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METHODS OF TRANSITION OF ARITHMETIC AND GEOMETRICAL MATERIALS IN AN INALIENABLE LINKAGE IN ELEMENTARY MATHEMATICS CLASSES

TURSUNOV Q.
Associate Professors of Samarkand State University

RAJABOV S.
Associate Professors of Samarkand State University,

NURILLAEV S.
Teachers of Samarkand State University,

TURDIMURODOV O.
Teachers of Samarkand State University,

Annotation:
Pupils of primary classes are also playful and during the lesson more attention is paid not to formulas, but to schemes, drawings and geometrical figures. Proceeding from their interest, in order to further increase the effectiveness of mathematics lessons, we will try to give some geometric images of some arithmetic concepts in our article.

Keywords:
Equation, equality, inequality, solution of the equation, solution of the matter, a simple matter, a complex matter, arithmetic method, algebraic method, unknown number, known number.

Mathematics is such a serious science that there are no small things in it. You should also not miss any small opportunities that make it easier to understand.

The word small goes about teaching primary mathematics course materials, which is the basis of mathematics science to students of school age, the importance of this opportunity increases several more times.

The modern science and techniques are developing very quickly. In order to introduce the invention into production, practice, it will be necessary and creative specialists who are well versed in the basics of mathematics. In itself, the task of training specialists is entrusted to higher schools. In order to solve such an honorable and difficult task, it is necessary first to attract young people who showed themselves in high school to higher education, and secondly to organize lessons for students of Higher Education based on the latest innovative pedagogical technology.

The role of mathematics, which is the key to scientific and conscious assimilation of all subjects, despite the fact that the subject in education goes about what stage of education is incomparable. The child's interest in reading the subject of mathematics begins mainly with primary education. This interest is captured and the development depends on how well the teacher knows the subject of mathematics and, at the same time, on his pedagogical skills.

At the same time, it is of great importance to bring the materials of three independent sciences arithmetic, algebra, and geometrical sciences, which form the basis of the elementary mathematics course, to the students in interdependence, complementing one another, while making the elementary mathematics lessons interesting and ensuring its effectiveness.

In such a situation, as far as possible, each lesson should also have a tool that reveals

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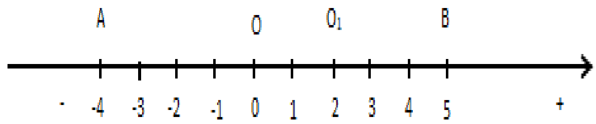
the meaning and essence of each other in these materials, without prejudice to the effectiveness of the lesson, proceeding from the deductive requirements of the lesson.

Now, proceeding from the above requirements, we will look at some of our feedback on the issue of how to connect some arithmetic concepts given in the program of first class mathematics, with geometrical concepts that reveal their meaning, in cooperation with the teacher of words.

First-class mathematics classes begin with the subject of oral and written numbering of one-digit positive numbers. Further topics are studied arithmetic operations on these numbers, their properties.

Many advanced educators have come up with a fertile use of the concept of the number axis, which denotes the geometrical appearance of real integers (all true numbers too) in the delivery of the above-mentioned topics to readers.

First we will dwell a little on the concept of the axis of numbers. Let us be given a straight line, which is located in a horizontal position in the plane. It is impossible to fully determine the position of this point in a straight line, if we take *A* point a lying on this straight line. To determine the position of *A* straight line, we again take another optional point *B*. In this case, too, we cannot fully determine the position of points *A* and *B* in a straight line, we can only determine the relationship of some of these points. This relationship is when one is from the other to the right, and the second is in the chap in relation to the first, and we will be able to determine the distance between them.



To fully determine the position of points *A* and *B* in a given straight line, we optionally select another point *O* to the range of points *A* and *B*. *O* point can be moved along a given straight line only in two directions in the right direction (*B* Point side) and the left direction (*A* point side). We conditionally take the *OB* direction of the *O* point as a positive and *OA* direction as a negative direction. Directions can also be seen in the form of anti-dependence, which does not affect the essence of the issue.

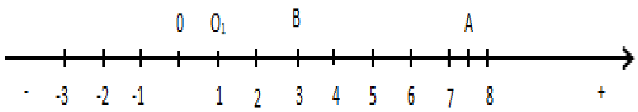
In order to determine at what distance these three given points are at the crossroads of our work in the queue, we take a small optional OO_1 cut from The *OA* and *OB* intersections. Here, too, the length of the OO_1 cross-section is chosen not depending on the length of the *OA* and *OB* cross-sections, but optionally (for example, OO_1 =1 cm, OO_1 = 1 m and OO_1 = 3). Such a selected OO_1 - incision is called a unit incision. A straight line, given such a magnitude in the plane, is called the axis of numbers (in mathematics in general, a system of coordinates in a straight line).

Now we can prove the following confirmation, which is very important in arithmetic science.

To each number in the set of real numbers, a single point in the axis of numbers, and vice versa, to each point in the axis of numbers, a single number in the set of real numbers corresponds.

This is understandable for first-graders and can be described as follows: if we are given a real whole number, we can mark it with a single point on the axis of numbers. If a point is given to us in the axis of numbers, then we can mark it with any real number in the set of real numbers.

