Methodology Of Teaching Assignments To Work With Non-Standard Solution In Primary School Mathematics Education

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ABSTRACT

The content, form of non-standard issues are mentioned in this article. On what subjects such issues are encountered, as well as on the methodology of teaching primary school students to solve non-standard issues.

KEYWORDS

Non-standard, standard, assignment, geometric, measure, graph, decimal, Unit, Square, logical, contemplation.

INTRODUCTION

"Non-standard "is equivalent to the word combination of" non-standard", and in practice more than threeraydi. The standard phrase" Uzbek National Encyclopedia "is interpreted as follows:" standard (ing. Standard - norm, sample,size) - sample, benchmark, model, which in a broad sense is considered the initial object for comparing other objects".

In the " Explanatory Dictionary of the Uzbek language "it is noted that the standard word 2

means portable:" in one mould"," template"," non-standard " - non-standard, non-standard.

In the process of solving issues, we also use the phrases "standard" (in the mold) and "non-standard". Most in the textbooks of elementary mathematics, most of the questions are those that have a standard way of solving. That is, the given issue depends on what kind (type), there is a solution according to its specific signs. For example, the ways of solving problems related to adding a sum to a number or subtracting the sum from a number are subject to a clear rule (texture). Even if the methods of solving such issues are different, the methods of solving them, depending on the type of issue (type), are performed according to the specific way (rule).

The issue with a non-standard solution path-the tasks do not seek a solution on the basis of one specific path, but on the basis of the content of the issue, a "new", "original" solution path of the issue is sought. That's where his nostalgia is.

The advantage of such teaching tasks is that it develops the logical thinking of the student, the ability to think independently, increases his interest in the subject of mathematics, the task of educating such qualities as difficulty in the process of solving a problem izlash, the feeling of being able to cope with difficulties, aspiration to the goal, patience, resourcefulness.

In the textbooks of mathematics in the elementary class 23 such content (which has a non-standard solution) issue-assignments threeraydi. This is about 0.05% of the teaching tasks in the entire elementary school mathematics textbooks.

Of course, getting acquainted with such a matter-assignments of the elementary school student, motivates him to perform tasks in the form of "non-standard", which he will experience in practice. The reader, thinking independently, solves the problem of supporting his own way of thinking, enjoying the option of a found solution. This, in turn, greatly contributes to the development of creative activity of a primary school student.

Just as non-standard issues can not be divided into certain groups, tasks with non-standard solutions can not be classified. For this reason, examples of assignments with a non-standard solution path can be brought.

MATERIALS AND METHODS

In connection with the fact that the reader draws some geometric shapes, we look at the following assignment:

1-task: to draw a pencil without taking off the notebook, provided that it does not pass through a line twice

a) a triangle; b) a rectangle; C) a rectangle with one diagonal d) a rectangle with two diagonals d) draw geometric shapes in the form of an open convent.

In the composition of this task there are 5 tasks, which make up a certain system, from simple to complex tasks are listed. In the I class, when skills such as drawing cuts of a certain length with the help of a ruler, measuring the sides of a triangle with the help of a ruler are found in the composition, the student is taught to make triangles by first marking 3 pieces (·) on the sheet (not lying on one straight line) ilashni (this indicates that the teacher After the formation of the qualification for making triangles in the

reader, now the reader marks 3 pieces (·) on a sheet without a ruler and learns to connect them with the help of consecutive cuts (without cutting the pencil off the sheet). Here it is permissible for the teacher to say that when drawing a triangle from a student it is possible to draw a triangle that passes through these three points, regardless of which point to start with. On a flat sheet of paper, a reader who has drawn a triangle (without taking the pen off the sheet) will draw a straight rectangle independently (without taking the pen off the sheet) on the sheet (it is desirable that initially a folded sheet was taken). The teacher can give instructions to the student who is suffering from this task: "specify 4 points on the sheet so that 2 points are in one row and 2 points are in one row. Put a pen on one of these points and, without taking the pen away from the notebook, connect the pen on a straight line with the second point, again connect it with the 3-point and again connect it with the 4-point without taking the hand away."

