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USING DIDACTIC GAMES IN PRIMARY GRADE MATHEMATICS LESSONS

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Annotation

This article highlights the importance and effectiveness of using didactic games in elementary school mathematics lessons. The possibilities of increasing students' mathematical literacy, logical thinking, and interest in the lesson through didactic games are analyzed. The article provides specific recommendations on the types of didactic games and methods of using them in the lesson. It also considers the issues of consolidating students' knowledge and skills through games, developing their ability to work together, and solving problems.

Key words

primary education, mathematics, didactic games, pedagogy, game methodology, learning process, creative thinking, logical thinking.

Аннотация

В данной статье описывается важность и эффективность использования дидактических игр на уроках начальной математики. Анализируются возможности повышения математической грамотности учащихся, логического мышления и интереса к уроку посредством дидактических игр. В статье даются конкретные рекомендации по видам дидактических игр и их использованию в ходе урока. Также посредством игр рассматриваются вопросы укрепления знаний и умений учащихся, развития сотрудничества и способностей к решению проблем.

Ключевые слова

начальное образование, математика, дидактические игры, педагогика, игровая методика, процесс обучения, творческое мышление, логическое мышление

It is known that the game plays a key role in the activities of a child who has been admitted to the 1st grade and has taken his first steps on the threshold of

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school. The game is their favorite activity, and they try to combine any activity with the game. Therefore, the teacher allows the student to increase the effectiveness of the educational process by using their favorite activity - the game, without crowding it out. The game is an integral part of the child's life. Through the game, the child gets acquainted with the environment, natural phenomena, landscapes, objects, plants, and the animal world. Didactic games are of particular importance in organizing the mental and physical activity of students in primary education. The use of didactic games in mathematics lessons is important in developing students' intelligence and improving their quick calculation skills. In the process of didactic games, students learn to strictly follow the rules of the game, develop a sense of harmony, and a worldview. In the educational process, didactic games should be organized according to the characteristics of students. This is aimed at facilitating the transfer of knowledge to them, ensuring demonstration, and making it possible not to tire or bore students. Didactic games used in the educational process have 2 different classifications. Didactic games can be organized in a variety of ways. Dolls, toys, pictures and handouts, and various geometric shapes can also be used. Didactic games include 4 factors according to their purpose: 1. The task of the game. 2. The action of the game. 3. The rule of the game. 4. The outcome of the game. Before starting each didactic game, the teacher explains to the students the rules, content, and outcome of the game. Students understand and comprehend it and act on this basis. For example, the “Hints” game. The purpose of the game: To develop the skills of verbally solving single-action problems. Game equipment: “-”, “+” signs. Game progress: The teacher reads the problem, and the students show the “hint” with which action the problem should be solved. Problem: 7 Classification of didactic games By content By form of implementation 1. Quiet games 2. Active games 3. Mixed type 1. Competitive games 2. Stage games 1. Salim has 2 black and 4 red pencils. Using which action can we find out how many pencils he has in total? Students show "+". The problem is solved orally. 2. Nigora had 6 notebooks. She gave 3 to her brother. How many notebooks does Nigora have left? Reinforcement: The teacher reinforces their knowledge by asking when to use the "+", "-" addition and subtraction signs. It is required to solve a simple problem. 84 : 4 = 21. Answer: 1 m of woolen fabric costs 21 soums. The synthetic method is a logical operation to establish connections between the individual parts of the object under investigation and study it as a single whole. That is, it is a method of studying the parts of the objects by bringing them together (combining) them. When solving a problem, the object under consideration is stated in the requirements of the problem, and its elements are stated in the

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conditions of the problem. The essence of the synthetic method in searching for a solution to the problem is to establish connections between those given in the conditions of the problem and obtain new information on this basis. After that, connections are established between the data until the required answer is obtained. Let us explain this using the example of the problem considered above. The following numbers are given in the condition of the problem: "4 m of woolen fabric was purchased", "14 m of silk fabric was purchased", "the same amount was paid for silk fabric as for wool fabric", "1 meter of silk fabric costs 6 soums". We imagine the synthetic method as a system of questions and corresponding answers. In this case, the connection between the given data in the condition can be established as follows. l. What can be determined from "14 m of silk fabric was purchased and 1 meter of it costs 6 soums" knowing these? Answer: 6*14 = 84 soums, the amount paid for the purchased silk fabric. 2. What can be learned from "4 m of woolen fabric and 14 m of silk fabric were purchased"? Answer: Looking at the total (14 + 4 = 18 m) of the fabric and 14 – 4 = 10 m, it allows you to understand the solution process more clearly, to understand the connections and relationships between the given and the sought. This helps to fully realize both the didactic, educational and developmental functions of a complex problem.

For this reason, in accordance with the specific objectives of the lesson and the goals of using text problems in mathematics lessons, it is necessary to effectively use various methods of solving and various forms of recording the solution of problems in students' notebooks. When moving on to solving complex problems, the role of analysis increases significantly. It becomes more complex and comprehensive. At this time, the teacher should not forget about the need to develop logical thinking skills in children and lead them from the particular to the general. When solving problems, it is recommended to arrange them in such a way that an easy problem is solved before a complex one, but at the same time it contains some key to solving the complex problem. Solving an easy problem in a clear way should be approached from the given to the sought. In this case, it is necessary to use both the analysis of the condition, the connections between the quantities, the selection of a pair of numbers for the next operation, and some elements of analysis. In this case, it is always necessary to look at why the selected operation is needed and what it will lead to. It is of great importance to understand the situation given in the problem and use it to search for different ways to solve the problem. We will show this with examples of various problems. Problem: "Children returned from the camp in two buses. There were 38 students in one bus, and the same number in the second bus, and 43 of them were boys. How many

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girls returned from the camp?" When working on this problem, the student draws attention to the word "so many" and determines how many children returned in the second bus. After that, most students easily manage to solve the problem and offer such a solution: (38 + 38) – 43 = 33 (girls.) The question of solving this problem in a different way does not arise for either the students or the teacher. But when analyzing the problem, it is enough to say "Can all 43 boys fit in one bus?" (No, 38 boys can fit on one bus, the rest go on the second bus.) After that, suggestions about the second way to solve the problem appear: 43 – 38 = 5 (boys) 38 – 5 = 33 (girls) The two ways to solve the given problem are interesting in that the solution to these problems, when written as the expression (38+38)–43=33, can be found only by one method. The second method can only be achieved by analyzing the situation given in the problem. It is useful to draw the students' attention to this.

Let's look at this problem: "A sewing workshop received 300 m of woolen fabric. 100 identical suits can be sewn from it. 99 m of fabric were used. How many more suits do they need to sew?" When analyzing the problem, we will consider posing a question and consider options that can lead students to different ways of solving it. Option 1. How much depends on one suit: can we know how many meters of fabric are left? (We can know. 300 – 99 = 201 m). How should we discuss the answer to the question of the problem? (201 : 3 = 67 suits) Problem: "In the same time, a motor ship traveled 216 km, and a steamship traveled 72 km. If the speed of the steamship is 24 km per hour, what is the speed of the motor ship?" When analyzing the problem, we will show how the choice of a solution method is guided by questions. 15 1) When solving the problem using the first method, the analysis is conducted on the following questions: What do we know about the time that the steamship and the steamship were on the road? (The problem states that the steamship and the steamship were on the road for the same amount of time.) What quantities do we need to know to find the time? (Speed, distance.) What can we find from the information given in the problem, the steamship time or the steamship time? (We can find the steamship time, because it traveled 72 km and its speed is 24 km per hour.) Then can we answer the question of the problem? (Yes, we can. The steamship's travel time is also 3 hours, and the distance it traveled is 216 km, so its speed can be found.) 2) When considering the solution of the problem using the second method, the discussion is conducted on the following questions: What distance did the steamship travel? (216 km.) What distance did the steamship travel? (72 km.) Can we find out how many times the distance traveled by the steamship is greater than the distance traveled by the steamboat? (216 : 72 = 3 times.) How much time did he spend preparing the details about the steamship and

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the time the steamship was on the way? (15 min.) Do we know how long he planned to prepare one detail? Which of the given information in the problem can be used to answer these 16 questions? (The worker planned 600 minutes to prepare 30 parts, and 600:30=20 (min.) For one part, how many minutes did the worker prepare one part? (15 minutes.) So, the worker worked with high productivity. How much time did he save in preparing one part? (20 – 15 =5 (min.) The worker saved 5 minutes in preparing one part. How many parts did he plan to prepare? (30 parts.) How much time did the worker save in 30 parts? (5*30 = 150 (min.) He saved 150 minutes. Read the question in the problem. Now can we answer it? (After knowing that the worker spent 15 minutes for one part and saved 150 minutes, we can answer the question in the problem: 150 : 15 = 10. The answer is 10 parts. Method 2. How much time did the worker work? (600min.) He How long did the worker spend on preparing the part? (15 min.) Using this information, can we find out how many parts the worker prepared? (600 : 15 = 40. The worker prepared 40 parts.) How many parts did he plan to prepare? (30 parts) Can we answer the question in the example? (40 – 30 = 10. The worker prepared 10 parts more than the task). Method 3. How many minutes did the worker spend on preparing one part? (15 min.) Can we find out how much time the worker spent on preparing the parts assigned to him? (15*30 = 450 (min.) He spent 450 minutes.) How much time did he save? (600 – 450 = 150 (minutes). He saved 150 minutes.) Now, can we find out how many parts he prepared based on the time saved? (150 : 15 = 10. He prepared 10 parts.) Method 4. How much time did the worker spend on preparing one part? (15 minutes.) Is it possible to find out how many parts he prepared in 1 hour? (1 hour = 60 minutes, 60 : 15 = 4. He prepared 4 parts in 1 hour.) How many hours did the worker work? (10 hours.) How many parts did he prepare during this time? (4*10 = 40. He prepared 40 parts.) Now is it possible to answer the question of the problem? (40 – 30 = 10. The worker prepared 10 more details than assigned.) 17 Method 1 Method 2 1) 600 : 30 = 20 (minutes) 1) 600 : 15 = 40 (detail) 2) 20 – 15 = 5 (minutes) 2) 40 - 30 = 10 (detail) 3) 5*30 = 150 (minutes) 4) 150 : 15 = 10 (detail) Method 3 Method 4 1) 15*30 = 450 (minutes) 1) 60 : 15 = 4 (detail) 2) 600 – 450 = 150 (minutes) 2) 4* 10 = 40 (detail) 3) 150 : 15 = 10 (detail) 3) 40 – 30 = 10 (detail) Depending on the purpose of the lesson and the level of preparation of the students, other ways of teaching problem solving in different ways can be used. For example, the method of continuing the initial solution can be used. Using the form of group work, the task of completing the solution and explaining each step is proposed.

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Below are examples of some didactic games held in mathematics lessons. The "Silent" game The purpose of the game: To improve and test students' knowledge and skills about the signs "+", "-" in tens. The game is played in groups. Game equipment: Spreadsheets with numbers, examples, a table. Game progress: Tables are hung on the board, written on the board with chalk. The game is played without making noise. The teacher points to 7 and 5 with a pointer. Students show the distributions written in 2 in their minds. The "Mistakes of the Ignorant" game The purpose of the game: to consolidate students' knowledge about the signs "+", "-" in tens, to develop their knowledge and skills, and the ability to think independently. Game progress: Expressions are written on the board. One student from each row comes to the board and corrects his mistakes. 10-7=4 10-3=6 7-3=5 3+2=6 4+3=8 4+1=6 Game "Who is more agile?". Purpose of the game: To improve the skills of immediacy and resourcefulness. Game equipment: 2 baskets of apples with expressions written on them: 12-6; 2+8; 8 7+5; 4+8; 10-3, etc. "Apples" are written on the table. 2 students come to the board. They say the results of the expressions on the "apples" on the table and start putting them in the basket. The student who does not correctly find the value of the expression cannot put them in the basket. The student who collects the most "apples" in the basket wins. Game "Ingenious". Purpose of the game: To strengthen the skills of solving multiplication and division operations. Game equipment: three flags. Game progress: The game is played between rows. The names of the rows are written on the board and the number of students is divided equally. The teacher gives a flag to the student sitting at the end of each row. The teacher says a number. For example: 6 in the 1st row, 4 in the 2nd row, 5 in the 3rd row. The student who receives the flags passes the flag to the student in the previous row, saying 6 •1= 6. 12 • 2 = 24 ; 24 : 3 = 8 8 •5= 40 ; 40: 4 = 10 Students must create an expression that starts with the number that the result ends with. When the flag reaches the 1st row, the last student must complete the game with an expression that forms the number 6. The line whose flag reaches the first table the fastest is the winner. Flags are attached to the place where the name of the winning line is written. "What shape is this?" game. The purpose of the game: To introduce geometric shapes. To improve the ability to describe them. To develop oral speech. Game equipment: Geometric shapes in envelopes. The course of the game: A student comes to the board. He looks at the shape in the envelope and addresses the students. "The geometric shape in my hand has three sides and three angles, and its sides can be of different lengths. What 9 shapes are these?". The student who correctly describes the shape and guesses the name of the

shape is encouraged. The game "Who is the space hero?". The purpose of the game: 1) To interest students in choosing a profession.

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