

## A Creative Approach to Teaching Geometry in the Primary Grades

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**Abstract:** This article is about "Creative Approaches to Teaching Geometry in the Primary School." Geometric material plays an important role in elementary mathematics. The main purpose of the study of geometric material is to learn about geometric figures (point, straight and curved line, straight line cross section, broken line, polygon, circle and circle) about their elements, between figures and their elements is to compile a complete system of perceptions about relationships, some of their properties.

**Keywords:** Geometric elements, creative approach, figure, information-communication, problems of geometric content.

From the first days of independence, the policy of reforming the education system has been consistently pursued as a necessary and mandatory condition for democratic changes in society, sustainable economic development and integration of the republic into the world community. Today, the National Training Program is the only education system that covers the whole process of continuous education and upbringing of the younger generation. Each part of the education system has its own place. Improving the effectiveness of education in every school is now a serious task. This requires every teacher to be well-versed in the most effective modern pedagogical technologies of teaching their subject and to constantly improve their professional skills by constantly studying the latest developments in this field. Taking into account the unique role of mathematics in our lives, this subject has been included in school textbooks since the first grade. Much attention is paid to the introduction of information and communication technologies. It is important that he understands that mathematical knowledge is useful not only for grades, questions or

exams, but also at home, at work, in sports and the arts, in trade and commerce - in every moment of life.

To do this, the teacher must be able to relate the topics directly to real life and teach them to solve problems or problems using simple situations in life. Most importantly, the student should be able to see in the notebook the number, not the various actions, but a simple life, the future. In addition to giving such examples, it is of great benefit for the educator to engage his students in independent research, and to engage them in the conscious discovery of such laws. In order for primary school students to be taught mathematics effectively, the teacher needs to master and master the methods of teaching mathematics in the primary grades. The subject of the methodology of primary education in mathematics is:

1. Define and justify the purpose of teaching mathematics (why mathematics is taught)
2. Scientific development of the content of teaching mathematics (what to teach), how the level of knowledge brought into a system is distributed in accordance with the age characteristics of students, consistency in the study of the basics of science is provided, The burden of education is eliminated, and the content of education is adapted to the specific educational opportunities of students.
3. Scientific development of teaching methods (how to teach), that is, what are the methods of teaching so that students acquire the economic knowledge, skills, abilities and intellectual abilities that are needed today? must be?
4. Use of teaching aids - textbooks, didactic materials, visual aids and teaching aids (how to teach)

5. Scientific development of the organization of education (how to organize lessons and extracurricular forms of education).

An elementary school teacher is expected to provide students with the following knowledge based on a math program:

1. Numbering of non-negative numbers;
2. Basic quantities and their units;
3. Arithmetic operations;
4. Textual issues;
5. Algebraic material (equality, inequality, etc.)
6. Geometric material

The acquisition of mathematical knowledge by a student depends not only on the choice of the right method of teaching, but also on the form of organization of the learning process. A lesson is a study activity organized by a fixed number of students under the guidance of a teacher for a certain period of time, according to a specific schedule. During the lesson, students learn from mathematics to theoretical knowledge, calculation skills, problem solving, various measurements, that is, all the learning activities are carried out in the classroom. The specifics of a math lesson depend primarily on the nature of the subject. One of these features is that the elements of algebraic geometry are studied at the same time as the arithmetic material. Therefore, as new knowledge is imparted in each lesson, practical learning skills are incorporated into it. Well-known scientist J. Ikramov in his book "Language of Mathematics" notes that "the formation of the mathematical culture of schoolchildren is divided into several periods." First of all, they determine the content of objective concepts - mathematical reality. Of particular importance is the relationship between the accuracy of the objects and the historical aspects.

It is also important that the primary school teacher teaches Geometric Materials according to the math curriculum. It is especially effective and fun for students to be taught through a creative approach.

Study of geometric materials:

- To accumulate (expand) the stock of ideas about geometric figures; - to develop the skills of spatial thinking, analysis, generalization, imagination;
- develop important practical skills;
- prepares children for the study of geometry.

When learning the topic of "Numbering to 10," children become familiar with points and intersections, expanding their understanding of triangles, quadrilaterals, pentagons, and other polygons. In the study of "Addition and subtraction of numbers up to 100", rectangles, squares, polygons are studied as a form. In Grades 2 and 3, the idea of geometric figures expands and deepens.

The following tasks can be used to form such assumptions:

- A. Geometric figures and their elements are drawn. (In this case, the necessary terms are learned, the skills of recognizing geometric figures and distinguishing between them are formed.
- B. Draw triangles and triangles in a grid notebook.
- C. Divide the figures into groups.
- D. Divide the figures into parts and make other figures from these parts.
- E. Creating a geometric shape of various objects and their parts.
- F. To develop the ability to read geometric drawings using symbols (in grade 3).

In the first grade, the initial acquaintance with geometric shapes and their properties is basically completed, in the second grade, students reach a much higher level of geometric development, children's measurement skills are improved, geometric concepts are defined and expanded. Students' vocabulary of mathematics will increase and strengthen. As in the first class, in the methodology of studying geometric material, a great deal of attention is paid to the method of comparison and contrast, the method of using their relationship to determine the properties of shapes. Creating geometric shapes is a creative approach, using techniques such as observing geometric shapes, cutting and pasting geometric shapes, making models,

folding a sheet of paper, dividing a shape into pieces, and creating new shapes from pieces.