In the composition of this task v), g), d) performance of assignments, it requires much more knowledge, skills and knowledge from the reader. Initially, the teacher is obliged to explain to the reader the concept of a straight rectangle "diagonal". Here is not an unambiguous definition of the concept of" diagonal". It is possible to give an undisclosed definition in the form of a cross section of a straight line that intersects the 1 - and 3-ends of a straight rectangle (or 2 - and 4-ends). C) assignment – the assignment of drawing a rectangle with a diagonal (without taking the pencil out of the notebook and not passing it over a line 2 times), students of the 2-th grade will be able to independently perform the task. It is permissible for the teacher to

emphasize that there are different options for drawing this form. Because from which end of the rectangle the Pencil will certainly draw the desired shape, whether it is on the side of the rectangle or on the diagonal. d) assignment – is considered a problematic assignment for students of the 2 class. Because, the reader can not draw a rectangle with two diagonals on the condition of the assignment, no matter how many attempts. This task is not a solution task, that is, you can not draw a rectangle with two diagonals without passing a line 2 times without taking the pencil out of the notebook. Here it is worth noting that the same thing, "is it possible to give assignments that can not be solved (do not have a solution) to elementary schoolchildren? on the question "quot; some Methodists say that it is impossible to give", some have expressed their opinion that it is possible to give. Experience shows that discussing"tasks that do not have a solution" and showing that it can not be solved is a way to correctly solve this task. As a result of the fact that the pupil in the primary class performs creative tasks in such a context, it helps to form in them such skills as partial searchability, resourcefulness, the ability to find mistakes, independently thinking and draw conclusions. d) in the performance of the assignment, the teacher shows the geometrical figurehead in the form of an "open square" to the 2-th grade students (1-th drawing). The same figure should be drawn in the reader's notebook (according to the condition of drawing the figure). The figure can be drawn in different variants. Any of these options can be recommended by the teacher after the students have completed an independent assignment (for example, drawing 2).
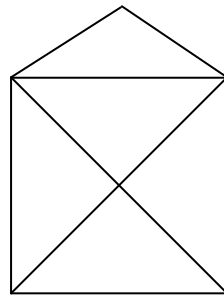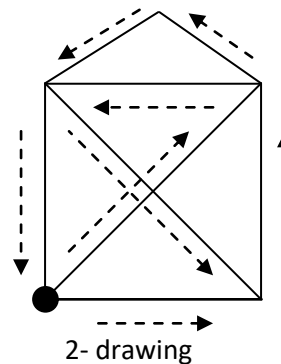
b)   Foot+boll=game
(765+324=1089)

1-drawing   2- drawing

By performing such tasks, students ' ability to correctly and accurately draw geometrical shapes and patterns, along with the content, develops their mental, creative activity.

Assignment 2: How will the sum of the same numbers be equal to the multiplication of the same numbers?

The solution to this task, which will be given to second-graders, will be in two options:

$2+2=2\cdot2$ $0+0=0\cdot0$

An issue with a non-standard solution is the appearance of assignments-these are mathematical rebuses. The use of mathematical rebuses in the course of the lesson increases the students ' interest in the subject of mathematics, the development of the reader's thinking. Such assignments are performed by students with enthusiasm.

3-assignment:

a) ****+1=*****

If we add 1 to a four-digit number, a five-digit number is formed. This is done only when 9999 + 1=10000.

Such assignments serve not only to develop students ' computational skills and skillstiradi, but also to include the necessary logical thinking and the ability to understand the law in computation.

In carrying out some tasks with a standard solution, the reader will have to perform a lot of actions. With a non-standard solution, the task can be quickly completed.

4-task: calculate: a=100-99+98-97+...+4-3+2-1

In carrying out this task, we will discuss: 100-99=1; 98-97=1; 96-95=1; ...; 4-3=1; 2-1=1;

So it turns out that from a pair of numbers to it are separated by a tak number, which is an addition. Each turnover is equal to 1. Such deductions will be (100:2) units. The value of the expression will be equal to $1\cdot50=50$.

