

THE ROLE OF HISTORICAL SCIENTIFIC HERITAGE IN GEOMETRY LESSONS

Rasulova Gulnozaxon Azamovna
Kokand State Pedagogical Institute

Maqsudova Shahnoza Azizbek qizi
Graduate student of the Kokand State Pedagogical Institute

ANNOTATION

The article describes the historical data presented in the Geometry textbooks and methods of their using continuously in the teaching process. A consistent sequence of historical data is described in terms of classes.

Keywords: geometry textbooks, historical data, continuity, consistency.

President Of The Republic Of Uzbekistan Sh. In accordance with Mirziyoyev's decision on May 7, 2020 "on measures to improve the quality of education and development of research in the field of mathematics in Uzbekistan", a number of systematic works were carried out in Uzbekistan aimed at establishing mathematics as one of the priorities for the development of Science in 2020, bringing mathematics science and education to a new

The younger generation, which is building the future of our republic, should be given the opportunity to study the innovations of modern science, its complex facets, as well as to study our past heritage.

It is advisable to give an understanding of the contributions of Al-Khorezm, Abu Nasr Farabi, Ahmad al-Fergani, Abu Ali ibn Sina, Abu Rayhon Beruni, Abul Vafo Buzjani, Gidhosiddin Al-Koshi, Omar Khayyam, Nasriddin at-Tusi, Mirzo Ulugbek and the famous Uzbek mathematicians of the present time to mathematics and geometry.

The use of historical information in geometry lessons increases the interest of students in the materials studied, helps them to firmly master knowledge.

There are two main ways to use historical materials: the use of historical materials in the course of the lesson and their use in the organization of extracurricular activities. Comparing geometric facts with the facts of the present time or solving historical issues is not correct in every lesson of geometry, but in the course of the lesson you will have to resort to historical facts more often. But all this should not distract students from the main topic under study. It is better to use historical issues at the beginning or end of the lesson. If the teacher believes that he will fulfill the lesson plan, then he will be able to use it even during the lesson.

It is not necessary to require readers to remember all the historical facts, names and years in which they were told. In the lesson, it is enough for them to get acquainted with a brief history of a problem or issue, remember the period when a discovery took place, hear the name and surname of the mathematician who made the discovery, and, if any, see his portrait. Although this is not all that has been said, part will remain in their memory and will get rid of the claim about the "dryness of Science" that the teacher teaches, while achieving that the lesson will be just as interesting.

History of geometry on the topics of the 7th grade geometry textbook:

The first concepts of geometry appeared in ancient Egypt 4-5 thousand years ago. In those cruises, the water of the Nile River overflowed every year and washed the arable land. Therefore, in order to redistribute crops and determine the amount of tax, it was necessary to carry out the work of marking and measuring in these areas. Ancient Greek scientists studied the methods of measuring the Earth from the Egyptians and called it geometry. "Geometry "is a Greek word and is composed of parts that mean" geo " - Earth," metrio" – measurement.

Miles. avv. In the VII-VI centuries, in ancient Khorezm, as well as in Egypt, Earth measurement work was carried out in the lower part of the Amu Darya.

The first concepts of geometry were also found in ancient Babylon. In particular, historians believe that the Pythagorean theorem was found in Babylon.

The ancient Greek scientist Euclid described in his book The so-called "Foundations", bringing in order all the geometric concepts and properties known up to that time. This book serves as the most important textbook for schools for two thousand years and has gained immense importance in the development of science. The teaching of geometry still relies on the ideas in this book.

Many of the scientists who have lived in the past have dealt with geometry. Our great compatriots Mohammed ibn Musa al-Khorezm, Ahmad Fergani, Abu Rayhan Beruni, Abu Ali ibn Sina, Ulugbek also thoroughly studied Euclid's "foundations" and contributed to the development of this science. In the countries of the East, geometry was called Geometry, adding with engineering, and great importance was attached to it. It is also from this that the word "engineer" is now called an engineer.

Planimetry is the branch of geometry that studies the properties of geometric shapes located in the same plane. And the properties of spatial forms are studied by the so-called stereometry section of geometry.

Point, straight line and plane - the most basic concepts of geometry. Since they are early concepts in geometry science, they are not given a definition. At the same time, they serve as the foundation for the introduction of other concepts.

If we take the tip of the pen with the mark left when we touch the paper, the chalk on the board, or the stars in the sky, they will look so small in our eyes that even if we do not take into account their size. The point is such a geometric embodiment of very small things, the dimensions of which cannot be taken into account. Euclid described the point as a form that has no part in his work called "the negatives".

