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TEACHING PRIMARY SCHOOL STUDENTS TO SOLVE ISSUES IN ALGEBRAIC WAY

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ABSTRACT:

One of the topics that students find difficult to master in elementary mathematics lessons is the question of solving problems in the algebraic way.

KEYWORDS: Algebraic method, matter condition, the question, the right matter, the reverse matter, numerical expression, literal expression, unknown number, known number.

INTRODUCTION:

It is known that elementary education in mathematics lessons solve problems with the help of algebraic, which is the formulation of the equation, begins with the 3rd grade.

Although the terms science are taught to junior school-age students from the first grade, the study of the equation and its solution begins to be taught from the 3rd grade based on the students' cognitive skills. In our methodical article, which we are writing, we have focused on the question of how to conduct preparatory classes in order before solving problems in an algebraic way.

The solution of two issues from the textbook of mathematics of the 3rd grade is developed on the basis of the above stated goal.

In our article, known as teaching previous elementary school students how to solve arithmetic problems, we focused on the problem of solving arithmetic problems. Primary school teachers should also have mastered the method of solving problems by compiling the equation. Because, in the upper third and fourth grades of primary education, a wide role is given to the work of algebraic solutions, that is, by compiling equations of issues.

We will try to understand the concept of the equation in detail before teaching future primary school teachers the problem of solving problems by compiling equations.

The concept of equation is one of the basic concepts of mathematics, and this concept is widely used in other Exact Sciences, as well.

They gave different definitions to the concept of this equation by scientists who lived in the same period at different times. Despite the fact that these definitions are described differently, they are close to each other, and from all of them the main essence of the equation is revealed.

For example:

1) Published for upper classes of Secondary School. In N.Kseyob's textbook “Algebra” the concept of the equation is described as follows: “The equation is an equation that

remains true only in certain values of the letters that are included in it".

2) In V.R.Kachan's book "The basics of determinants theory" - the concept of the equation is described as follows: "Equation- what are these values if they make the right side of the equation equal to the left between the values of the unknowns in the expression?" is a concept that answers the question.

3) Z.P.S.Alexandrov and A.H.Kolmogorov's in the book of "Algebra", the equation is described as follows: "In its composition, a number denoted by one of the letters is called an unknown number, and the values of the remaining letters are called – each equality equation, in which a certain number is calculated".

The concept of the equation can be described in our opinion as follows, so that it is understandable to them, proceeding from the level of knowledge of the students: "Equality, which is equal only in some values of the letters in its composition, is an equation". For example:

a) $5 \cdot x = 35$; b) $6 + x = 9$ c) $x - 5 = 12$ d) $x \div 6 = 3$

And so equations are an example of the equation. From the fact that is a) in our exercise x = 7 b) in our exercise x = 3 c) in our exercise x = 17 and d) in our exercise x = 18 equations given in values will be.

We can also describe the concept of inequality using the concept of the equation. An expression with two numbers that is not equal in the value of any of the letters from its composition, we can say unequal. As long as we can have inequalities by connecting two expressions with a variable with a large and small mathematical sign. For example:

$$5x + 4 > 2x + 9; \quad 6x - 3 < 9 - x$$

We call equality, which does not fall into these two definitions, an equality that does not make sense.

For example:

$2x + 7 > 2x + 9$; $x \div 4 < x \div 20$ and so from the very fact that compactly these inequalities come from 7 > 9 and 20 < 4 from the first example. These do not fit into reality.

Equations can be divided into several groups, depending on the numbers of unknowns who do not participate in the equations and their degrees.

For example: 1. Such equations are called First-Order linear equations and the general appearance of such equations will be as follows: $Ax + Bx = 0;$

Here the real numbers *A* and *B* are x-an unknown number. The solution of this equation will consist of the points of the straight line in the plane is $Ax + Bx = 0;$

2. If the degree of the unknowns in one unknown equation is equal to two and three, then the equations corresponding to these levels are called quadratic, third-degree equations, and their general appearance will be as follows:

Quadratic equation:

$$ax^2 + bx + c = 0$$

Third-degree equation:

$$ax^3 + bx^2 + cx + d = 0$$

Here a, b, c, d are the real numbers while x is the numerator number. If two is a number.