Assignments to find angles of a new geometrical shape, which are formed when cutting the corners of a Polygon, also fall into the sentence of assignments with a non-

standard solution path. So we give examples of assignments.

Task 5: a) one angle of the Triangle is cut off (according to the straight line). How many angles are left in the formed form?

The reader often uses the action of multiplication without eating the standard issues in which words such as" cut off"," stayed " are involved. But when finding a solution to this task, we find the answer to the task, which supports the action of addition, and not subtraction. If one end of a triangle is cut along a straight line, then in the formed form there will be four corners.
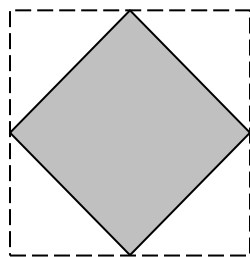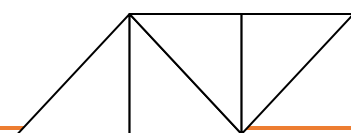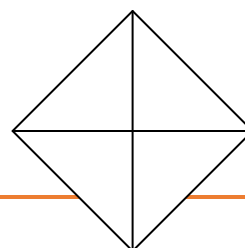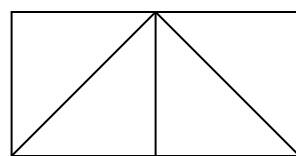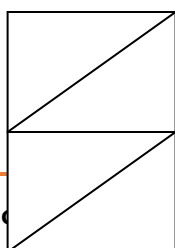

3- drawing

b) quot; what form is formed if the ends of The Square are cut along a straight line?"the assignment requires independent reasoning

The teacher, who browsed the forms in which the pupils made, asks to compare the square face that remained after the scraping of the

from the reader. It can not be given a single answer to this task. Because it will depend on how the square ends are cut.

1) if the ends of the Square are cut at a distance equal to half the side of the Square from the same square tip, then again a square is formed (3-th drawing). It is desirable to give this assignment in the last quarter of the second class, after getting acquainted with the topic "the face of the form". Here, in addition to the assignment given by the teacher, the following assignment can be attached: "what shapes can you make from the square ends, in which the pupils are cut? What conclusion can you draw about the face of the structured form?"These questions are problematic questions for the reader, requiring them to perform topshiri directly on practical content. Each pupil individually performs this task, forming geometrical shapes of different shapes from square ends (rectangular triangles), which are cut into 4 pieces. If one draws a straight rectangle (4-th drawing), another draw a square (5-th drawing), and the other draw shapes and patterns, such as a parallelogram (6-th drawing):

square with the square drawn using these triangles, by drawing the 5-th drawing, that is, the diqat of all the pupils into a square made of four triangles. Students notice that they are evenly floated by placing them on top of each

4- drawing

5- drawing

6- drawing

other.

2) if the ends of the Square are cut at a distance of less than half the side of the Square, starting from the same square end, an 8-angled geometrical shape is formed (7-th drawing). Here, the teacher should first fold the Square in a straight line at a distance equal to the width of the Square, and then fold the formed Rectangle towards the height, and again, after the Square is formed, cut along a straight line at a distance equal to the middle of the square (where 4 pieces are located at the top),   the formation
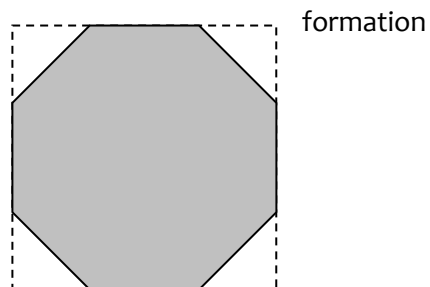
7- drawing

It will be possible to consider in a practical way that as a result of cutting the ends of the square along a straight line in different ways, different geometrical shapes are formed.