Lines drawn along the highway, a string pulled taut between the columns, a beam of illumination directed towards the sky, a geometric representation of shapes such as the edge of the paper – give an idea of a straight line. The light beam spreads in a straight line. In fact, a straight line is an infinite form. When we depict it on a sheet of paper, a class board, we limit ourselves to drawing a small piece. However, one should imagine that the straight line has always lasted indefinitely on both sides. The geometric embodiment of the floor, table top, wall, ceiling, notebook sheet, water level in a quiet lake will be a plane. From time immemorial, when measuring cuts and distances, various units of length are used. In Central Asia, for example, units of length such as a syllable, an inch, an ear, a mile were used. In "Boburnoma" 1 E is mentioned as 2 cm, 1 totam = = 4 elik, 1 old = 6 totam, 1 step = 1.5 old, 1 mile = 4000 steps, 1

Shariy units as 2.8 km of the unit. Units of measurement that were not so accurate caused discomfort. Therefore, at the end of the 18th century, meters were adopted in France as a unit of measure of length. Then he spread all over the world.

You got acquainted with the meter benchmark, which is a sample of length, through the textbook “physics” of the 6th grade. There were also units used to measure large or small lengths in relation to the meter. Including: $1 \text{ km} = 1000 \text{ m}$; $1 \text{ dm} = 0,1 \text{ m}$; $1 \text{ sm} = 0,01 \text{ m}$; $1 \text{ mm} = 0,001 \text{ m}$. To measure enormous distances, units such as astronomical unit = 149597870.7 km, light year = 9460730472581 km, Parsec = 3.08567758491.1013 km are used in astronomy.

In addition to international units of measurement, the following units of measurement of length are also used in a number of countries:

1 inch = 2.54 cm 1 mile = 1,609 km.

(derived from the English word inch - finger garden; mile = mile - thousand).

* Fergana's allegory that curses the Nile:

According to historical data, one of the great scholars who grew up in our country, Ahmad Fergani, in 861, re-built a dilapidated structure called the “Nilometer” (that is, the “Nile meter”), which measures the water level in the Nile River near the city of Cairo. The measurement work carried out on this device, which is considered scientifically-technically and architecturally excellent and combines unique geometric solutions in itself, has long been very necessary for farming, and it has survived to this day. In his work “a treatise on making a masterful”, Ahmad Fergani gave proof of an important texture for Astronomy — the nafi C of Ptolemy's theorem. His name was called al-Fergani in Arabic, and in medieval European scientific literature they called Al'fraganus. Ahmad Fergani honor to the crater found on the Moon is named and a statue is erected in Cairo. Our grandfather Ahmad Ferghani is depicted with a statue installed in the center of the city of Fergana and the building of the Nilometer structure on the banks of the Nile River.

* Astrolabia (Usturlob) is an angle measuring instrument that was made by the ancient Greek astronomer Hipparchus in the 2nd century BC . In this instrument, which is very simple in appearance, it was possible to carry out dozens of measuring work. Angular measurements were also carried out at the Ulugbek Astronomical Observatory in Samarkand. This huge cylinder - shaped three-story Observatory had many devices and instruments . Its radius is 42m! Using this device, Ulugbek measured the position of 1018 stars in the universe with amazing accuracy and cited it in his work “Ziji jadidi Garagoni”. European scientists used the Quadrant before the invention of the telescope. He is of course much smaller than the Ulugbek quadrant. Currently, the earth measuring work uses a device called theodolite, which has high accuracy.

* Miles in Egypt. avv. A king named Ptolemy I, who reigned in the 3rd century, wanted to learn geometry lessons from Euclid. After a few sessions, he left hard and asked his teacher, "can't you show me your way easier?" Then Euclid said: "there is no royal path to geometry!" - as long as he answers.

• 5th postulate of Euclid:

There have been many attempts to prove Euclid's 5th postulate using other axioms, to prove in support of the method of hypothesizing the opposite from the sentence. One such scientist Saccery (1733) called his work very interesting: "the experiment that established the first principles of Euclidean or universal Geometry, purified from congenital spots." Unfortunately,

the attempts of both Sakkeri and other scientists went to zoye. In the XIX century, it was proved that the 5th postulate of Euclid is not a wax gin!

• In astronomical science, an important place is occupied by the angle between the equatorial plane of the celestial sphere and the ecliptic (the plane that contains the Earth's orbit). It is called the angle of inclination of the equator to the ecliptic. To calculate it, it is necessary to determine the direction of the northern pole of the celestial sphere (very close to the Polar Star), as well as the height of the day of the spring equinox (March 21) at the moment when the sun rises to the very top. In the Sadhona of Ulugbek ra, it was found that the angle of inclination of the equator to the ecliptic is equal to $23^{\circ}30'17''$ based on extremely high-precision observations.

