

Preparing Future K Primary School Teachers to Teach Equations to School Students

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Annotation: *In order to observe, analyze, and influence, albeit partially, all the processes that take place in nature and society, it is necessary to know the mathematical formula of these processes. The concept of equations is widely used not only in mathematical sciences but also in all exact and natural sciences. That is why the science of mathematics is recognized by all scientists as the main key to the study of all sciences.*

Keywords

From the basic concepts of mathematics, the concepts of "big", "small", "identity", "equality", "equation", "inequality" are also one of the many lessons in the daily practical life of people from the relationships that reveal the essence of the above processes.

It is known from many years of pedagogical observations that the topic of equations and their solution from mathematics materials in primary education is one of the materials that is mastered much later by small school students. The reasons for this are as follows.

This is due to the lack of a definition of the concept of equation that is easily assimilated by small school age students.

Students do not fully understand the essence of the four arithmetic operations and lack the ability to write their properties in the form of numerical expressions or equations while solving problems.

It is known that in elementary school, mathematics lessons begin with the topic of verbal and written numbering of natural numbers, their comparison. In mathematics lessons, students learn the mathematical nature and formula of natural numbers by comparing them with each other, studying the relationships between these numbers as "big", "small" and "equal".

We will now try to use these concepts to give definitions of the concepts of "identity", "equation" and inequality that are acceptable to simple elementary school students.

- a) An equality is one that retains the sign of equality in values that can accept all the letters in its composition.

For example: 1) $a + a = 2a$; 2) $a + b = b + a$; 3) $a + (b + c) = (a + b) + c$ and so on

- b) An equation that retains its sign of equality at some acceptable value of all the letters in its composition is called an equation.

For example: 1) $2a + 6 = 8$; 2) $a + 21 = 30$; 3) $2a + 20 = a + 23$ and so on

In our examples, the first equation $a = 1$, the second equation $a = 9$, and the third equation $a = 3$ retain their equality sign.

- c) all the letters in its composition is called an inequality.

For example: 1) $2a + 5 = 3 + 2a$; 2) $(aa) * 5 = 6$; 3) $2a + 9 = 6 + 2a$ and so on.

Now we will focus directly on the problem of finding equations and their solutions in mathematics lessons, as well as other didactic functions of equations.

If we analyze the elementary mathematics textbooks on the example of the concept of equations, we can observe that it is planned to pass in 4 stages:

- 1) Preparatory work leading to the concept of equation in the 1st stage . This work is done mainly in the first grade;
- 2) In stage 2, the equations are solved using four simple arithmetic operations and a simple operation designed to reveal the content of their properties. Such equations are included in 2nd, 3rd and 4th grade mathematics textbooks;
- 3) Stage 3 is a problem-solving equation and its solution, which is also studied in grades 2, 3 and 4 of primary education;
- 4) when given in the form of numerical or literal expressions, tables, diagrams and equations, the tasks of expressing the content of the problem in text form are studied.

Our main task in Gal is to try to give some of our own methodological recommendations on the didactic work in the textbook on the 4th stage of the study of the above-mentioned equations and to increase the effectiveness of this work.

grade mathematics textbook on the concept of equations ____.

Using the properties of addition and subtraction and the components of the number 3, the problem is to find the numbers that hold the equality in the empty cells.

In the math class, students have so far identified the verbal and written numbering of numbers 1,2 and 3, as well as the constituents of numbers 2 and 3 and their numbers. We perform the function of creating an equation by putting numbers.

Similarly, using the first example given, we can fill in the blank cell in the second example to find that the answer to the example is the number 3, and put the number 3 in the empty cell to form an equation.

of this type are considered during the study of the numbering of two -digit numbers and the properties of arithmetic operations on them.

In the example here, using the interrelationship between the components of addition and subtraction, the task is to put the numbers in empty cells that retain the sign of equality . If given by the addition operation, it must be explained using an example that the number sought is found by the subtraction operation, and vice versa. Preparatory work that leads to such an equation concept in a first grade math textbook is done over a full academic year.

In our opinion, we think that a lot of time was given to such preparatory work in the first grade mathematics textbook. Instead, in the third and fourth quarters of the first grade, students are given the concept of an equation, followed by addition and subtraction.

$$a + x = b; x + a = b; ax = b; xa = b$$

it be appropriate to teach visual equations ?

It is also necessary to work out some of the equations of this kind, and then give the rule of finding these equations by ____ .

the operations of multiplication and division and their properties are studied together with the materials given in the textbook .

$$a \times x = b; x \times a = b; a \div x = b; x \div a = b$$

we think it is possible to begin to teach equations in appearance.

Hence the solution of the equations must also give the rule of finding these operations by ____ .

We give the solution of the first equation.

Rule 1 (equation given by the addition operation): $a + x = b$. If one of the adders to the sum is unknown, you must subtract the known additive from the sum to find it: $x = b - a$.

For example: $5 + x = 9$ $x = 9 - 5$ $x = 4$;

check $5 + 4 = 9$ $9 = 9$

Rule 2 (equation given by multiplication): $ax = b$. If the divisor in the equation given by the subtraction operation is unknown, it is necessary to subtract the difference from the denominator to find it, i.e. $x = ab$.

For example: $10 - x = 6$ $x = 10 - 6$ $x = 4$

check: $10 - 4 = 6$ $6 = 6$

Rule 3 (Equation given by multiplication): $xa = b$. To find the unknown denominator in this equation given by multiplication, add the existing divisor to the known difference, i.e. $x = b \div a$. For example: $x - 5 = 7$ $x = 7 + 5$ $x = 12$

check: $12 - 5 = 7$ $7 = 7$

planned to be studied in the second grade in the primary school mathematics program. In this regard, multiplication and division are given. The following equations $a \times x = b$, $(a \times x = b)$, $x \div a = b$ and $a \div x = b$ are derived from the third quarter of 2nd grade, i.e. students learn multiplication and division and it is advisable to teach them once they have mastered their properties well.

Rule 4 (multiplication by multiplication): $a \times x = b$. To find an unknown multiplier in this equation given by multiplication, the product must be a multiplier, i.e. $x = b \div a$.

For example: $2 \times x = 8$ $x = 8 \div 2$ $x = 4$

check $2 \times 4 = 8$ $8 = 8$

following equations of the form $x \div a = b$ and $a \div x = b$, given by the practice that the student should not win anything else, should be taught after passing the topic of "Shares", because a and b ---
- Depending on the values, their ratios can be fractional numbers.

Rule 5 (equation given by the operation of division) $x \div a = b$. To find the unknown divisor in this equation given by the division operation, the division must be multiplied by the divisor, i.e.

For example: $x \div 5 = 4$ $x = 4 \times 5$ $x = 20$

check: $20 \div 5 = 4$ $4 = 4$

Rule 6 (Equation given by division) $a : x = b$. To find the unknown divisor in this equation given by division, the divisor must be divided by division, ie

For example: $20 \div x = 5$ $x = 20 \div 5$ $x = 4$

check: $20 : 4 = 5$ $5 = 5$

$x + a = b$ and $x * a = b$ given by the operations of addition and multiplication, because the equations are the first and is solved as the fourth equation.

The teacher gives examples of these equations and explains them to the students using questions and answers.

Grade 2 Mathematics textbook {2} will focus on the analysis of equations and mathematical materials devoted to their solution. The concept of equations in elementary education begins with teaching how to analyze the equations $27 + x = 27$ and find their solutions, given on page 69 of the 2nd grade math textbook.

If we pay attention to this equation, its solution will be the number zero.

$27 + x = 27$ given in the concept of equation for 2nd grade students is not well equated in our opinion because students still do not understand the situations that occur when performing arithmetic operations with the numbers 0 and 1 in primary school. that it is impossible to be zero.

For example:

$a + 0 = a$ $a \times 1 = a$ $a - 0 = a$ $a \div 0 = 0$ $a \div 1 = a$

, we think that when choosing the equations given at the beginning of the above article related to each arithmetic operation, it is necessary to choose equations whose solution and components are different from zero.

special point of the multiplication operation, that is, the number of participants, is considered to be equal to each other.

The equations performed by the division operation are on page 136 of the textbook

It is also important to make sure that the equation given to the elementary school students works correctly, that is, to teach self-control by placing the solution of the equation in an unknown place in the equation. It should also be noted that the solution of the equations $x + a = b$ ($a + x = b$) and xa , $ax = b$ given by addition and subtraction should begin in the fourth quarter of the first class. The reasons for this are:

- a) first graders in 1-3 quarters have sufficient knowledge and skills about addition and subtraction and their properties, they find one-to-one equations and their solutions given by addition and subtraction can agree on the rules:
- b) According to the requirements of the national curriculum, it is planned to study simple fractions and decimals in primary education. the period requires that the class be transferred from 3rd grade to 2nd grade and from 2nd grade to 1st grade;
- c) Teaching it will be necessary to carry out this work both depending on the purpose and the requirements of the national program, starting with the practical life of the students.

Here again, it is important to keep in mind that every equation taught in the above elementary grades should begin with giving students the most common problems in their daily practical lives. For example , before reducing the equation $a + x = b$, it is necessary to formulate it on specific problems.

Problem: Davlatbek had 9 notebooks and after his sister gave him some more notebooks, the number of his notebooks was 15. How many notebooks did Davlatbek's sister give him?

As mentioned above, we have seen that examples that lead to such equations are considered during the preparation of students to teach equations . For example $\boxed{2} + \boxed{} =$, we worked on the examples in Figure 6 by selecting a number in the cell that provides the equation. you need to give the rule of finding.

Similarly, the study of equations given using the three arithmetic operations that have come should be tried to give using the problems that students encounter in daily practical lessons .

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