_\_\_\_\_ against different kinds of problems when he first settled in Spain.  
A) out    B) in    C) off    D) up
7. When developing new products, there can be any number of problems that \_\_\_\_\_.  
A) await    B) arise    C) come    D) exist
8. She was going to apply for a new job, but in the end she changed her \_\_\_\_\_.  
A) mind    B) heart    C) thoughts    D) opinion
9. Playing a sport can help people to \_\_\_\_\_ with the stress of modern life.  
A) live    B) manage    C) cope    D) survive
10. There is a \_\_\_\_\_ relationship between the quality of our employees and the quality of our products.  
A) strong    B) high    C) deep    D) sharp

### Vocabulary Test 14

*Choose the word or phrase (A, B, C or D) which best completes each sentence.*

1. The computer should be seen as a \_\_\_\_\_ we use to help us do our work.  
A) power    B) research    C) tool    D) source
2. Prices for accommodation \_\_\_\_\_ greatly depending on location.  
A) range    B) vary    C) adjust    D) waver
3. We thought the holiday resort we stayed in had very good \_\_\_\_\_ for children.  
A) services    B) equipment    C) facilities    D) conveniences
4. Due to a/an \_\_\_\_\_ of cash, the government has cancelled its development plans.  
A) decrease    B) minus    C) absence    D) shortage
5. As a \_\_\_\_\_ of leaving the window open, the laboratory was burgled.  
A) cause    B) reason    C) decision    D) result
6. The nurses cleaned the wound to reduce the risk \_\_\_\_\_ infection.  
A) of    B) from    C) about    D) for
7. It's a good thing for young people to be \_\_\_\_\_ in sport.  
A) capable    B) occupied    C) involved    D) good
8. Although the task is difficult, you must try to \_\_\_\_\_ your best.  
A) get    B) make    C) have    D) do
9. The children are more \_\_\_\_\_ to do well in a school where they are happy.  
A) likely    B) sure    C) definite    D) certain
10. He set up his first company while \_\_\_\_\_ at university.  
A) yet    B) still    C) then    D) even

### Vocabulary Test 15

*Choose the word or phrase (A, B, C or D) which best completes each sentence.*

1. Most young people in the Western world have \_\_\_\_\_ to a decent education.  
A) entrance    B) reach    C) access    D) opportunity
2. We are just going to have to \_\_\_\_\_ the money from a bank.  
A) borrow    B) loan    C) owe    D) lend
3. The tourist \_\_\_\_\_ is very important to the economies of some countries.  
A) trade    B) industry    C) business    D) profession
4. Banks pay you \_\_\_\_\_ if you leave your money in an account.  
A) interest    B) profit    C) value    D) income
5. It can be difficult to get used to the \_\_\_\_\_ of life in another country.  
A) kind    B) way    C) system    D) habit
6. At this airport a plane lands or takes off every two minutes \_\_\_\_\_ average.  
A) at    B) with    C) by    D) on
7. They decided to meet and discuss a \_\_\_\_\_ range of issues.  
A) wide    B) plentiful    C) lasting    D) long
8. My computer developed a virus that I just couldn't get \_\_\_\_\_ of.  
A) out    B) away    C) rid    D) free
9. Critics of the post office have \_\_\_\_\_ out that there are still long queues in many branches.  
A) spoken    B) given    C) let    D) pointed
10. The award was received by the manager on \_\_\_\_\_ of his staff.  
A) account    B) behalf    C) place    D) honour