7-task: Akmal went to the guest house of his uncle, who lives in a multi-storey house. Uncle lives on the 4th floor. Climb up to the second floor and climb 24 stairs. If the number of stairs on each floor is equal, how many stairs did he go to his uncle's House? The   non   -   standard of the solution of this task is here, the reader can see from 24 to 3 times (not 4 times) from the 4 floor of the rising Akmal from the first floor!) he must know that he is pressing. Answer 24·3=72 (adultery)

8-th task: the Masters received the task of installing telephone Alchemists at a distance of 350 m. At a distance of every 50 m, one telephone Alchemist was installed. If 45 minutes were spent on the installation of each Alchemist, how long did the Masters perform this work?

When performing this task, some readers say that 350:50=7 (units) of alchemy, 45·7=315 (minutes) of time was spent. The fact that this task has a non-standard solution is that at a distance of 350 m every 50 m will need 8 pieces of alchemists, if one is made and The Alchemist is installed. Hence the solution of the issue: 45·8=360 (minute) =6 hours will take time.

9-th assignment: write all two-digit numbers whose decimal number is greater than the number in the unit.

This assignment can be given to 3-th grade students. this assignment will be of interest to students because the assignment solution is multi-valued. The teacher requires the students to write the smallest two-digit number and the largest two-digit number. One of the readers goes out on the blackboard and writes the smallest two-digit number 10, the largest two-digit number 99. Then the teacher asked the readers an additional question: "since the largest two-digit number is 99, what is the previous number?» (98). Compare the numbers in the decimal room and in the unit Room (9>8). Does this number fulfill the condition of the given assignment? (Yes). Now complete the task. If the pupils are thinking independently, and the two-digit number that is formed stands for the number 9 in the decimal point, then all the numbers in the units (except 9) are smaller than 9. So, we make numbers

using 9 and the remaining digits: 98; 97; 96; 95; 94; 93; 92; 91; 90.

As soon as the number in the room of decimals is formed with 9, Then Now 8 is selected as the decimal number of the two-digit number, and the numbers in which the unit numbers are smaller than 8 are selected, and the numbers are formed: 87; 86; 85; 84; 83; 82; 81; 80.

After the students learn the law of drawing up such a number, they divide the pupils of the class into groups, with one group of pupils the number 7 in the decimal room, with the second group of pupils the decimal number 6, with the third group of pupils the decimal number 5, the numbers that satisfy the above condition are formed. For example:

76; 75; 74; 73; 72; 71; 70
65; 64; 63; 62; 61; 60

54; 53; 52; 51; 50

It is worth noting here that separately, a 3-grader eats this example, knowing the law of formation of a series of the most basic numbers, and seeks to draw the appropriate conclusion.

After that, the teacher quot; What are the two-digit numbers that satisfy the above condition?"with the question" quot; will appeal to readers. It is difficult for students to immediately answer this question. After that, the teacher will ask additional questions:

- How many such two-digit numbers, the number of which in the decimal place is nine: (9 PCs)
- How many such two-digit numbers in which the number in the decimal room is 8 (8 units)

- How many such two-digit numbers in which the number in the decimal is 7? (7 PCs) and so on. The teacher asks the students to draw appropriate conclusions and ask the following question.
- How many such two-digit numbers are the digits 1 in the decimal place? (1 piece)

They come up with the question of finding the sum of numbers from 9 to 1. Students will want to find by adding 9 to 8 and 7 to the sum. Then, if the teacher asks for a convenient way to add numbers from 9 to 1, then among the students there will be 9 to 1, 8 to 2, 7 to 3, 6 to 4, the sum of each pair will be 10, and there will be such 10 to 4 units, that is, 10·4, and the pupils will come out who say that So it turns out that such two-digit numbers are 10·4+5=45 units.

CONCLUSION

Thus, by teaching elementary school students to solve a non-standard solution of a problem-tasks, they will find a composition of logical thinking, the ability to think independently. Partial adherence to the solution according to the condition of the issue-assignment leads to the upbringing of the qualities of resourcefulness, questionability, purposefulness in the student.

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