

TECHNOLOGY OF WORK ON COMPARISON TASKS

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ABSTRACT

This article describes the technology used by primary school pupils to work on comparative tasks.

Keywords: Task, sum, add, subtract, multiply, divide, expression, equality, inequality, comparison, commutative property, associative property.

INTRODUCTION, LITERATURE REVIEW AND DISCUSSION

These types of creative assignments are most common in elementary school math textbooks. Such assignments may be different in their structure and content. As the elementary school student performs "gap" tasks, he / she can select the number or action gesture instead of the "gap" and look for the solution. Comparative tasks can greatly contribute to student thinking. This is because the student thinks, reasoning, placing inequality or equality and making appropriate conclusions. In this way, the reader will use logical thinking. In this regard, many students perform such tasks with interest. We can classify the tasks for comparison in the following forms.

1) The task of finding the numbers correctly for equality and inequality.

In Grade I, students are introduced to the first 10 numbers, most notably the "window" examples in the form of $2 = \dots + \dots$, $2 = \dots - \dots$ in the process of learning the "number 3" topic. Of course, the purpose of such examples is to include class I math textbooks in order to gain and consolidate students' knowledge of the contents of the numbers in the top 10, and to explain to the pupil the "principle of the formation of natural numbers." The reader will first understand such window illustrations using visual aids. $2 = \dots + \dots$ equality directly represents a combination of different objects. For example, if there are 2 pictures of these 2 chickens, $\dots + \dots$ this represents a picture of chicks.

In addition, the student can carefully study the composition of the numbers, performing "gap tasks" on the number 5,6,7,8,9,10.

The following "gap" examples of inclusion and subtraction can be given to prepare students for the study of "add and subtract":

$$\begin{array}{cccc} 9 - \dots = 8 & 7 + \dots = 8 & 10 - \dots = 9 & 5 - \dots = 4 \\ 5 + \dots = 6 & 6 + \dots = 6 & 4 + \dots = 5 & 6 - \dots = 5 \end{array}$$

By implementing these examples, the student will gain the knowledge of "addition of number one", "subtraction of number one", "principle of generation of natural numbers", while also providing further insight into the topic of "Addition and subtraction of action and result." to be prepared.

In addition to teaching students how to find the right numbers for equality, it is also important to teach them how to correctly assign the numbers to the "window" for the inequality. For example, the following comparison tasks are useful for a Grade I student in order to strengthen

their knowledge of "Add and subtract" and to strengthen the ability to compare numbers in numbers:

$$2 + 1 > \dots, 2 + \dots > 2, 3 + 1 > \dots, 3 + \dots > 3, 7 + 1 < \dots, 8 + 1 > \dots, \dots + 1 > 7$$

2) Tasks for choosing the correct gestures for equality and inequality.

Students will recognize these assignments from the first quarter of the class. As the reader gets acquainted with the number in every 10, he learns that the number is formed by adding one or subtracting one after the other. This represents the principle of the formation of natural numbers. Of course, instead of a "gap", the appropriate action gestures will be followed by the student's mental activity. Such tasks should first be addressed through the correct selection of one action gesture in numerical equations or numerical inequalities, followed by the use of two action gestures in place. For example, it is important to complete such tasks in the following sequence.

Instead of the "gap" sign the appropriate action and create equality. "

- 1) $3 \dots 1 = 4$ 2) $4 \dots 1 = 3$ 3) $10 \dots 5 = 15$ 4) $15 \dots 5 = 10$
 5) $15 \dots 10 = 5$ 6) $6 \dots 1 \dots 1 = 8$ 7) $8 \dots 1 \dots 1 = 6$ 8) $7 \dots 1 \dots 1 = 7$
 9) $20 \dots 10 \dots 10 = 40$ 10) $50 \dots 10 \dots 0 = 60$

If these items are meant to be completed in Class I math classes, the student will put "+" or "-" in place of the "gap". In the following school year, assignments of this kind are performed using four arithmetic operations.

In the 4th grade, it is advisable to teach students to formulate certain rules, properties, and formulas. From this point of view some formulas in formulas ... (three points), empty cells (the gap), star and the correct choice of action make the pupil think creatively. The learner must be able to select the correct action so that the formula can be correctly represented.

Indeed, a reader who has studied many of the examples of substitution, aggregation, and associative properties of these additive and multiplicative operations, describes these properties in the following formulas:

For the adding action	For the multiply action	Name of the property
$a+b=b+a$	$a \cdot b = b \cdot a$	Replacing
$(a+b)+c=a+(b+c)$	$(a \cdot b) \cdot c = a \cdot (b \cdot c)$	Grouping

The teacher may require the student to formulate the formulas for the student to learn the above formulas, without having to write the actions in the formula, leaving the workspace empty, and using arithmetic operations instead of points:

$$a \dots b = b \dots a$$

$$(a \dots b) \dots c = a \dots (b \dots c)$$

The advantage of this task is that instead of the points, the reader will first write "+" (insert), add-on laws, and then multiply cumulative and associative laws with the "•" multiplication. The question of the teacher, "Can I point out the" divide "or" divide "instead of the points, will be a problem for the fourth-graders. Students solve this problem by providing a "counter example" under the guidance of a teacher. That is, instead of points, the "subtract" and "divide" actions give at least one example of the inability to create a correct equation: or - the substitution property is not appropriate. An example of the "grouping" attribute is not appropriate for separation and division operations.

Students complete the task "Create formulas with appropriate action points instead of points".

Formulation of a single formula

Task	Formula	Properties
$a \dots 0 = a$	$a + 0 = a$	When we add zero to any number, that number will be the same.
	$a - 0 = a$	When we add zero to any number, that number will be the same.
$a \dots 0 = 0$	$a \cdot 0 = 0$	If any number is multiplied to zero, it becomes zero.
$a \dots 1 = a$	$a \cdot 1 = a$	When we multiply zero to any number, that number will be the same.
	$a : 1 = a$	When we multiply zero to any number, that number will be the same.
$0 \dots a = 0$	$0 : a = 0;$ $a \neq 0$	If we divide zero to any other number beside zero it will become zero.
	$0 \cdot a = 0$	When we multiply zero to any number, that number will be the same.

Students with a higher level of assimilation may be advised to write two, three, and other "hidden" formulas in the form of a formula for equality.

Formulation of two practical formulas

Task	Formula	Properties
$(a \dots b) \dots b = a$	$(a+b)-b=a$	When the second adjuster is subtracted from the sum, the first compound will be formed.
	$(a-b)+b=a,$ $a > b$	A decrease is added when the divisor divides.
	$(a \cdot b) : b = a$	The first multiplier is created when the multiplication is in the second multiplier.
	$(a : b) \cdot b = a$	When a division is multiplied by a divisor, a divisor is formed.

Teaching an elementary school student to write formulas through tasks, as well as teaching them to express the properties of written formulas develops logical cognitive activity.

3) Tasks on the rational use of brackets for equality and inequality.

These tasks are reflected in elementary school math textbooks. When first-graders become familiar with the concept of parentheses, familiarize them with numbers and the task of inserting brackets for correct numerical equations with the addition and subtraction, as well as developing and developing computational skills, using the brackets to find the results. is broken down.

In addition to teaching students to complete these tasks, they also develop their independent thinking and creative activity as a result of teaching them how to complete such satisfying tasks.

As a result of the task of generating correct equations as a result of parentheses, the implementation of the task of creating inequalities as a result of parentheses will strengthen students' knowledge and skills in numerical inequalities. It should be noted that elementary

school mathematics textbooks do not have such content. The following are some examples of the problem of correct inequalities:

Task 1: Put the brackets so that the inequalities are right.

$$28:4+2<6 \quad 9\cdot2+6:3<20$$

$$28:4-2>9 \quad 9\cdot2+6:3>30$$

Task 2: Are the inequalities correct? How to put brackets for being correct?

$$28-8\cdot2>20:2 \quad 12-2+5<2\cdot3+2$$

$$36:2+4\cdot7<5\cdot9 \quad 64:4+12<15-2\cdot5$$

In the first of these tasks, if left brackets are asked for correct inequality by placing brackets in the left, the second task assumes that the student can use brackets on both sides of the inequality.

4) Tasks for comparing numbers, expressions.

Comparative tasks are important for an elementary school student acquiring mathematical knowledge, skills and abilities. Each learned concept is manifested as the result of a student's mental operations. One of these mental operations is a comparison.

Beginning with the first lesson of the concept of number, a student who is just starting out in elementary school will be comparing the number of items that characterize the relationship between the set of items.

When the reader is familiar with the number 2, the number 2 represents the number of elements in a two-element set, such as 2 apples, 2 dolls, 2 flags, and so on, knowing that the number is greater than the number of items in the 1-element set: $2 > 1$.

Each natural number in 10 is studied by comparing it with the numbers preceding and following it. The student learns the rule, "Each number is greater than the number preceding it and less than the number after it" as a result of practical tasks.

As students learn to compare numbers within ten, they learn to compare numbers within 20, then 100, and 1,000 and multi-room numbers. When comparing multidimensional numbers, the reader relies on the knowledge of the composition of the natural number in the 10-counting system.

Assignment assignments are provided in elementary school math textbooks. When comparing tasks with comparisons, the teacher first compares the numbers and expressions from the numeric comparison tasks, and then introduces them to the comparison of numeric expressions, which can help to improve learning effectiveness. Comparative tasks can be presented in the words "Compare numbers", "Put symbols $<$, $>$ instead of empty cells", "Place large, small signs so that inequality is appropriate", "Compare numeric expressions".

Class I students are required to compare the following expressions:

$$30 + 12 \text{ and } 30 + 10 \quad 24-20 \text{ and } 24-10 \quad 25 + 10 \text{ and } 25-10$$

When comparing these expressions, the student should be able to compare the action of the participant in the expressions and draw the corresponding conclusions. When comparing expressions $30 + 12$ and $30 + 10$, the students will consider the following. We compare the first joint and the second one. Since $12 > 10$ is $30 + 12 > 30 + 10$. In the same context, further expressions are compared.

5) Tasks on the right choice of numbers, gestures, and brackets for equality, inequality. Such assignments are a general overview of tasks 1, 2, and 3 above. The tasks of this group are: (a) numbers, signs of action to ensure equality, inequality; b) numbers and brackets; (c) Signs and brackets; d) assignment of numbers, gestures, and parentheses.

These types of tasks are very rare in elementary school math textbooks. As a result of teaching students how to do these tasks, they have the ability to think independently. The students are taught such qualities as sensitivity, patience, motivation, perseverance.

In the last quarter of the I class, students can complete the task of generating the correct number of equations by selecting action marks ("+" or "-") and numbers.

Assignment: Find the "+" or "-" sign and the falling number for the records to be accurate.

$$20 \dots\dots = 30 \quad 12 \dots\dots = 12$$

$$15 \dots\dots = 10 \dots\dots 18 = 18$$

Such a task is a creative task to develop students' thinking and requires a lot of knowledge and skill to do so. The learner must be able to select the number that corresponds to the "empty cell" and the appropriate action to replace the points so that equality is correct.

In the second class, "add" or "subtract" such tasks over the number of 100; Performing with the "multiplication" or "divide" activities allows the learner to learn more creative tasks. Also, advising sophomores to do some arithmetic action instead of points for equality or inequality and to place parenthesis is an important tool in developing cognitive activity. We can give examples of this task: Find the appropriate action sign and brackets in place of the points so that equality is correct:

$$\text{a) } 12\dots 8\dots 3 = 1 \quad \text{c) } 8\dots 9\dots 3 = 24$$

$$\text{b) } 15\dots 3\dots 2 = 10 \quad \text{d) } 18\dots 2\dots 0 = 0$$

Of course, in the process of completing such tasks are advisable that the teacher strictly follow the requirement of going from simple to complex. Initially when selecting arithmetic techniques, the teacher recommends adding or subtracting; "Multiply" or "divide"; gestures should be used. The student will then be given an independent choice of actions.

Such creative content assignments are essential to foster student thinking. Interestingly, using equivalents and brackets can create the correct equation with multiple options.

Let us consider the various solutions of the example above:

$$\text{Option 1: } (15: 3) \cdot 2 = 10 \quad \text{Option 2: } 15 - (3 + 2) = 10$$

In Math classes 3 and 4, all of the above types of tasks can be used to make numbers, signs, and brackets a reasonable choice for equality and inequality. This requires the learner to solve the most difficult task of completing and working on such tasks. This is because the tasks of such content are very small in the 3rd grade math textbook.

Here we can see the following examples of assignments:

Tasks for generating the correct equation by gesture and reasonable selection of numbers

T/p	Task View	Task Format	Task Solution
1	$320 \dots 10 \dots 22 = 10$	Practical gestures The task of generating the correct equation by using brackets	a) $(320:10)-22=10$ b) $320:(10+22)=10$
2	$\dots\dots 120 \dots 2 = 100$	The task of choosing the correct numbers and gestures and creating the right equality	a) $40+120:2=100$ b) $340-120:2=100$ c) $218-120+2=100$ d) $222-120-2=100$
3	$20+\dots-8=24$	The task of choosing the correct numbers and brackets and creating the right equation	a) $(20+12)-8=24$ b) $20+(12-8)=24$
	$160-\dots+20=120$		a) $(160-60)+20=120$ b) $160-(20+20)=120$
4	$\dots\dots 2 \dots 20 = 5$	Assignment of correct equation of numbers, gestures and brackets	a) $200:(2 \cdot 20)=5$ b) $(50 \cdot 2):20=5$ c) $(27-2)-20=5$ d) $27-(2+20)=5$

If we can make use of comparative tasks in elementary school math, we can help students develop independent, free-thinking people, while increasing their interest in science.

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