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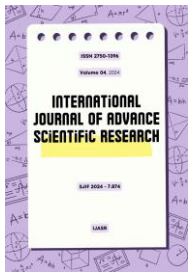

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Research Article

WORKING ON ARITHMETIC OPERATIONS IN PRIMARY SCHOOL LESSONS

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Abstract

This article highlights the topic of working with arithmetic operations in primary school mathematics lessons. It discusses how to teach students the arithmetic operations of addition, subtraction, multiplication, and division, focusing on when and in what order these operations should be performed.

Keywords

Subtraction, multiplication, addition, division, arithmetic, mathematics, quantities, decimal counting system, set of natural numbers.

Introduction

The specific feature of mathematics programs for primary grades lies in the integration of various types of arithmetic and geometric materials within a single topic. Simultaneously, different quantities are studied. For example, in Grade 1, within the topic "Addition and Subtraction," these operations are practiced both within the set of the first ten numbers and within the set of line segments.

Teaching methods for arithmetic operations in mathematics

The main objectives for teachers in this topic include:

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1. Introducing students to the essence of addition, subtraction, multiplication, and division operations.

2. Ensuring students use appropriate calculation methods, such as:

- Adding and subtracting by parts.

- Using the commutative property of addition.

- Understanding relationships between sums and addends to facilitate subtraction.

3. Developing skills and abilities in addition, subtraction, multiplication, and division.

The study of addition and subtraction is divided into several interrelated stages. In the "Hundreds" section, students learn to number within 100 while simultaneously studying length measurements. Throughout primary education, students form concepts about natural numbers and arithmetic operations. This includes understanding the properties of numbers, the decimal system, and arithmetic operations, along with mastering the associated calculation methods.

Practical exercises in early mathematics lessons include combining two sets of objects, establishing correspondence between elements of two sets, and determining parts of a given set.

Key features of arithmetic operations:

- Exploring the properties of arithmetic operations and their relationships with terms and results. For instance:

If $6 \times 4 = 24$, it is connected to division as $24 \div 6 = 4$ and $24 \div 4 = 6$.

- Developing calculation skills through oral and written methods integrated into every topic.

Examples of oral and written calculations:

- Oral:

$276 + 432 = (200+400) + (70+30) + (6+2) = 600+100+8 = 708$

- Written:

Calculations performed with step-by-step explanations.

In Grades 1 and 2, oral calculation skills are developed. These methods, along with written calculations, rely on understanding the properties of operations and their implications for relationships between components and results.

Study of addition and subtraction within 100:

Students learn the following theoretical concepts:

- Adding and subtracting numbers based on sums and differences.

- Understanding the interrelations between components and results of operations.

As students practice arithmetic operations within specified limits, they build a systematic understanding of arithmetic. Repeated reference to these concepts deepens and expands critical mathematical ideas while solidifying skills in

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counting, measuring, and performing calculations.

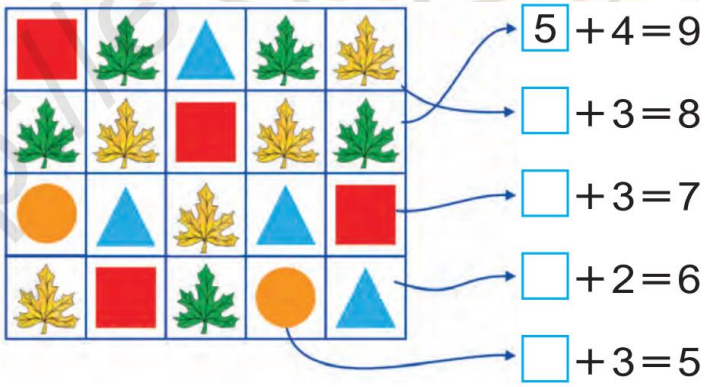
Key learning outcomes:

1. Mastery of arithmetic operations with numbers up to 100.

2. Proficiency in calculation methods.

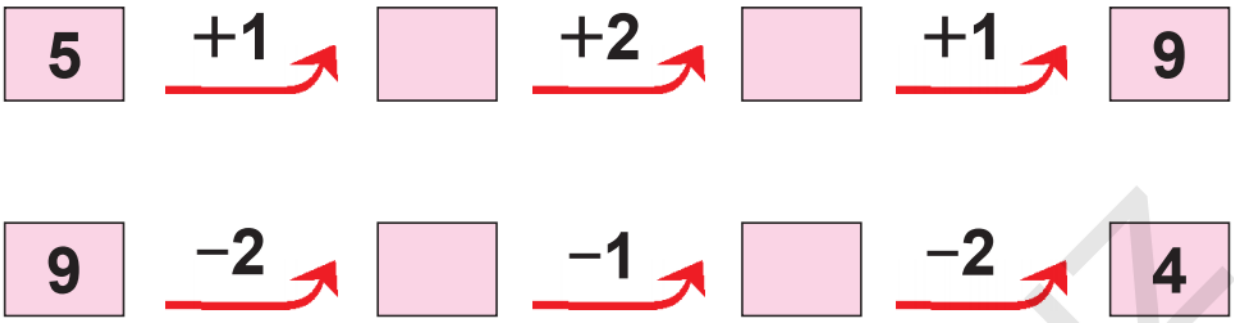
3. Ability to compare expressions based on their values.

Through consistent practice, children transition from performing operations with sets to understanding numerical relationships and solving arithmetic problems, forming a solid foundation for further mathematical study.



Initially, this is done by performing appropriate operations on sets of objects, such as combining two sets and then removing a part of the combined set to count the remaining elements.

Later, it is carried out using certain methods of performing operations on numbers, such as counting one by one, grouping and adding, or subtracting during counting, among others.



For example, when we add 1 to 9, we get 10, and then by subtracting 1 from 10, we return to 9. This concept needs to be explained using various methods and approaches. As we can see, based on a single image, it is possible to create multiple problems with different conditions. In such tasks,

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students approach the problem based on their imagination and reasoning abilities.

Conclusion

In conclusion, the problems used in primary education practice provide varying levels of convenience for forming the didactic principles of teaching students to perform arithmetic operations. This situation necessitates categorizing problems into groups based on the degree of their impact on the development of these principles.

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