* Cultivates the ability to solve problems related to making only by means of a simple drawing and a circus - logical observation. Therefore, in Ancient Greece, the solution of issues on this topic was elevated to the level of art. Until now, we have made different geometric shapes using different tools. For example, using a ruler, we drew a straight line, a beam, an incision, a triangle and other shapes. With the help of a ruler and a transporter, we built different angles. And with the help of Sirkul, we made circles and arcs, straight lines parallel and perpendicular to the Gonia.

REFERENCES

1. O‘zbekiston Respublikasi Prezidenti Sh.M.Mirziyoyevning 2020 yil 7 maydagi PQ-4708-son “O‘zbekistonda matematika sohasidagi ta’lim sifatini oshirish va ilmiy-tadqiqotlarni rivojlantirish chora-tadbirlari to‘g‘risida”gi qarori. Chiqish ma’lumotlari.
2. A.A’zamov, B.Haydarov, E.Sariqov, A.Qo‘chqorov “Geometriya” 7-sinf darslik –T.: “Huquq va Jamiyat”, 2017-yil.
3. B.Haydarov, E.Sariqov, A.Qo‘chqorov “Geometriya” 9-sinf darslik –T.: “Huquq va Jamiyat”, 2019-yil.
4. M.A Mirzaahmedov, Sh.N. Islamov va b. “Matematika-10” – T.:“O‘qituvchi”, 2017-yil.
5. M.A Mirzaahmedov, Sh.N. Islamov va b. “Matematika-11” – T.:“O‘qituvchi”, 2018-yil.
6. Расулова, Г. А. "МУЛЬТИМЕДИЙНЫЙ ЭЛЕКТРОННЫЙ УЧЕБНИК-СОВРЕМЕННОЕ СРЕДСТВО ОБУЧЕНИЯ." *Педагогические науки* 4 (2011): 65-66.
7. Жумакулов, Хуршид Кадыралиевич, and Мухсин Салимов. "О МЕТОДАХ ПРОВЕДЕНИЯ И СТРУКТУРЕ ПЕДАГОГИЧЕСКОГО ЭКСПЕРИМЕНТА." *Главный редактор* (2016): 80.
8. Х.Жумакулов, В.К.Жаров. О статической безграмотности выпускников педагогических вузов и не только. Международный гуманитарный научный форум "Гуманитарные чтения РГГУ-2019 "Непрерывность и разрывы: социально-гуманитарные измерения"". – Москва, 2019. –С. 119-123.
9. Esonov, M. M., and D. D. Aroev. "ON THE BASICS OF EDUCATION OF MATHEMATICAL THINKING IN THE MODERN COURSE OF GEOMETRY IN A COMPREHENSIVE SCHOOL." *European Journal of Research and Reflection in Educational Sciences* 9.3 (2021).
10. Ароев, Дилшод Давронович. "ИСПОЛЬЗОВАНИЕ ПОНЯТИЙ" АРИФМЕТИЧЕСКИЕ ДЕЙСТВИЯ НАД МНОГОЗНАЧНЫМИ ЧИСЛАМИ" В МАТЕМАТИЧЕСКИХ ИГРАХ." *Актуальные научные исследования в современном мире* 12-4 (2016): 16-18.

11. Ароев, Д. Д., and Г. М. Бабаева. "ABOUT THE IMPORTANCE OF INTERESTING EXERCISES IN MATHEMATICS LESSONS." *Экономика и социум* 2-1 (2021): 488-491.
12. АБДУНАЗАРОВА, ДИЛФУЗА ТУХТАСИНОВНА, МАНЗУРА СОБИРОВНА ПАЙЗИМАТОВА, and МИРСАИД МУХИДДИН УГЛИ СУЛАЙМОНОВ. "ПРОБЛЕМА ПОДГОТОВКИ БУДУЩИХ ПЕДАГОГОВ К ИННОВАЦИОННОЙ ПЕДАГОГИЧЕСКОЙ ДЕЯТЕЛЬНОСТИ." *Молодежь и XXI век-2015*. 2015.
13. Расулова, Г. А., З. С. Ахмедова, and М. Норматов. "МЕТОДИКА ИЗУЧЕНИЯ МАТЕМАТИЧЕСКИХ ТЕРМИНОВ НА АНГЛИЙСКОМ ЯЗЫКЕ В ПРОЦЕССЕ ОБУЧЕНИЯ." *Ученый XXI века* (2016): 65.
14. Расулова, Г. А., З. С. Ахмедова, and М. Норматов. "EDUCATION ISSUES LEARN ENGLISH LANGUAGE IN TERMS OF PROCESSES." *Учёный XXI века* 6-2 (19) (2016): 62-65.
15. Расулова, Г. А. "МУЛЬТИМЕДИЙНЫЙ ЭЛЕКТРОННЫЙ УЧЕБНИК-СОВРЕМЕННОЕ СРЕДСТВО ОБУЧЕНИЯ." *Педагогические науки* 4 (2011): 65-66.