3. If in two equations the number of unknowns is two, and in the first degree of their degree, the both are considered together, such equations are called a system of equations with two unknowns of the first degree, and and its general appearance is written as follows:

$$\begin{cases} a_1 x + b_1 x + c_1 = 0 \\ a_2 x + b_2 x + c_2 = 0 \end{cases}$$

Here are the optional real numbers of equations: $a_1, a_2, b_1, b_2, c_1, \quad c_2$

The unknown numbers of equations: x and y

4. If the unknowns are given by a function, the equations are called by the names of those functions.

a) If in the composition there is an exponential function, and the unknown quantity is at the level of the exponential quantity, such equations are called Exponential equations. For example:

$$2^{2x} + 2 \cdot 2^{x} - 10 = 0$$

b) if an unknown quantity participates in an argument of a trigonometric function, then the equations are called trigonometric equations. For example:

$$2\sin x + \cos 2x = 0;$$

c) If an unknown quantity participates in the argument of the logorific function is called logarithmic equations. For example:

$$\log_2 x + 2\log_4 x = 0.$$

According to the requirements of the state Test standard of the Republic of Uzbekistan, it is planned to teach pupils only one unknown linear equation of the first degree in primary education. It follows from this requirement that the task is to teach elementary school students to solve text exercises are using the formulation of one unknown First-Order linear equations.

We are now dealing with the issue of solving textual problems by compiling equations in elementary education, which in this article was taken as the main goal.

In the 1-2 classes of primary education, the issues and issues that are given in the textbooks of mathematics are solved mainly by arithmetic. Conditional division of issues into such an arithmetic and algebraic types is given depending on the solutions using its arithmetic number expression formulation or algebraic finite expression, or the formulation of the equation by inserting a predicate.

If we talk about some of the issues that are given in the mathematics lessons of the third grade, then these are issues that can be solved by using both arithmetic and algebraic methods in a single day.

Such issues are issues that are given to primary school students for the purpose of giving them a preliminary understanding of algebraic issues.

On how this can be done, we will try to understand in the example of the 3-th issue on page 7 of the 21-th grade mathematics textbook.

For example: There was 20 m chit, sew shirts from 7 m chit, and that is, so that the chit was taken to sew a pillowcase. How many meters are the chits left?

The given issue is a complex one, we can see that it is made up of two simple issues. If in the first issue it is necessary to find out how many meters of chit was taken to sew a shirt, then in the second issue it is asked how many meters of chit remained.

If we rely on the structure of this issue, then it is a complex matter, which is made up of two simple questions. The first issue can be expressed as follows based on the content of the textual issue.The first exercise: there was a chit of 20 meters. From it, a 7m chit was taken to sew shirts. How many meters of chit remained in the ball? (Solution 20-7=13. The answer is left 13 m chit).

The second exercise. There was a 13m chit taken from him for 7m chit pillow skin. How many meters of chit remained in the ball? (Solution 13-7=6 response 6 meter chit remained).In primary education, the appearance of the performance of the first and second steps separately, separating the mathematical issues with complex texts into such simple issues work is carried out in the first period of solving complex issues.

At the latter stage of solving complex questions, students are taught enough skills and skills, and then they are taught to solve

problems by constructing two actions into a single complex number of expressions.

The solution of the given problem is done by subtracting the value of the complex numerical expression as follows:

$$(20-7)-7=20-14=6(\text{m})$$

If we pay attention to the above method of solving the problem, then this issue can be attributed to the type of arithmetic complex examples.At the stage of obtaining from the arithmetic method of solving complex problems to the algebraic method, work is taught to solve the problem by the possibility of solving the given problem in both ways (if possible, the analysis of the solution is meant to be understandable for at least average mastering students).

In this it is necessary to solve one issue that the teacher has been given in both ways and to substantiate from these methods what purpose it is intended.We understand this by the example of a complex text issue, which is taken from the 3-th grade mathematics textbook, as follows.

Exercise 7: (3-th grade mathematics textbook 20 page.) In 5 identical crates put 30 kg of biscuits. How many such crates are needed to put 54 kg of biscuits?

The solution of this given complex problem is solved by the following two (arithmetic and algebraic) methods.

1. We will solve it in arithmetic method:

$$54\div(30\div5)=54\div6=9$$

The answer 54kg biscuits can be placed in 9 crates.

2. Algebraic methods.The first job you are working with is through unknown access. The question of how many kg of 30kg biscuits can be placed in five crates, if we ask the question of the number of crates *x*, then the answer to the cold in this case will be the solution of the following equation:

$$5\cdot x=30$$

If we solve the equation we can get:

$$x=6$$

So you will need 6-th crate. The second case is to answer the question of the question.

$$54\div6=9$$

So it turns out that 54 kg of biscuits can be made from 6 kg and placed in 9-th crate. It is the period of preparation for the complete transition to the solution of complex issues in the algebraic method by analyzing each of the issue solution. After working out a few of such issues in such two ways, it will be possible to increase the performance of difficult issues in the algebraic method.

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