## APPENDIX A

### KEY TO PRACTICE TESTS

#### Grammar Tests

Grammar Test 1: 1-B, 2-B, 3-A, 4-B, 5-D, 6-C, 7-D, 8-B, 9-C, 10-B, 11-C, 12-B  
Grammar Test 2: 1-B, 2-D, 3-D, 4-C, 5-C, 6-B, 7-B, 8-C, 9-B, 10-D, 11-B, 12-A  
Grammar Test 3: 1-D, 2-A, 3-C, 4-D, 5-B, 6-C, 7-D, 8-A, 9-B, 10-C, 11-D, 12-A  
Grammar Test 4: 1-D, 2-C, 3-B, 4-D, 5-C, 6-A, 7-C, 8-B, 9-D, 10-B, 11-B, 12-A  
Grammar Test 5: 1-A, 2-B, 3-B, 4-C, 5-C, 6-D, 7-C, 8-A, 9-B, 10-C, 11-B, 12-A  
Grammar Test 6: 1-A, 2-C, 3-D, 4-B, 5-C, 6-A, 7-D, 8-A, 9-C, 10-A, 11-B, 12-B, 13-B, 14-D, 15-D  
Grammar Test 7: 1-D, 2-D, 3-B, 4-A, 5-B, 6-C, 7-D, 8-D, 9-C, 10-C, 11-C, 12-D, 13-D, 14-A, 15-D  
Grammar Test 8: 1-D, 2-C, 3-B, 4-A, 5-B, 6-B, 7-C, 8-D, 9-B, 10-C, 11-B, 12-B, 13-A, 14-B, 15-C  
Grammar Test 9: 1-B, 2-D, 3-A, 4-C, 5-C, 6-C, 7-B, 8-C, 9-A, 10-B, 11-B, 12-A, 13-B, 14-C, 15-B  
Grammar Test 10: 1-C, 2-B, 3-B, 4-B, 5-D, 6-B, 7-C, 8-D, 9-B, 10-D, 11-D, 12-C, 13-B, 14-B, 15-A  
Grammar Test 11: 1-C, 2-D, 3-C, 4-C, 5-B, 6-A, 7-C, 8-B, 9-D, 10-B, 11-B, 12-A, 13-A, 14-C, 15-D  
Grammar Test 12: 1-C, 2-A, 3-A, 4-B, 5-D, 6-C, 7-B, 8-C, 9-D, 10-A, 11-D, 12-B, 13-C, 14-A, 15-A  
Grammar Test 13: 1-B, 2-C, 3-D, 4-D, 5-A, 6-B, 7-A, 8-B, 9-C, 10-D, 11-C, 12-D, 13-D, 14-B, 15-C  
Grammar Test 14: 1-A, 2-B, 3-A, 4-B, 5-D, 6-D, 7-A, 8-A, 9-B, 10-D, 11-B, 12-C, 13-C, 14-A, 15-D  
Grammar Test 15: 1-B, 2-B, 3-C, 4-A, 5-B, 6-D, 7-C, 8-C, 9-B, 10-C, 11-B, 12-A, 13-C, 14-D, 15-B

#### Vocabulary Tests

Vocabulary Test 1: 1-C, 2-D, 3-A, 4-B, 5-A, 6-D, 7-C, 8-D, 9-B, 10-D, 11-A, 12-A  
Vocabulary Test 2: 1-A, 2-A, 3-D, 4-B, 5-A, 6-A, 7-D, 8-C, 9-B, 10-A, 11-D, 12-C  
Vocabulary Test 3: 1-A, 2-C, 3-B, 4-D, 5-C, 6-D, 7-B, 8-C, 9-D, 10-A, 11-D, 12-A  
Vocabulary Test 4: 1-C, 2-C, 3-B, 4-D, 5-C, 6-D, 7-B, 8-C, 9-D, 10-A, 11-D, 12-A  
Vocabulary Test 5: 1-B, 2-C, 3-D, 4-B, 5-C, 6-C, 7-A, 8-B, 9-C, 10-D, 11-A, 12-C  
Vocabulary Test 6: 1-C, 2-D, 3-A, 4-A, 5-B, 6-A, 7-D, 8-C, 9-C, 10-B  
Vocabulary Test 7: 1-C, 2-C, 3-B, 4-A, 5-B, 6-C, 7-B, 8-D, 9-D, 10-A  
Vocabulary Test 8: 1-B, 2-D, 3-A, 4-C, 5-B, 6-C, 7-A, 8-C, 9-B, 10-D  
Vocabulary Test 9: 1-B, 2-B, 3-D, 4-A, 5-C, 6-D, 7-A, 8-C, 9-C, 10-A  
Vocabulary Test 10: 1-C, 2-C, 3-A, 4-B, 5-A, 6-B, 7-B, 8-D, 9-C, 10-A  
Vocabulary Test 11: 1-D, 2-A, 3-C, 4-D, 5-D, 6-A, 7-C, 8-A, 9-B, 10-D  
Vocabulary Test 12: 1-C, 2-A, 3-B, 4-D, 5-A, 6-D, 7-C, 8-B, 9-B, 10-D  
Vocabulary Test 13: 1-A, 2-D, 3-C, 4-A, 5-B, 6-D, 7-B, 8-A, 9-C, 10-A  
Vocabulary Test 14: 1-C, 2-B, 3-C, 4-D, 5-D, 6-A, 7-C, 8-D, 9-A, 10-B  
Vocabulary Test 15: 1-C, 2-B, 3-B, 4-A, 5-B, 6-D, 7-A, 8-C, 9-D, 10-B

