

# Developing Students' Skills of Calculating Addition and Subtraction within the "Hundred"

Muzraf Rabbimov

Assistant Professor, Jizzakh State Pedagogical Institute, Jizzakh, Uzbekistan

## ABSTRACT

This article discusses the process of developing students' numeracy skills in the study of addition and subtraction in hundreds in the teaching of mathematics in primary school.

**KEYWORDS:** Verbal, facial, addition, subtraction, calculation, ability

**How to cite this paper:** Muzraf Rabbimov "Developing Students' Skills of Calculating Addition and Subtraction within the "Hundred"" Published in International

Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-5 | Issue-6, October 2021, pp.1714-1718,

URL: [www.ijtsrd.com/papers/ijtsrd47647.pdf](http://www.ijtsrd.com/papers/ijtsrd47647.pdf)



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## INTRODUCTION

The development of students' verbal arithmetic skills in the teaching of mathematics in primary school is currently relevant. is one of the topics.

The main purpose of this article is to analyze the meaning of addition and subtraction in primary school, especially in mathematics classes I and II, and the methodological support of the problem of formation of students' numeracy skills, and develop appropriate methodological recommendations.

According to the requirements of the program for primary school, when learning to add and subtract numbers within 100, students will need to learn not only verbal calculation methods, but also a certain set of theoretical knowledge. Therefore, based on the practice properties learned by students in the first grade, verbal calculation methods are introduced for all cases of addition and subtraction within 100. Preparatory work must first be done in disclosing the properties and appropriate calculation methods. At the same time, students learn the sum of numbers and the difference of numbers, get acquainted with double equations, learn to write expressions in parentheses,

as well as learn to replace two-digit numbers with the sum of their room additions.

## RESEARCH

In the study of addition and subtraction within 10, it is advisable to use the notation with two equals in order to explain in writing the methods of calculation. For example:  $5 + 4 = 5 + 2 + 2 = 9$ ,  $8 - 3 = 8 - 2 - 1 = 5$ , such writing then serves to understand and prepare the writing of the substantiation of properties and calculation methods.  $34 + 4 = (30 + 4) + 4 = 30 + (4 + 4) = 30 + 8 = 38$

The following is used to explain the parentheses: "Add 2 to the sum of 5 and 3"! To indicate whether the number should be added to the said sum, the sum should be enclosed in parentheses:  $(5 + 3) + 2$ . Students should be taught to read and write parentheses correctly:  $10 - (3 + 4)$  - Subtract the sum of numbers 3 and 4 from 10. At this time, students are taught to replace two-digit numbers with the sum of their room additions:  $35 = 30 + 5$ . The study of verbal addition and subtraction is carried out in the following order.

- Add and subtract two-digit numbers ending in zero.
- Methods of adding numbers to the sum and calculating accordingly.
- Subtract the number from the sum, add the sum to the number and subtract the sum from the number.

When explaining the verbal addition and subtraction of two-digit numbers ending in zero, the addition and subtraction of single-digit numbers is repeated, and it is performed in a similar way. For example: to find the sum of  $60 + 20$ , it is enough to add 2 decimals to 6 decimals,

To find the difference of  $60 - 20$ , it is enough to subtract 2 decimals from 6 decimals:

$$\begin{array}{l} \text{That is: } 60 + 20 = ? \quad 60 - 20 = ? \\ \hline 6 \text{ ten} + 2 \text{ ten} = 8 \text{ ten.} \quad 6 \text{ ten} - 2 \text{ ten} = 4 \text{ ten} \\ 60 + 20 = 80 \quad 60 - 20 = 40 \end{array}$$

The study of a property (rule) is studied as follows.

In the 1st stage, the "property" of operations on sets of objects is opened and expressed.

In step 2, the property is applied to solve specially selected examples in a variety of ways, and in a particularly convenient way.

In the 3rd stage, the object of study is the calculation methods based on the properties of arithmetic operations.

A high degree of generalization is achieved by comparing the properties studied in step 4 and the calculation methods.

We will now cover the methodology of working in these stages.

