

Список использованных источников

1. Далингер, В. А. Методика обучения математике. Обучение учащихся доказательству теорем : учебное пособие для вузов / В. А. Далингер. – Москва : Издательство Юрайт, 2023. – 338 с.
2. Алгебра : учеб. пособие для 10 кл. / И. Г. Арефьева, О. Н. Пирютко. – Минск : Нар. асвета, 2019. – 285 с.
3. Алгебра : учеб. пособие для 10 кл. / Е. П. Кузнецова и др. – Минск : Нар. асвета, 2013. – 271 с.
4. Алгебра и начала анализа : Учеб. для 10-го кл. / К. О. Ананченко и др. – Минск : Нар. асвета, 2000. – 541 с.
5. Математика : учеб. пособие для 10-го кл. / Л. А. Латотин, Б. Д. Чеботаревский. – Минск : Адукацыя і выхаванне, 2013. – 408 с.
6. Наливко, Н. В. Особенности графических заданий при изучении функций в общеобразовательной школе / Н. В. Наливко, Е. П. Кузнецова // Матэматыка: праблемы выкладання. – 2020. – № 6. – С. 43–51.

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ОБУЧЕНИЕ БУДУЩИХ УЧИТЕЛЕЙ МАТЕМАТИКИ ОЦЕНКЕ ДОСТИЖЕНИЙ УЧАЩИХСЯ ПРИ ПРЕПОДАВАНИИ ПРЕДМЕТА «ЭЛЕМЕНТАРНАЯ МАТЕМАТИКА»

TEACHING FUTURE MATHEMATICS TEACHERS TO ASSESS STUDENT ACHIEVEMENT IN COMBINATION WITH THE "ELEMENTARY MATHEMATICS" LESSON

Помимо преподавания элементарной математики, очень важно научить будущих учителей математики оценивать успеваемость учащихся. Внедрение инновационных технологий в планирование уроков окажет положительное влияние на улучшение результатов обучения. В данной статье кратко рассмотрены способы проведения эффективного оценивания при преподавании предмета элементарной математики будущим учителям математики, а также даны методические указания о том, как составить план урока в будущем и как оценить успеваемость ученика.

In addition to teaching elementary mathematics, it is very important to teach future mathematics teachers how to assess student learning. Introducing innovative technologies into lesson planning will have a positive effect on improving learning outcomes. This article briefly examines how to conduct an effective assessment when teaching a subject of elementary mathematics to future mathematics teachers, as well as a methodical instruction on how to design a lesson plan in the future and how to assess the student's achievement.

Ключевые слова: элементарная математика; будущий учитель; учебная успеваемость; методы оценивания; план урока.

Keywords: elementary mathematics; future teacher; educational achievement; assessment methods; lesson plan.

Training of future teachers of mathematics is the most important issue in the field of education. One of the most important aspects of teaching them is equipping them with the skills to

effectively assess student achievement, especially in the context of elementary mathematics education.

In this ever-evolving educational landscape, the role of future mathematics teachers is not limited to teaching; they must also become skilled evaluators of their students' progress. The assessment process not only measures student understanding, but also guides instructional decisions that allow educators to adapt instructional methods to meet individual needs. Experiential assessment practices foster a deeper understanding of mathematical concepts and create a positive learning environment in which students can thrive.

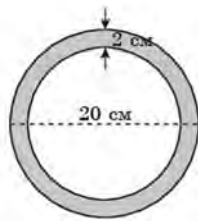
It examines critical strategies and approaches for teaching future mathematics teachers to effectively assess and evaluate student achievement in elementary mathematics. By understanding the multifaceted nature of assessment, these educators can empower the next generation of mathematicians and contribute to the bright future of mathematics education.

On this basis, taking as an example a topic included in the "elementary mathematics" lesson, let's consider as an example a lesson plan in which the student's achievement in this topic is fully evaluated. There are many topics in 11th grade geometry that require students' spatial logic, including "Polygons. The topic "Prism, parallelepiped, cube, pyramid" is very important. In this topic, students quickly get bored when solving problems such as finding the total surface area and volume of figures in a given space. In order to make the lesson interesting, it is very important that the tasks are comprehensive and goal-oriented.