## V.5 БАҲОЛАШ МЕЗОНИ

Талабанинг Амалий инглиз тили фани бўйича ўзлаштириш  
кўрсаткичи қуйидаги мезонлар асосида баҳоланади

Рейтинг тизими асосида баҳолаш мезони

Фаннинг номи	Рейтинг назорати									
	Жорий назорат			Умумий	Мустақил таълим Оралиқ назорат			Умумий	ЯН	Умумий
	Сони	Балл	Жами		Сони	Балл	Жами		Ёзма	Жами
Хорижий тил	1	60	60	60	1	10	10	10	30	100

Талабалар ЖН дан тўплайдиган балларнинг мезонлари

№	Кўрсаткичлар	Жорий назорат баллари	
		Максимал	Ўзгариш оралиғи
1	Дарсларга қатнашганлик ва ўзлаштириш даражаси. Амалий машғулотлардаги фаоллиги, амалий машғулот дафтарларининг юритилиши ва ҳолати	20	0-20
2	Вазифа топшириқларининг ўз вақтида ва сифатли бажарилиши. Мавзулар бўйича уй вазифаларини бажарилиш ва ўзлаштириш даражаси.	20	0-20
3	Оғзаки ўтилган мавзулар юзасидан саволларга жавоб.	20	0-20
Жами ЖН баллари		60	0-60

Талабалар ОН дан тўплайдиган балларнинг мезонлари

№	Кўрсаткичлар	Оралиқ назорат баллари
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		Максимал	Ўзгариш оралиғи
1	Талабаларнинг мустақил таълим топшириқларини ўз вақтида сифатли бажариши ва ўзлаштириш.	6	0-6
2	Тайёрлаган топшириқни тақдимот қилиш.	2	0-2
3	Берилган саволларга жавоб бериш.	2	0-2
<b>Жами ОН баллари</b>		<b>10</b>	<b>0-10</b>

### Талабалар ЯН дан тўплайдиган балларнинг мезонлари

№	Кўрсаткичлар	Оралик назорат баллари	
		Максимал	Ўзгариш оралиғи
1	Грамматик кўникмаларни текшириш.	10	0-10
2	Ёзув кўникмаларини текшириш.	10	0-10
3	Берилган саволларга жавоб бериш.	10	0-10
<b>Жами ОН баллари</b>		<b>30</b>	<b>0-30</b>

