



Technology of Didactic Games from Small Tools for Teaching Mathematics at The Preschool Educational Organization

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Abstract: In this article, didactic games and game exercises represent the process of teaching equations when teaching younger students for mathematics. . It is noted that didactic and visual aids are used in these classes.

Keywords: method, teaching, mathematics, mathematical imagination, analysis, synthesis, comparison, didactic game, descriptive material.

Introduction

A game is a huge bright window through which a life-giving stream of ideas and concepts about the world around us bursts into the child's spiritual world. Play is the spark that ignites the flame of inquisitiveness and curiosity. V.A. Sukhomlinsky. Mathematics is a universal method of understanding the surrounding and objective world and its role in modern science is constantly increasing. Changes in conceptual approaches to determining the content and selection of methods for teaching mathematics at school, and the widespread use of modern educational technologies have also determined the requirements for the mathematical training of preschool children.

Today "mathematics is more than a science, it is a language." Studying mathematics improves the culture of thinking, teaches children to reason logically, and develops accuracy in their statements. Didactic games for the formation of mathematical concepts are conventionally divided into the following groups:

1. Games with numbers and numbers
2. Time travel games
3. Space navigation games
4. Games with geometric shapes
5. Logical thinking games

The first group of games includes teaching children to count forward and backward. Using a fairy tale, children are introduced to the formation of all numbers within 10 by comparing equal and unequal groups of objects. Two groups of objects are compared, located either on the lower or on the upper strip of the counting ruler. This is done so that children do not have the misconception that the larger number is always on the top band and the smaller number is always on the bottom.

By playing such educational games as "Which number is missing?", "How much?", "Confusion?", "Correct the mistake", "Remove the numbers", "Name the neighbors", children learn to freely operate with numbers within 10 and accompany them with words your actions. Didactic



games such as “Think of a number”, “Number what is your name?”, “Make a sign”, “Make a number”, “Who will be the first to name which toy is missing?” and many others are used in classes in their free time, with the aim of developing children's attention, memory, and thinking.

The game “Count without making a mistake!” helps to master the order of numbers in the natural series, exercises in forward and backward counting. The game uses a ball. Children stand in a semicircle. Before the game starts, the teacher asks the question in what order (direct or reverse) to count. Then the ball is thrown and the number is called. The one who caught the ball continues to count further. The game takes place at a fast pace, tasks are repeated many times to give as many children as possible the opportunity to take part in it. Such a variety of didactic games and exercises used in classes and in free time helps children learn program material. To reinforce the ordinal counting, tables with fairy-tale characters heading to visit Winnie the Pooh help. Who will be first? Who comes second, etc.

The second group of mathematical games (time travel games) serves to introduce children to the days of the week. It is explained that each day of the week has its own name. In order for children to better remember the names of the days of the week, they are indicated by circles of different colors. Observation is carried out for several weeks, indicating each day with circles. This is done specifically so that children can independently conclude that the sequence of days of the week is unchanged. Children are told that the names of the days of the week indicate which day of the week it is: Monday is the first day after the end of the week, Tuesday is the second day, Wednesday is the middle of the week, Thursday is the fourth day, Friday is the fifth. After such a conversation, games are offered to reinforce the names of the days of the week and their sequence. Children enjoy playing the game "Live Week." For the game, 7 children are called to the board, counted in order and given circles of different colors, indicating the days of the week. Children line up in the same order as the days of the week. For example, the first child with a yellow circle in his hands, indicating the first day of the week - Monday, etc.

Then the game gets more difficult. Children are built from any other day of the week. In the future, you can use the following games “Name it quickly”, “Days of the week”, “Name the missing word”, “All year round”, “Twelve months”, which help children quickly remember the name of the days of the week and the name of the months, their sequence.

