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METHODOLOGY OF TEACHING "FRACTIONS" IN PRIMARY SCHOOL

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ANNOTATION: The article examines the methodology of teaching "Fractions" in primary school. It highlights the importance of this topic in developing students' understanding of parts of a whole, logical thinking, and cognitive activity. The authors analyze the stages of studying fractions, the role of visual aids and hands-on learning, and share reflections based on teaching practice. The paper emphasizes the need for gradual and meaningful learning of numerators and denominators through practical exploration and guided discovery.

Key words: fractions, primary school, teaching methodology, visualization, practical activity, mathematical thinking, education, numerator, denominator, number line.

INTRODUCTION

Modern mathematics education in primary school is aimed not only at developing computational skills, but also at fostering logical thinking, reasoning abilities, drawing conclusions, and applying knowledge in real-life situations. One of the most important topics is the study of common fractions, as it lays the foundation for further mastery of algebraic and geometric material in higher grades.

The study of the topic "Fractions" in Grade 3 is based on previously acquired knowledge about dividing a whole into equal parts. For most children, this is their first encounter with a new type of numbers that represent not whole quantities but parts of a whole. Therefore, the teacher's task is to make this process understandable, engaging, and closely connected with students' practical activities.

The purpose of teaching this section is to develop students' conscious understanding of fractions, their ability to read, write, and compare fractions, as well as to solve simple problems involving finding a part of a number and a number by its part.

The study of the topic "Fractions" is based on the principles of visualization, gradual progression, and active student participation. Familiarization with the concept of a part begins with practical actions: dividing objects, shapes, and segments into equal parts. Students see that if a circle is divided into four equal parts and one of them is taken, it represents one fourth, written as 1/4.

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In the initial lessons, it is important not to provide formal definitions. Children should "discover" the concept of a fraction themselves and understand that a fraction is a way of representing a part of a whole. For this purpose, the following are widely used:

- sets of shapes (circles, squares, rectangles) divided into equal parts;
- paper strips for modeling parts;
- filmstrips and tables illustrating the division of a whole;
- task cards where children compare and represent fractions.

Gradually, students become familiar with the terms *numerator* and *denominator*. The teacher explains that the denominator shows how many equal parts the whole is divided into, while the numerator shows how many of those parts are taken. For example, in the fraction 2/5, the whole is divided into five parts, and two of them are taken.

To consolidate knowledge, it is useful to use exercises that require students to show 1/2, 1/3, or 3/4 of a shape in a picture or determine which part is shaded. These tasks develop visual perception and a conscious understanding of a fraction as the relationship between a part and a whole.

At the second stage of studying the topic, equivalent fractions are introduced. For example, students observe that 1/2 = 2/4 = 4/8, meaning that different fractions can represent the same quantity. These observations prepare students for understanding the basic property of fractions.

Next, problems involving finding a part of a number are introduced. The teacher demonstrates that to find, for example, 3/5 of 10 cm, one must first find one fifth (10 ÷ 5 = 2 cm) and then three fifths (2 × 3 = 6 cm). Such tasks develop reasoning skills, planning abilities, and conscious application of mathematical operations.

During teaching practice, it was observed that younger students grasp the material more easily when lessons are structured as practical experiments: children divide paper shapes, shade parts, and compare results. This approach sparks genuine interest and encourages independent discovery of new knowledge.

In addition, group work proves effective, as students solve problems together, discuss the correctness of answers, and draw conclusions. Under such conditions, not only mathematical thinking develops, but also communication skills, listening abilities, and the capacity to justify one's viewpoint.

Learning "Fractions" in primary school occupies an important place in the development of students' logical thinking and their understanding of fundamental mathematical concepts. Work on fractions is based on the previously studied topic "Parts" and is carried out sequentially in Grades 3–4. The concept of a fraction is formed on the basis of children's life experience: cutting objects into equal parts, identifying a part of a whole, and comparing the resulting parts. Therefore, visual aids, practical activities, and the use of real objects are of particular importance in the learning process.

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Children's first ideas about fractions are formed when dividing various objects, geometric shapes, and segments into equal parts. Even before school, students know that an apple or bread can be "cut in half" or "divided into several parts." In primary school, these everyday observations receive a scientific explanation.

It is important for the teacher to emphasize that a fraction arises only when a whole is divided into equal parts. If the division is uneven, such parts cannot be considered fractions. This helps students understand the dependence of a fraction on the equality of parts.