#### Умумий кўрсаткич:

Балл	Баҳо	Талабаларнинг билим даражаси
86-100 балл учун талабанинг билим даражаси қуйидагиларга жавоб бериши лозим	Аъло	<ul style="list-style-type: none"> <li>✓ Янги мавзуни Инглиз тилида тушунтириш ва мазмунини оғзаки еркин баён қила олиш;</li> <li>✓ Инглиз тилида ижодий фикрлай олиш;</li> <li>✓ Инглиз тилида мустақил мушоҳада қила олиш;</li> <li>✓ Инглиз тилида оғзаки ахборот бера олиш;</li> <li>✓ Луғат ёрдамида таржима қила олиш;</li> <li>✓ Олган билимларни амалда қўллай олиш;</li> </ul>
71-85 балл учун талабанинг билим даражаси қуйидагиларга жавоб бериши лозим	Яхши	<ul style="list-style-type: none"> <li>✓ Тил ўрганилаётган мамлакат тилида ўз фикрини тушунтира билиш;</li> <li>✓ Мустақил мушоҳада юрита олиш;</li> <li>✓ Тасаввурга ега бўлиш;</li> <li>✓ Луғат ёрдамида таржима қила олиш;</li> <li>✓ Матн мазмунини қисқача тушунтира олиш;</li> </ul>
55-70 балл учун талабанинг билим даражаси қуйидагиларга жавоб	Қониқарл и	<ul style="list-style-type: none"> <li>✓ Билиш, янги мавзуни қисман айтиб бериш;</li> <li>✓ Мавзуни қисман тушуна билиш.</li> <li>✓ Мавзу ҳақида тушунчага ега бўлиш.</li> </ul>

бериши лозим		
0-54 балл билан талабанинг билим даражаси куйидаги ҳолатларда баҳоланади	Қониқарс из	<ul style="list-style-type: none"> <li>✓ Ўқий олмаслик;</li> <li>✓ Гапира олмаслик;</li> <li>✓ Тасаввурга ега бўлмаслик;</li> <li>✓ Билмаслик.</li> </ul>

Фан бўйича саралаш бали 55 баллни ташкил этади. Талабанинг саралаш балидан паст бўлган ўзлаштириши рейтинг дафтарчасида қайд етилмайди.

Жорий **ЖН** ва оралик **ОН** турлари бўйича 55 балл ва ундан юқори баллни тўплаган талаба фанни ўзлаштирган деб ҳисобланади ва ушбу фан бўйича якуний назоратга кирмаслигига йўл қўйилади.

Талабанинг семестр давомида фан бўйича тўплаган умумий балли ҳар бир назорат туридан белгиланган қоидаларга мувофиқ тўплаган баллари йиғиндисига тенг.

**ОН** ва **ЯН** турлари календар тематик режага мувофиқ деканат томонидан тузилган рейтинг назорат жадваллари асосида ўтказилади. **ЯН** семестрнинг охириги 2 ҳафтаси мобайнида ўтказилади.

**ЖН** ва **ОН** назоратларда саралаш балидан кам балл тўплаган ва узрли сабабларга кўра назоратларда қатнаша олмаган талабага қайта топшириш учун, навбатдаги шу назорат туригача, сўнгги жорий ва оралик назоратлар учун еса якуний назоратгача бўлган муддат берилади. Талабанинг семестрда **ЖН** ва **ОН** турлари бўйича тўплаган баллари ушбу назорат турлари умумий балининг 55 фоизидан кам бўлса ёки семестр якуний жорий, оралик ва якуний назорат турлари бўйича тўплаган баллари йиғиндиси 55 балдан кам бўлса, у академик қарздор деб ҳисобланади. Талаба назорат натижаларидан норози бўлса, фан бўйича назорат тури натижалари еълон қилинган вақтдан бошлаб бир кун мобайнида факултет деканига ариза билан мурожаат етиши мумкин. Бундай ҳолда факултет деканининг тақдимномасига кўра ректор буйруғи билан 3 (уч) аъзодан кам бўлмаган таркибда апелляция комиссияси ташкил етилади.

Апелляция комиссияси талабаларнинг аризаларини кўриб чиқиб, шу куннинг ўзида хулосасини билдиради. Баҳолашнинг ўрнатилган талаблар асосида белгиланган муддатларда ўтказилиши ҳамда расмийлаштирилиши факултет декани, кафедра мудури, ўқув-услубий бошқарма ҳамда ички назорат ва мониторинг бўлими томонидан назорат қилинади.

**Якуний назорат** ёзма шаклда ўтказилади.

Якуний назорат максимал 30 баллик тизимда ўтказилади.