In step 1, explaining the rule of adding numbers to a set, children are told that there are 3 different ways to add a number to a set, and that they all have the same result. Demonstrative tools should be used to make learning understandable. (fruits, postcard...) written on the board  $(5 + 2) + 3$ . It is required to find the value of this expression in 3 different ways. Previously, students were familiar with the method of calculating the sum and adding a number to the result, but without knowing the other method, they face a difficult, problematic situation. The teacher does the following: He puts 5 and 2 more pencils in one glass and 3 pencils in another glass. Then you are asked to find the total number of pens in different ways. Such an addition to the problem is understandable.

$$\begin{array}{l} (5 + 2) + 3 = 7 + 3 = 10 \quad (5 + 2) + 3 = (5 + 3) + 2 = 10 \\ (5 + 2) + 3 = 5 + (3 + 2) = 10 \end{array}$$

After performing a series of similar exercises, the generalization is determined: to add a number to the sum, you can calculate the sum and add the result to the number, add the number to the first term and add the result to the second term, and the result can be added to the first join.

It is not necessary to ask students about this rule; it is enough to ask them to explain how to solve examples. It is important that students be able to use appropriate terms when explaining solutions: For example:  $(5 + 2) + 3 = (5 + 3) + 2 = 10$ . "We add the number 3 to the first term 5 and the result to the second term 2." Note that you do not need to assign a number to this or that method. It is important that students can find the result in any way.

### EXAMPLES

In the second stage, the work on mastering the properties is carried out through special exercises. Exercises are performed under the guidance of a teacher, and then independently. Example: I. Read the example and calculate the result in different ways:  $(4 + 2) + 3$

Solution: 1) Calculate the sum of  $(4 + 2) + 3 = 6 + 3 = 9$  and add 3 to it.

2) We add  $(4 + 2) + 3 = (4 + 3) + 2 = 9$  3 to the first term and add the second term to the result.

3) We add  $(4 + 2) + 3 = 4 + (2 + 3) = 9$  3 to the second term and as a result we add the first term.

II. Calculate in a convenient way:  $(8 + 6) + 4$   $(30 + 3) + 5$   $(40 + 2) + 30$

In doing such exercises, students need to visualize the three methods of finding the result and choose the most convenient one, as well as justify why the chosen method is convenient. For example;  $(8 + 6) + 4 = 8 + (6 + 4) = 8 + 10 = 18$  It is convenient to add to the right.

III. Complete the entry:

$$(40 + 7) + 2 = 40 + (\dots) \quad (50 + 1) + 20 = (50 + 30) \dots$$

IV. Solve problems based on action properties in a variety of ways.

Problem: Zuhra has a notebook with 5 cells and 3 lines. He gave 2 notebooks to his friend. How many notebooks are left in Zuhra? This problem can be solved in different ways on the basis of demonstrations.

$$(5 + 3) - 2 = 8 - 2 = 6$$

$$(5 + 3) - 2 = (5 - 2) + 3 = 3 + 3 = 6$$

$$(5 + 3) - 2 = 5 + (3 - 2) = 5 + 1 = 6$$

Students who explain the subtraction of a number should be shown that it is not always possible to find the result in three different ways. ; If one of the two terms is less than the divisible number, the solution can be done in two ways:  $(60 + 4) - 30 = 60 + 4 - 30 = (60 - 30) + 4 = 30 + 4 = 34$   $(60 + 4) - 30 = 64 - 30 = 34$   $(6 + 4) - 5$

$$(6 + 4) - 5 = 10 - 5 = 5 \quad (6 + 4) - 5 = (6 - 5) + 4 = 1 + 4 = 5$$

can also be explained by examples such as

In step 3, work is done on calculation methods based on the relevant rule. The study of each method or group of methods is based on a single plan: first preparatory work is carried out; then the method of oral calculation with the help of instructions is revealed; Finally, exercises will be performed to strengthen the knowledge of calculation methods and the formation of verbal arithmetic skills. After studying the properties of adding numbers to the sum, we consider the methods of cases  $34 + 2$ ,  $34 + 20$ . In order to prepare for the solution of such examples, the representation of a two-digit number in the form of the sum of room additions, as well as  $(50 + 4) + 2$ ,  $(50 + 4) + 20$  examples can be solved in a convenient way. During the solution, students say that it is convenient to add units to units and decimals to tens.

A special lesson is devoted to solving the method.  $46 + 30$  is written.

- How to replace the number 46 with the sum of room additions?  $(40 + 6)$  So,  $46 + 30 = (40 + 6) + 30$

- Read the expression on the right? Add 30 to the sum of 40 and 6

- How to add a number to the sum? 30 to 40 ga.

- Calculate the result. The entry will look like this:

$$46 + 30 = (40 + 6) + 30 = (40 + 30) + 6 = 70 + 6 = 76$$

The case of  $46 + 3$  is considered in the same way.  $46 + 3 = (40 + 6) + 3 = 40 + (6 + 3) = 49$

Comparing records and methods are similar (in both cases the first additive was replaced by a room additive) and what are different (in the first example we added 30 to the first additive and in the second example 3 to the second additive, because it is convenient to add units to units, tens to tens) then students will understand and complete the complete solution of examples  $34 + 20$ ,  $34 + 2$ :

$$34 + 20 = (30 + 4) + 20 = (30 + 20) + 4 = 50 + 4 = 54$$

$$34 + 2 = (30 + 4) + 2 = 30 + (4 + 2) = 30 + 6 = 36$$

So, students come to the following conclusion: first we replace the number with the sum, and then solve it in the most convenient way. It is very important to develop the ability to explain the solution based on

the property in such a way, because later the study of addition and subtraction within 100 will be carried out in the same way. As a result, students will be able to work independently. Students will be introduced to a short explanation to develop skills. Let's replace the number with the sum in your mind, read the example and tell how easy it is to add a number to the sum, tell the result.

Example:  $43 + 30$ , we add 30 to 40, we get 70, we add 3 to get 73.  $43 + 30 = 73$  then the calculation methods for cases  $54 + 6$ ,  $3 + 45$  are revealed. This case is not much different from the previous one, in case 1 the sum of units is a decimal, it must be added to the decimals.  $54 + 6 = (50 + 4) + 6 = 60$  In case 2 it is necessary to use the substitution property.  $48 - 30$ ,  $48 - 3$  cases,

$$48 - 30 = (40 + 8) - 30 = (40 - 30) + 8 = 10 + 8 = 18 \quad 48 - 3 = (40 + 8) - 3 = 40 + (8 - 3) = 40 + 5 = 45$$

$30 - 6$  case. The methods of solving  $48 - 30$ ,  $48 - 3$  are opened in the same way as before.

Case  $30 - 6$  differs from the previous ones in that it is a decreasing number of rooms and should be replaced by "convenient additions"  $(20 + 10)$ ,  $30 = 20 + 10$ ,  $40 = 30 + 10$ ,  $90 = \dots$   $50 = \dots$   $30 - 6$  is explained by sticks, using three garden sticks, each with 10 sticks.

One garden stalk is removed, 6 stalks are taken from it, 4 sticks are left. These sticks will be added to the remaining 20 sticks.

$$30 - 6 = (20 + 10) - 6 = 20 + (10 - 6) = 24$$

After studying the property of adding the sum to the number, the table cases of addition by ten are entered.  $(7 + 5, 9 + 8 \dots)$ . Students will learn the general method of addition, that is, to add the first number to 10 and add the remaining units of the second addition, and to replace the second addition with the sum of such additions. one of these participants must fill the first number with 10.

To learn this, you need the following exercises.

-Fill each of the numbers with 10: 5,6, 7, 8, 9

In the case of  $7 + 5$ , divide 5 by two, so that one of them fills 7 by 10.  $(3 + 2)$

-perform calculations in a convenient way.  $6 + (4 + 3)$ ,  $7 + (3 + 1)$ ,  $9 + (6 + 1)$ ,.....

-calculate according to the sample.

$$7 + 5 = 7 + 3 + 2 \quad 7 + 6 = 7 + 3 + 7 + 7 = 7 + 3 +$$

The results of the table are gradually remembered. First the cases of equal joins  $(6 + 6, 7 + 7 \dots)$ , Then other cases are studied, and the table of all cases of addition by passing the decimal is made.

$$9 + 2 = 11 \quad 8 + 3 = 11 \quad 7 + 4 = 11 \quad 6 + 5 = 11$$

$$9 + 3 = 12 \quad 8 + 4 = 12 \quad 7 + 5 = 12 \quad 6 + 6 = 12$$

$$9 + 4 = 13 \quad 8 + 5 = 13 \quad 7 + 6 = 13$$

$$9 + 5 = 14 \quad 8 + 6 = 14 \quad 7 + 7 = 14$$

$$9 + 6 = 15 \quad 8 + 7 = 15$$

$$9 + 7 = 16 \quad 8 + 8 = 16$$

$$9 + 8 = 17$$

$$9 + 9 = 18$$

It is useful to complete such an assignment to remember this table well.

-Find examples from the table where the answer is 11, 12....

The number 11 is the sum of what joins. 13-9... during exercise. It is also possible to strengthen the skills of multiplication for cases. 13 is 9 and 4, so  $13 - 9 = 4$

14-6 is based on the replacement of the divisor by the sum of the convenient joins. This is done with the help of visual aids. 6 is replaced by the sum of 4 and 2, first the first term is subtracted, and then the second term is subtracted from the result. Such an inscription is created on the board.  $14 - 6 = 14 - (4 + 2) = (14 - 4) - 2 = 8$

Other methods can also be considered.

$$14 - 6 = (10 + 4) - 6 = (10 - 6) + 4 = 8 \quad 14 - 6 = (8 + 6) - 6 = 8 + (6 - 6) = 8$$

Then pairs of addition and subtraction examples are included for comparison:

1)  $25 + 8$  and  $25 - 8$ ; 2)  $50 + 12$  and  $50 - 12$ ; 3)  $63 + 18$  and  $63 - 18$

$$1) \quad 25 + 8 = 25 + (5 + 3) = (25 + 5) + 3 = 33 \quad 25 - 8 = 25 - (5 + 3) = (25 - 5) - 3 = 17$$

$$2) \quad 50 + 12 = 50 + (10 + 2) = (50 + 10) + 2 = 62 \quad 50 - 12 = 50 - (10 + 2) = (50 - 10) - 2 = 38$$

$$3) \quad 63 + 18 = 63 + (10 + 8) = (63 + 10) + 8 = 81 \quad 63 - 18 = 63 - (10 + 8) = (63 - 10) - 8 = 45$$

Thus, knowing these learned rules allows students to justify the methods of calculating addition and subtraction of numbers within 100.

Therefore, the methods of verbal calculation are grouped in the following order.

I. Adding the sum to the number.

$$34 + 20 = (30 + 4) + 20 = (30 + 20) + 4 = 54 \quad 34 + 2 = (30 + 4) + 2 = 30 + (4 + 2) = 36$$

$$54 + 6 = (50 + 4) + 6 = 50 + (4 + 6) = 60$$

II. Subtraction of a number from the sum.

$$48 - 30 = (40 + 8) - 30 = (40 - 30) + 8 = 18 \quad 48 - 3 = (40 + 8) - 3 = 40 + (8 - 3) = 45$$

$$30 - 6 = (20 + 10) - 6 = 20 + (10 - 6) = 24$$

III. Add the sum to the number.

$$9 + 5 = 9 + (1 + 4) = (9 + 1) + 4 = 14 \quad 36 + 7 = 36 + (4 + 3) = (36 + 4) + 3 = 43$$

$$40 + 16 = 40 + (10 + 6) = (40 + 10) + 6 = 56 \quad 45 + 18 = 45 + (10 + 8) = (45 + 10) + 8 = 63$$

IV. Subtract the sum from the number.

$$14 - 6 = 14 - (4 + 2) = (14 - 4) - 2 = 8 \quad 45 - 12 = 45 - (10 + 2) = (45 - 10) - 2 = 33$$

$$36 - 7 = 36 - (6 + 1) = (36 - 6) - 1 = 29 \quad 45 - 18 = 45 - (10 + 8) = (45 - 10) - 8 = 27$$

$$40 - 16 = 40 - (10 + 6) = (40 - 10) - 6 = 24$$

In stage 4, it is planned to perform special exercises that allow to generalize the properties of actions and differentiate this knowledge. Such exercises not only master the properties and methods of calculation, but also prevent many mistakes. For example,  $(40 + 20) - 4$  and  $40 - (20 + 4)$ ,  $63 - 20$  and  $63 - 23$  It is useful to mix similar examples without requiring comparison, so that students can make comparisons independently and find the most rational way to solve the example. learn to choose. Methods of addition and subtraction of two-digit numbers using the rules of addition and subtraction are added to the sum. In this case, the solutions of the examples are written with explanations as follows.

$$36 + 23 = (30 + 6) + (20 + 3) = (30 + 20) + (6 + 3) = 50 + 9 = 59.$$

$$65 - 21 = (60 + 5) - (20 + 1) = (60 - 20) + (5 - 1) = 40 + 4 = 44.$$

## CONCLUSION

In summary, the formation of students' verbal addition and subtraction skills in the teaching of mathematics in the primary grades has a positive effect on increasing their interest in the lessons, ensuring the effectiveness of the lessons. 'rsatadi.

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