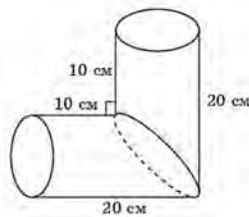
Subject	Geometry			
The topic of the lesson	Finding the volume of a figure in space			
The purpose of training according to the curriculum:	11.3.13 – to know the formulas for finding the volume of a pyramid and an oblique pyramid and to use them in solving problems 11.3.14 – knows the formula for calculating the volume of a cylinder and uses it in calculations 11.3.15 – knows the formula for calculating the volume of a pyramid and an oblique pyramid and uses it in solving problems			
The purpose of the lesson	All students can: determine the types of rotating bodies;			
	The majority of students: knows the formula for finding the volume of figures in space and uses it in solving problems.			
	Some students: can solve complex problems.			
Course of the lesson				
Scheduled stages of the lesson	Action of the teacher	Student action	Assessment	Resources
The beginning of the lesson	I. Organization period: The teacher tells the topic of the lesson and the learning goal. Lesson goals are created together with students. The formula repeats using the "Find Pairs" method. We use the Learning app program.	He greets the teacher, defines the topic and purpose of the lesson. Matches the formula name and the formula displayed on the interactive whiteboard.	If it is correct, the formulas will be green, if it is wrong, it will be red. In case of correctness, students give themselves 1 point.	Interactive whiteboard

The middle of the lesson

pair work using the "think-and-share" method.
 Students are given problems in the book. The reports focus on functional literacy. After completing it, he writes the solutions to the problems on the blackboard using the "stop" method.
 1 task. The length of the cast iron pipe is 2 meters, and the outer diameter is 20 cm-eg. The thickness of the pipe wall is 2 cm. If the density of cast iron is 7.5 g/cm^3 , find the weight of the pipe. Give the answer in kilograms.



2 tasks. Find the volume of the figure consisting of two equal parts of the right-angled cylinders shown in the figure.



Group work using the "group is stronger" method.

1 task. The Palace of Peace and Harmony in the city of Nur-Sultan is in the shape of a regular square pyramid. Its height and base wall are equal to 62 meters. Find the volume of the pyramid.



2 tasks. The picture shows the Pyramid of Cheops, one of the largest buildings in ancient Egypt. Its height is 146 meters, and its sides are 230 meters. Find the volume of this pyramid.

Students perform the task in pairs in notebooks. After it is done, it goes to the board in turn.

	Criterion	Score
1	The formula was used correctly	1
2	Makes calculations correctly	1



Children perform tasks together in 3 groups. During the execution of the task using the "roving reporter" method, each group sends one student to another group, discusses their thoughts with the other group, and returns to share it with their own group.

After making the reports on A3 sheet, bring them to the board and hang them.

Looking at the correct answer on the board, they check alternately using the "you me, me you" method.

The given tasks are checked by the descriptor and evaluated with 4 points.

Using the "two stars one wish" method, students evaluate the task of another group on the

	 <p>3 tasks. A yurt is a dwelling place of nomads from time immemorial. The roof of the yurt is cylindrical, and the roofs, which continue this roof and the house, form a truncated cone. The diameter of the base of the cylinder is 5 meters, the diameters of the bases of the truncated cone are 5 meters and 1 meter, and the heights of the cylinder and the truncated cone are 2 meters. Find the size of the yurt.</p> 		board. He tells his favorite place and his recommendation. Group work is evaluated with 5 points.	
End of lesson	<p>Students provide feedback through the "mentimeter" program. Answers questions using the "KKK" method. What's interesting? What is valuable? What is difficult?</p>	Students enter by scanning a qr code with a smartphone and answer the questions.		

In conclusion, the integration of elementary mathematics with functional literacy tasks and the use of innovative technologies in the classroom will play a crucial role in shaping the future of mathematics education, especially in the preparation of future mathematics teachers. As we navigate the ever-evolving landscape of education, it becomes increasingly clear that traditional teaching methods may no longer be sufficient to engage and equip students with the skills they need to thrive in the modern world.

Often perceived as an intimidating subject, geometry can become an exciting and accessible field of study when combined with functional literacy tasks. This approach not only increases students' geometric understanding, but also equips them with important life skills and promotes a deeper understanding of the real-world application of mathematical concepts.

In addition, the introduction of innovative technologies such as interactive software, virtual simulations and data analysis tools provide a dynamic and interactive learning environment. These tools not only spark student interest, but also provide educators with invaluable insights into individual academic achievement. Using the power of technology, we can tailor instruction to meet the unique needs of each student, fostering inclusive and effective educational experiences.

It is important for future mathematics teachers to embrace these progressive approaches to education. They must not only be proficient in mathematical content, but also skilled in translating that knowledge into engaging and relatable lessons. As the educational landscape continues to evolve, our educators must adapt and innovate, becoming catalysts for changing learning practices..

СПИСОК ИСПОЛЬЗОВАННЫХ ИСТОЧНИКОВ

1. Kojasheva G. O., Zhiembaev Zh. and so on. Training of future teachers of mathematics and computer science in the features of criterion evaluation. Science and Life of Kazakhstan, No. 10, 2019.

2. Remillard, J. T. (2005). Examining key concepts in research on teachers' use of mathematics curricula. *Review of educational research*, 75(2), 211–246.
3. Kojasheva G.O., Zhiembaev Zh.T. Measurement technologies of assessment. Taldykorgan, "Offset" publishing house, 2020.
4. Kurzaeva L. V., Ovchinnikova I. G. Management of the quality of education and modern means of evaluating the results of training: учеб. Allowance, 2015. – 105 p.
5. Grugeon-Allys, B., Chenevotot-Quentin, F., Pilet, J., & Prévit, D. (2018). Online automated assessment and student learning: The PÉPITE project in elementary algebra. In L. Ball, P. Drijvers, S. Ladel, H.-S. Siller, M. Tabach, & C. Vale (Eds.), *Uses of technology in K-12 mathematics education: Tools, topics and trends* (pp. 245-266). New York: Springer. – 76 p.

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ПРИЕМЫ ФОРМИРОВАНИЯ МАТЕМАТИЧЕСКОЙ ГРАМОТНОСТИ НА ОСНОВЕ ЭВРИСТИЧЕСКОГО ДИАЛОГА ПРИ ОБУЧЕНИИ ПОИСКУ РЕШЕНИЯ ЗАДАЧ

TECHNIQUES FOR FORMING MATHEMATICAL LITERACY BASED ON HEURISTIC DIALOGUE IN TEACHING THE SEARCH OF SOLUTIONS TO PROBLEMS

В статье рассмотрены приемы анализа ситуации в процессе применения эвристического диалога на уроках математики при организации поиска решения задач. При этом решается проблема формирования математической грамотности, которая в том числе характеризуется умением анализировать проблему: получать и обрабатывать информацию, упрощать или конкретизировать ситуацию.

The article discusses techniques for analyzing the situation in the process of using heuristic dialogue in mathematics lessons when organizing a search for solutions to problems. At the same time, the problem of developing mathematical literacy is solved, which is also characterized by the ability to analyze a problem: receive and process information, simplify or specify the situation.

Ключевые слова: эвристический диалог; математическая грамотность; упрощение и конкретизация.

Keywords: heuristic dialogue; mathematical literacy; simplification and concretization.

Актуальность формирования математической грамотности определяется концепцией развития системы образования Беларуси до 2030 года, в которой одной из важнейших целей обучения учащихся в учреждениях общего среднего образования (УОСО) является формирование функциональной грамотности, а также разработка научно-методического обеспечения по её формированию [1, с. 13–14].

Проблема формирования *функциональной грамотности* как «способности человека использовать приобретаемые в течение жизни знания для решения широкого круга задач человеческой деятельности, общения и социальных отношений» [2, с. 22–25] рассматривается исследователями в различных аспектах. Но большинство исследований, посвя-