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FEATURES OF TEACHING THE TOPIC «SOLIDS OF REVOLUTION» IN THE SCHOOL GEOMETRY COURSE THROUGH STEM

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The article addresses the main difficulties in teaching the topic of "Rotational Bodies"in the school geometry curriculum. It analyzes the level of abstraction of the material, the lack of visual aids, and the insufficient interdisciplinary connections. It suggests ways to increase the effectiveness of teaching using the STEM (Science, Technology, Engineering, Mathematics) approach. The article shows how the widespread use of digital technologies and project work contributes to the development of students' spatial thinking and motivation.

The «Rotational Bodies» section of the school geometry course plays a crucial role in forming students' spatial thinking skills and understanding of three-dimensional objects. This topic helps to develop spatial imagination and understand three-dimensional figures. However, traditional teaching methods face problems such as a high level of abstraction, insufficient visual aids, and limited practical connections. In this regard, the STEM approach, by integrating Science, Technology, Engineering, and Mathematics, allows for organizing the learning process in a practical and interdisciplinary manner [1-2].

Many students find it difficult to imagine the rotation of a figure around an axis and its transformation into a three-dimensional body. This leads to rote memorization of formulas and a lack of understanding of the geometric meaning of the topic. Educational materials often present static images and formulas, which do not allow for a complete formation of spatial understanding. The lack of interdisciplinary connections and real-life applications decreases students' interest in the subject.

Using dynamic geometry programs like GeoGebra allows students to observe the rotation process and create models of bodies independently. This helps to develop spatial thinking. In the lesson, students can draw a right triangle in GeoGebra, show its rotation around one leg, and

visualize the formation of a cone. They can change parameters and observe how the volume of the body changes.

Creating models of rotational bodies from paper helps students develop practical skills and understand the volume of bodies.

Including the topic of rotational body moments in physics, engineering designs, and 3D modeling in the curriculum increases students' interest in the subject.

In senior classes, using the concept of the integral to explain formulas for calculating volume and surface area deepens students' mathematical culture.

- Science: Studying the properties of a cone and its volume formula.
- Technology: Modeling rotation in GeoGebra.
- Engineering: Creating a paper cone model.
- Mathematics: Calculating volume using the formula [3].

This comprehensive approach allows students to simultaneously master both theoretical knowledge and practical skills. Using the STEM method helps to overcome traditional challenges in teaching the topic of «Rotational Bodies»: abstraction, lack of visualization, and low motivation. The use of modern technologies, project-based methods, and interdisciplinary connections develops students' spatial thinking and makes knowledge deeper and more lasting. The methods proposed in the article can serve as a basis for improving the school geometry curriculum.

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SOME FEATURES OF TEACHING THE SCHOOL ALGEBRA CURRICULUM

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Algebra is one of the most important sections of the school mathematics curriculum and plays a key role in developing logical and analytical thinking. The school algebra curriculum is structured in such a way that it gradually helps students develop the ability to solve problems of varying complexity, analyze, and make well-reasoned conclusions. In this article, we will examine the main topics of the school algebra curriculum and teaching approaches.

The algebra course in schools covers several key sections, among which the following can be highlighted: