

**WORKING ON TEXT PROBLEMS IN PHYSICS LESSONS**

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A B S T R A C T	K E Y W O R D S
<p>By solving problems, children get acquainted with facts that are important in the field of knowledge and education. For example, the content of many issues solved in primary classes includes the work of children and adults, the achievements of our country in the national economy, technology, science and culture. The process of solving problems has a positive effect on the mental development of students in a certain method.</p>	<p>Problem, methods, analysis and content, clarification, generalization, comparison, condition of the problem, component</p>

**Introduction**

Solving problems in the general system of teaching physics is one of the types of effective exercises. Solving problems is important for the formation of perfect physical concepts in students, as well as for their mastery of the theoretical knowledge specified in the program. For example, if we want to form a correct understanding of addition in students, it is necessary for children to solve a sufficient number of simple problems of finding sums, almost always performing the act of combining sets. For example: the following problem is given: "An object with a surface area of 200 cm<sup>2</sup> was coated with a silver layer 1.5 mm thick. Determine how many silver atoms are in the coating. The density of silver is 10.5·10<sup>3</sup> kg/m<sup>3</sup>, the molar mass is equal to 108 g/mol.? According to the condition of the matter, children, e.g.

Solution: We will divide the given problem into the following problems.

- 1) The product with a surface area of 200 cm<sup>2</sup> was coated with a silver layer 1.5 mm thick. What is the volume of silver used for this coating?
- 2) What is the mass of the silver coating?
- 3) How many silver atoms are there in the coating?

Given:

Formula:

$S= 20\text{cm}^2$

1) The volume of the body is its cross section

$h=1.5\mu\text{m}$  is equal to the product of surface area and density

$\rho= 10.5\cdot 10^3 \text{ kg/m}^3$

$V=S h$

$M=108 \text{ g/mol}$

2) The mass of an object is its density and volume

$M=108 \text{ g/mol}$  is equal to the product of.  $m= \rho V= \rho S h$

$N_A =6\cdot 10^{23} \text{ mol}^{-1}$

3) In a substance with a mass equal to m

Must find number of molecules  $N = \frac{m}{M} N_A = \frac{\rho Sh}{M} N_A$  using the formula

N=? is found

Solution:

$$S = 20 \text{ cm}^2 = 2 \cdot 10^{-3} \text{ m}^2$$

$$h = 1.5 \cdot 10^{-6} \text{ m}$$

$$M = 108 \cdot 10^{-3} \text{ kg/mol}$$

$$N = \frac{10,5 \cdot 10^3 \cdot 2 \cdot 10^{-3} \cdot 1,5 \cdot 10^{-6}}{108 \cdot 10^{-3}} \cdot 6 \cdot 10^{23} = 1,75 \cdot 10^{20} \text{ ta}$$

By solving many similar problems, children gradually acquire the concept of addition. For example, solving the problem of finding an unknown component of an operation (finding an unknown adder, reducer, etc.), children master the connection between the components and results of arithmetic operations.

Thus, problems are concrete material, with the help of which new knowledge is created in children and the existing knowledge is strengthened in the process of application. will give. Solving problems creates practical learning in children, which is necessary for everyone in everyday life. For example, calculating the price of a purchased item, the cost of renovating a room, calculating when to leave the house so as not to be late for the train.

Using issues as a concrete basis for introducing new knowledge and applying existing knowledge to students plays an incomparably important role in forming the foundations of a democratic worldview in students. When solving problems, the student is convinced that many physical concepts (numbers, arithmetic operations, etc.) have their roots in real life, in the experience of people.

By solving problems, children get acquainted with facts that are important in the field of knowledge and education. For example, many problems solved by students of physics and astronomy are based on the work of students, the achievements of our country in the national economy, technology, science and culture. The process of solving problems has a positive effect on the mental development of students in a certain method, because it requires mental operations: analysis and synthesis, concretization and abstraction, comparison, generalization. For example, when solving a problem, a student analyzes: separates the question from the condition of the problem, separates the given and sought numbers; synthesizes when creating a solution plan, in which he uses concretization (draws the condition of the problem, "imagination"), then abstraction (based on the concrete situation, chooses an arithmetic operation); as a result of solving a certain type of problem many times, the student generalizes the knowledge about the connections between the given and sought numbers in this type of problem, as a result of which the method of solving this type of problem is generalized.

One of the main requirements for higher education today is to equip students with a system of knowledge acquired by the individual society (not a sum of knowledge!), as well as general methods, methods and practices of independent thinking.

The role of physics in the development of independent logical thinking activities of students is of particular importance. It has already been proven by psychologists that thinking in the process of solving problems can be rapidly formed and developed only if this process can be controlled. The point here is that teachers should teach students to solve problems and think independently logically, using the latest achievements of physical education methodology and pedagogical psychology. To do this, instructions such as "Compare", "Look", "Conclude", "Think" are not enough. In order for students to

have a creative approach to solving the problems they want, it is necessary to arm them with special methods of mental activity, that is, to teach them to compare, understand, perceive and draw conclusions.

When starting to solve the problem, first of all, it is necessary to understand and accept it well. For this, it is necessary to imagine the life situation reflected in the problem. The fact that students understand the relationship between physical issues and life increases their interest in the studied science, accelerates the process of acquiring knowledge, skills and abilities by students.

## References

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