The third group includes games for spatial orientation. Children's spatial representations are constantly expanding and strengthened in the process of all types of activities. The teacher's task is to teach children to navigate in specially created spatial situations and determine their place according to a given condition. With the help of didactic games and exercises, children master the ability to determine in words the position of one or another object in relation to another. For example, there is a hare to the right of the doll, a pyramid to the left of the doll, etc. The child is selected and the toy is hidden in relation to him (behind his back, to the right, to the left, etc.). This arouses children's interest and organizes them for the activity. In order to interest children so that the result is better, object games are used with the appearance of some fairy-tale hero. For example, the game “Find a toy” - “At night, when there was no one in the group,” the children are told, “Carlson flew to us and brought toys as a gift. Carlson loves to joke, so he hid the toys and wrote in the letter how they were can be found.” Then a letter is printed in which it is written: “You must stand in front of the teacher's desk, walk 3 steps to the right, etc.” Children complete the task and



find a toy. Then, the task becomes more complicated – i.e. The letter does not give a description of the location of the toy, but only a diagram. According to the diagram, children must determine where the hidden object is. There are many games and exercises that promote the development of spatial orientation in children: “Find a similar one”, “Tell me about your pattern”, “Carpet workshop”, “Artist”, “Travel around the room” and many other games. By playing the games discussed, children learn to use words to indicate the position of objects.

To consolidate knowledge about the shape of geometric shapes, children are asked to recognize the shape of a circle, triangle, and square in surrounding objects. For example, the question is: “What geometric figure does the bottom of the plate resemble?” (surface of a table top, sheet of paper, etc.). A Lotto type game is played. Children are offered pictures (3-4 pieces each), in which they look for a figure similar to the one being demonstrated. Then, the children are invited to name and tell what they found.

The didactic game "Geometric Mosaic" can be used in classes and in free time, in order to consolidate knowledge about geometric shapes, in order to develop attention and imagination in children. Before the game starts, children are divided into two teams according to the level of their skills. Teams are given tasks of varying difficulty. For example:

- Compiling an image of an object from geometric shapes (working from a ready-made dissected sample)
- Work according to the conditions (assemble a human figure, a girl in a dress)
- Work according to one’s own design (just a person’s)

Each team receives the same sets of geometric shapes. Children independently agree on ways to complete the task and the order of work. Each player in the team takes turns participating in the transformation of the geometric figure, adding his own element, making up a separate element of the object from several figures. In conclusion, children analyze their figures, find similarities and differences in solving a constructive plan. The use of these didactic games helps to consolidate children's memory, attention, and thinking. Let's consider didactic games for the development of logical thinking. At preschool age, children begin to develop elements of logical thinking, i.e. The ability to reason and make your own conclusions is formed. There are many didactic games and exercises that influence the development of creative abilities in children, as they have an effect on the imagination and contribute to the development of non-standard thinking in children. These are games such as “Find a non-standard figure, how are they different?”, “Mill”, and others. They are aimed at training thinking when performing actions.

These are tasks for finding a missing figure, continuing a series of figures, signs, and finding numbers. Getting acquainted with such games begins with elementary tasks on logical thinking - a chain of patterns. In such exercises there is an alternation of objects or geometric shapes. Children are asked to continue the row or find the missing element. In addition, tasks are given of the following nature: continue the chain, alternating squares, large and small circles of yellow and red in a certain sequence. After children learn to perform such exercises, the tasks become more difficult for them. It is proposed to complete a task in which it is necessary to alternate objects, taking into account both color and size.



“Without play there is no and cannot be full-fledged mental development. A game is a huge bright window through which a life-giving stream of ideas and concepts flows into the child’s spiritual world. The game is a spark that ignites the flame of inquisitiveness and curiosity.”

V.A. Sukhomlinsky.

In preschool age, play is of utmost importance in the life of a small child. The need for play in children continues and occupies a significant place even during the first years of their schooling. In games there is no real conditioning by circumstances, space, time. Children are the creators of the present and the future. This is the charm of the game.

In every era of social development, children live what the people live. But the world around us is perceived differently by a child than by an adult. The child is a “newbie”, everything is full of novelty for him.

In play, a child makes discoveries about things that have long been known to adults. Children do not set any other goals in the game than to play.

“Play is a need of a growing child’s body. In play, the child’s physical strength develops, a stronger hand, a more flexible body, or rather an eye, intelligence, resourcefulness, and initiative develop,” wrote the outstanding Soviet teacher N.K. Krupskaya.

She also pointed out the possibility of expanding impressions, ideas in play, children’s entry into life, and the connection between games and reality, with life.

For preschool children, play is of exceptional importance: play for them is study, play for them is work, play for them is a serious form of education. Play for preschoolers is a way of learning about the world around them.

The need for play and the desire to play among schoolchildren must be used and directed in order to solve certain educational problems. The game will be a means of education if it is included in the holistic pedagogical process. By directing the game, organizing the life of children in the game, the teacher influences all aspects of the development of the child’s personality: feelings, consciousness, will and behavior in general.

In the game, the child acquires new knowledge, skills and abilities. Games that promote the development of perception, attention, memory, thinking, and the development of creative abilities are aimed at the mental development of the preschooler as a whole.

Mathematics plays a huge role in mental education and in the development of intelligence. Currently, in the era of the computer revolution, the common point of view expressed in the words: “Not everyone will be a mathematician” is hopelessly outdated.

Today, and even more so tomorrow, mathematics will be needed by a huge number of people in various professions. Mathematics contains enormous opportunities for developing children's thinking in the process of their learning from a very early age.

Working in kindergarten, I always set myself the following pedagogical goals: to develop children’s memory, attention, thinking, and imagination, since without these qualities the development of the child as a whole is unthinkable.

Features of educational games

Educational games are all based on a common idea and have characteristic features:



1. Each game is a set of problems that the child solves with the help of cubes, bricks, squares made of cardboard or plastic, parts from a mechanical designer, etc.

2. Tasks are given to the child in various forms: in the form of a model, a flat isometric drawing, a drawing, written or oral instructions, etc., and thus introduce him to different ways of transmitting information.

3. The tasks are arranged approximately in order of increasing complexity, i.e. they use the principle of folk games: from simple to complex.

4. The tasks have a very wide range of difficulties: from those that are sometimes accessible to a 2-3-year-old child to those that are beyond the capabilities of the average adult. Therefore, games can excite interest for many years (until adulthood).

5. A gradual increase in the difficulty of tasks in games allows the child to move forward and improve independently, that is, to develop his creative abilities, in contrast to education, where everything is explained and where only performing traits are formed in the child.

6. Therefore, it is impossible to explain to a child the method and procedure for solving problems and cannot be suggested either by word, gesture, or look. By building a model and implementing a solution practically, the child learns to take everything himself from reality.

7. You cannot demand and ensure that the child solves the problem on the first try. It may not have grown or matured yet, and you need to wait a day, a week, a month or even more.

8. The solution to the problem appears before the child not in the abstract form of the answer to a mathematical problem, but in the form of a drawing, pattern or structure made of cubes, bricks, construction kit parts, i.e. in the form of visible and tangible things. This allows you to visually compare the “task” with the “solution” and check the accuracy of the task yourself.

9. Most educational games are not limited to the proposed tasks, but allow children and parents to create new versions of tasks and even come up with new educational games, i.e., engage in creative activities of a higher order.

10. Educational games allow everyone to rise to the “ceiling” of their capabilities, where development is most successful.

In educational games - this is their main feature - they combine one of the basic principles of learning from simple to complex with the very important principle of creative activity independently according to their abilities, when a child can rise to the “ceiling” of his capabilities.

Conclusion: This union allowed the game to solve several problems related to the development of creative abilities: firstly, educational games can provide “food” for the development of creative abilities from a very early age; secondly, their stepping stone tasks always create conditions that precede the development of abilities;

thirdly, by rising independently each time to his “ceiling”, the child develops most successfully; fourthly, educational games can be very diverse in their content and, moreover, like any games, they do not tolerate coercion and create an atmosphere of free and joyful creativity; fifthly, by playing these games with their children, fathers and mothers quietly acquire a very important skill - to restrain themselves, not to interfere with the child’s thinking and making decisions, not to do for him what he can and should do himself. The five points listed above correspond to the five basic conditions for the development of creative abilities. It is thanks to this



that educational games create a unique microclimate for the development of the creative sides of the intellect. At the same time, different games develop different intellectual qualities: attention, memory, especially visual; the ability to find dependencies and patterns, classify and systematize material; the ability to combine, i.e. the ability to create new combinations from existing elements, parts, objects; ability to find errors and shortcomings; spatial representation and imagination, the ability to foresee the results of one's actions. Taken together, these qualities apparently constitute what is called intelligence, ingenuity, and a creative way of thinking.

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