Visualization is a key methodological principle in teaching fractions. The use of real objects (an apple, a paper strip, a ribbon), as well as modeling shapes (circle, square, rectangle), makes it possible to:

- clearly demonstrate the process of forming parts;
- develop an understanding of equal parts of a whole;
- explain the writing and reading of fractions;
- demonstrate the meaning of the numerator and denominator;
- prepare students for comparing and transforming fractions.

Different ways of dividing a square into four equal parts help children understand symmetry, the relative position of parts, and the relationship between a figure and its parts.

At the first stage, fractions are studied without using the terms *numerator* and *denominator*. The explanation is based on practical action:

- the number below shows how many equal parts the whole is divided into;
- the number above shows how many of those parts are taken.

After visual and practical representations are formed, the terms *numerator*, *denominator*, *fraction bar*, as well as the rules for reading fractions, are introduced.

Comparing fractions

Comparing fractions is based primarily on visualization. Students use:

- identical paper strips cut into 2, 4, and 8 parts;
- rectangles divided into equal parts;
- segments of equal length.

Gradually, children arrive at important conclusions:

- If denominators are the same, numerators are compared:

$4/9 < 5/9$.

- The more parts a whole is divided into, the smaller each part is:

$1/2 > 1/4 > 1/8$.

These observations prepare students for studying the basic property of fractions.

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Finding a part of a number

In Grade 3, simple problems on finding a part of a number are considered:

- half of a segment 12 cm long: 12 ÷ 2 = 6 cm;
- a quarter of a segment 12 cm long: 12 ÷ 4 = 3 cm;
- a quarter of a book with 80 pages: 80 ÷ 4 = 20 pages.

Such tasks help students understand the relationship between a whole and its part.

Finding a number by its part

In Grade 4, more complex problems are studied, where the whole must be found from a known part. For example:

If an airplane flies 5 km in 1/3 of a minute, then in 1 minute it will fly:
5 × 3 = 15 km.

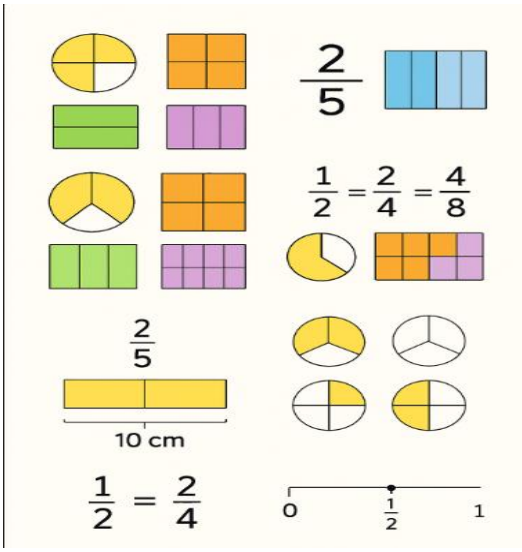
These exercises develop reasoning skills, the ability to perform inverse calculations, and prepare students for elements of algebraic thinking.

Recording the solution as an expression

At a later stage, students learn to represent solutions in the form of expressions. For example:

240 ÷ 8 × 5 – (240 – 240 ÷ 8 × 5)

Such forms of recording contribute to the development of logical thinking, the ability to structure solutions, and to see relationships between quantities.



CONCLUSION

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Thus, the methodology of teaching "Fractions" in primary school should be based on a combination of visualization, practical activities, and active student participation in the learning process. It is important that students not only memorize how a fraction is read, but understand its meaning and learn to apply the acquired knowledge in solving real-life problems.

Teachers should remember that each child masters new material at their own pace; therefore, special attention should be paid to an individual approach and a gradual transition from concrete actions to abstract reasoning.

Teaching "Fractions" in primary school should be carried out step by step, relying on visualization and students' practical activities. It is important to consistently develop skills in dividing a whole into equal parts, reading and writing fractions, comparing them, finding a part of a number, and finding a number by its part. The Grade 3 curriculum includes basic knowledge of fractions, while Grade 4 expands this knowledge with more complex tasks, ensuring a complete and conscious mastery of the concept of fractions.

Experience shows that teaching "Fractions" can become an engaging and informative process if each lesson is filled with practical discoveries, games, creative tasks, and a supportive atmosphere of cooperation.

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