As can be seen from the above, we can get a simple ruler, which we use a lot in the process of the lesson; these numbers denote only part of the arrow. It is known that when we perform some actions on natural numbers, we will have to deal with negative integers. Therefore, OA - continue the intersection from point O to the left we will have the opportunity to find the points corresponding to the two halves of the number axis, as well as the points corresponding to the negative real numbers.



We can also use this in the study of “equal”, “small” and “large” relationships between these numbers in determining the order in which they grow or decrease in the verbal numbering (counting) of real integers. Let's look at the arithmetic operations performed on numbers and the geometrical essence of some of their properties to the question of how to form appearance on the axis of these given numbers. As we know, the action of addition is determined by one value in the set of all numbers.

For a random number a and b, there may be four cases in which the insert action follows.

1) $a+b=c$ can be at a > 0 b > 0;

2) $a+b=c$ can be at a > 0 b < 0;

3) $a+b=c$ can be at a < 0 b > 0;

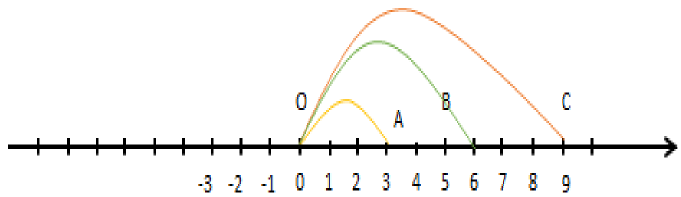
4) $a+b=c$ can be at a < 0 b < 0;

Here, since the components of the action of addition in the first and fourth cases are the same sign, and in the second and third cases the dependent sign, we take one from each of them and indicate the geometrical justification of their sum. We show how the first and second cases are justified in the axis of numbers, the remaining two cases are done in the same way.

1) $a+b=c$ If a > 0 b > 0 it can be at c > 0;

We do this in exact numbers, so that it is understandable to small school-age students.

For example, let a =3 and b = 6, it will be c = 9 at the moment, we will show how the C point is formed from the axis of the numbers of the same 3th number. To do this, we first determine the points *A, B* and *C*, which are in the images on the axis of the numbers 3, 6 and 9.



As can be seen from the drawing

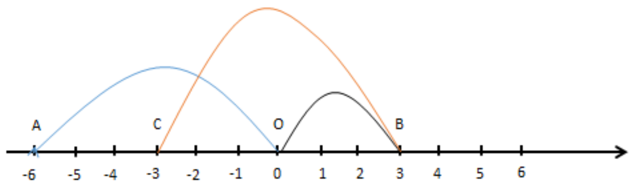
$$OA=3;\ OB=6;\quad OC=9;$$

$$OC=OA+AB=9;$$

To do this, we form O point by giving a direction from point A to point A, and then the image of the number 9 on the axis of numbers C to find the point A, starting from point (because of 9 > 0) we draw 6 chalk to the right. The component C will be the image of the number 3 on the arrow of the numbers, which is the sum of the numbers 6 and 9.

2) $a+b=c$ If a < 0 b > 0; we will try to find the view of the sum of a + b on the axis of numbers.

Let a = -6 and b = 3 at this time it will be (-6) + 3 = -3.



$$OA = -6;\ OB = 3;\quad C = -3;$$
$$OC = -OA + OB = -6 + 3 = -3;$$

We find the points *A, B* and *C*, corresponding to the numbers (-6), 3 and (-3) in the arrow of numbers, since this is 3 > 0 to find the sum of the numbers (-6) and 3, we erase the unit *A* from the point 3 to the right because in the arrow of numbers 3 > 0, the point *B* corresponds to the number. Our work in the queue find the point corresponding to the number (-6) < 0 next work we find the point *C* and make sure that the sum it is seeking is an image in the arrow of the numbers.

Let's also give the rule of adding numbers whose signs are the same when the time comes.

Adding two real numbers with one sign the absolute values of these numbers are added and a general sign is placed on the sum.

In order to add two real numbers to a different sign, the absolute value is divided by the smaller of the greater number, and the sum is put where the absolute value is greater.

Now let's look at the actual practice of multiplication on integers and its rules.

In the multiplication operation, there may also be the following four cases, as in the addition operation.

1) $a - b = c;$ a > 0 b > 0;

2) $a - b = c$ a > 0 b < 0;

3) $a - b = c$ a < 0 b > 0;

4) $a - b = c$ a < 0 b < 0;

In multiplication, both a and b occur in four cases, depending on the sign of all real numbers. Therefore, the process of formation of the turnover will also be as follows.

Accordingly, it is enough to give some rule without touching the issue.

In order to subtract real integers from each other, it is necessary to perform the steps by leaving the diminutive to the opposite of the sign of the divisor, replacing the divisor with the addition sign of the divisor.

For example:

$$(+5) - (+2) = +5 + (-2) = 3$$
$$(-5) - (-2) = -5 + (2) = -3$$

And the private case of the action of adding the action of multiplying and the action of dividing the action of adding the action of multiplying as the reverse action of multiplying their numbers in the arrow can give.

There can only be two cases in the practice of being, if the divisor divides into a divisor without residue, then the above considerations will be in place. If the payroll is to be residual decimal numbers will have to resort to decimal fractions. In this case, it is necessary to give the reader the appearance of these numbers on the axis of numbers after the passage of fractional numbers.

In short, we will be able to describe the geometrical illusion of each arithmetic concept either in the axis of numbers or in the plane, or in the absence of any geometric figure.

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