

PROBLEMS IN TEACHING NATURAL NUMBERS AND OPERATIONS BETWEEN THEM

Rajabova Lobar Chorievna

Bukhara State Pedagogical Institute

Teacher of the Department of Primary Education

Annotation. *Solving mathematical problems is an important component of teaching mathematics. It is impossible to imagine mastering mathematics without solving problems. The article discusses interesting mathematical problems of teaching natural numbers and performing operations on them.*

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In mathematics, solving problems is an important way to put the theory into practice. Problem solving plays an important role in the process of mastering one or another theoretical material studied in elementary grades and in developing students' thinking skills.

Problems are structured on the basis of a system of practical work. This means that the development of each new concept is always carried out by solving a problem that requires its application, which helps to explain the importance of this concept. The child encounters a problem on the first day of school. In order to determine what life experience and knowledge the students have, the teacher addresses the student through the simplest problem. For example: "You had four pens, and you took one more. How many pens do you have?"

Mathematical problems help students to correctly form mathematical concepts, to understand the environment around them more deeply, and at the same time to develop a child's thinking to solve problems. Another of the most important is that by solving problems, the student thoroughly learns the four arithmetic operations and their properties. The language of mathematics is developed. In short, this is an important result that connects theory with practice.

Elementary school mathematics classes form basic arithmetic knowledge and practical skills in students. In particular, natural numbers and operations on them are an important component of this stage. However, it is more effective to teach these topics not through simple examples and exercises, but through interesting, unconventional problems. Interesting problems activate the student's thinking, increase interest in mathematics, and form the ability to work independently.

Simple problems are used to reveal the content of arithmetic operations, the connections between operations and their components, and to familiarize themselves with the connections between various quantities. Simple problems serve as the basis for developing the knowledge and skills necessary to solve complex problems.

Problems are a useful tool for developing children's thinking abilities and usually include some knowledge. The search for this knowledge requires the problem solver to resort to analysis and synthesis, comparing facts, generalizing, and so on. Teaching these methods of cognition is one of the important goals of teaching mathematics.

In solving problems, interest in the subject develops, independence, freedom, demandingness, diligence, and goal-orientedness develop in general. Children become familiar with the structure of the problem in the second or third lesson. They learn that there is a condition and a question in the problem, and it is especially emphasized that the condition of the problem must contain at least two numbers.

Work on the problem begins with mastering its content. To better understand the content of the problem, students should not only listen to the text, but also read it independently. If the problem is confusing, it is appropriate to give students one to three minutes to think about the content of the problem independently.

The central concept of the entire course of mathematics in preschool and primary school is a natural number. Counting has a complex history of origin and development. F. Engels believed that the concept of number was borrowed

exclusively from the external world, it did not arise from pure thinking. Studying the history of the development of the concept of number and operations with numbers allows us to identify how the process of "objectification" of number occurred, how the concept of number developed, what role does mastering a historically developed means of reflecting number (mastering the numbering system) play in the formation of the concept of number¹.

Many methodologists talk about the advisability of early propaedeutics of the material of primary school. In particular, B.P. Erdniev notes that this is "beneficial in terms of achieving the integrity of knowledge, continuity", believes that there should be no restrictions in any class in "getting ahead" of this or that program, in the free use of mathematical terms, names, formulas, if this is informationally linked to what is being studied and leaves some useful traces in the mind. There is no need to prove how much faster the assimilation is subsequently accelerated.

Number, the most important mathematical concept. Having emerged in its simplest form in primitive society, the concept of number has changed over the centuries, gradually enriching itself with content as the scope of human activity expanded and the related expansion of the range of issues requiring quantitative description and research. In the early stages of development, the concept of number was determined by the needs of counting and measuring that arose in the immediate practical activity of man. Then number became the main concept of mathematics, and the further development of the concept of number was determined by the needs of this science. The concept of natural number, caused by the need to count objects, arose in prehistoric times. The process of forming the concept of natural number proceeded in general terms as follows.

Natural numbers are positive integers counting from 1 (1, 2, 3, ...). Four basic arithmetic operations are performed on them - addition, subtraction, multiplication, division. In primary grades, these operations are taught step-by-step through simple examples.

¹ Nsportal.ru

Interesting mathematical problems are tasks that, unlike simple arithmetic examples, encourage the student to think, research, and draw conclusions.

Interesting problems can be effectively used in the learning process through various methods. In this, didactic games, problem-solving methods, group work and pictorial tasks are important.

The use of interesting mathematical problems in teaching operations on natural numbers: activates the student's thinking; increases interest in mastering the subject; develops practical and logical skills; forms the ability to work independently and cooperate in a group. Thus, in primary education, there is an opportunity to provide students with deep and solid knowledge using interesting problems. It is advisable for teachers to use various methods, demonstrating their creativity in this regard.

In primary school mathematics lessons, while studying the properties and methods of arithmetic operations, the specific laws of multiplication require that they be studied in accordance with the inverse operation, on the other hand, when analyzing special cases, comparison with the specific properties of operations is important.

This has a positive effect on developing students' thinking. We believe that the preparation of problem sets, multimedia and graphic tools in order to use pedagogical technologies used in solving text problems by developing students' computational skills in solving problems in elementary mathematics classes will yield positive results in increasing the effectiveness of elementary mathematics education.

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