In the second grade, the geometric material is distributed throughout the school year and should be allocated a few minutes in each lesson. There are very few classes dedicated to geometry, algebra, and arithmetic. This allows the study of geometric facts through algebraic facts and, conversely, algebraic facts using geometric facts. In the second grade, not only what is repeated in the first grade, but also a number of new materials are studied: the use of letters to denote points and intersections, the representation of numbers with intersections, the comparison of lengths of sections using a compass, acquaintance with circles and circles, broken lines, perimeter of shapes, acquaintance with millimeters. Let's look at the content of geometric material and the peculiarities of its study.

Use geometric shapes to study tables and some properties of multiplication

If in the first class geometric shapes were used as didactic material in the formation of the concept of numbers, in the first stage the concept of arithmetic operations and some of their properties, in the second class both geometric representations are used as individual and demonstrative manuals. For example, the teacher uses circles, squares, and triangles in groups to explain the nature of multiplication.

Example 1: Find the number of shapes (shapes can be placed on a board and fastened). The reader, for example, sees that the shapes are arranged in 3 rows with 6 shapes in each (or in 6 column shapes with 3 shapes in each), resulting in the following notation:

$$6 + 6 + 6 - 18 \quad (3 + 3 + 3 + 3 + 3 + 3 - 18);$$

by multiplication:  $6 \cdot 3 = 18$  and  $3 \cdot 6 = 18$ .

We enforce the law of multiplication. You can use geometric shapes to multiply a number by the sum. Example 2: Calculate how many shapes are located:

a) The children find that the shapes are arranged in three rows, each with 5 triangles and 4 squares. This will result in:

$$5 + 5 + 5 + 4 + 4 + 4 - 27;$$

b) it is also possible to calculate triangles separately and squares separately. In that case:

$$3 \cdot 5 + 3 \cdot 4 = 15 + 12 - 27.$$

By comparison, the results are the same. So there are two ways to multiply a number:

$$3(5 + 4) - 3 \cdot 5 + 3 \cdot 4 = 15 + 12 - 27.$$

1) find the sum and multiply the number by this sum;

2) multiply the number by each participant and add the results;

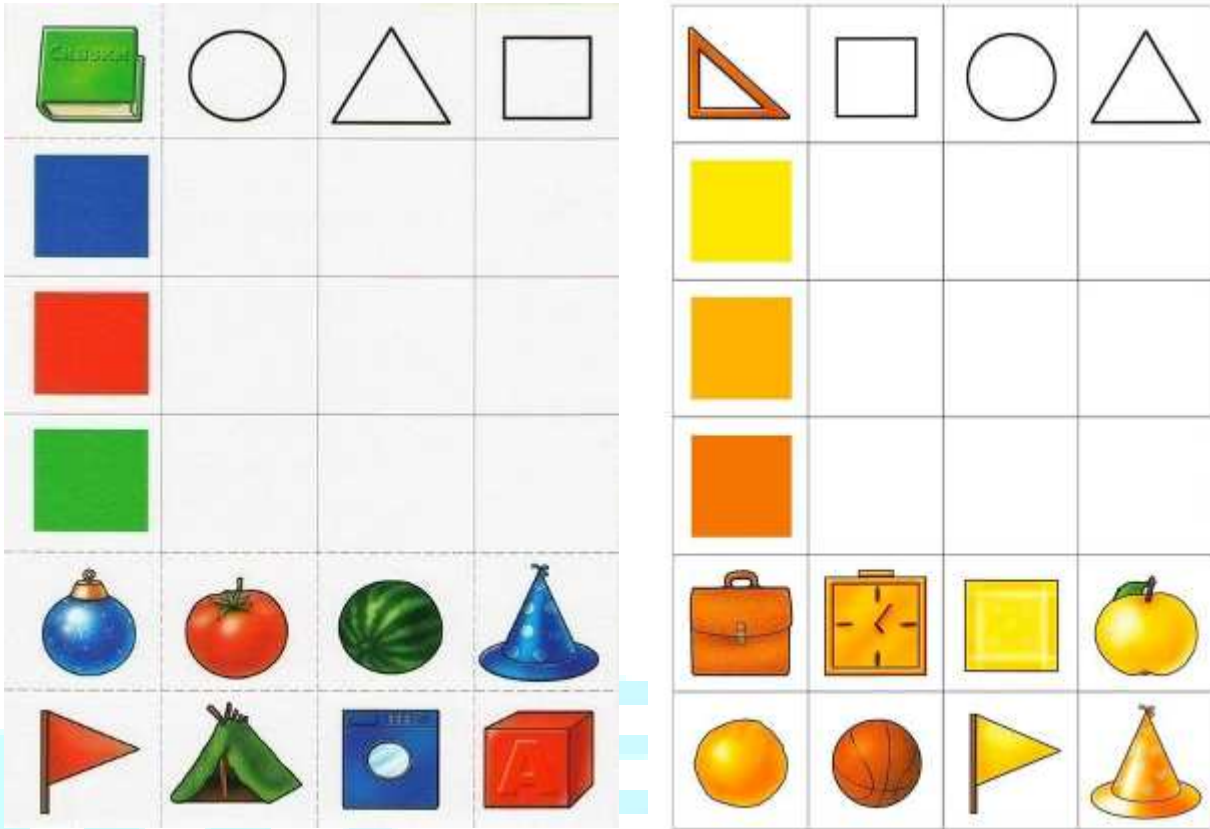
3) Geometric shapes divided into equal squares can be used to study the multiplication table.

Counting squares prepares students for the concept of a face, as well as allows them to form and calculate expressions. A creative approach to teaching students geometric shapes based on the "What do I look like" game also gives the expected result. The following pictures are used in this game.



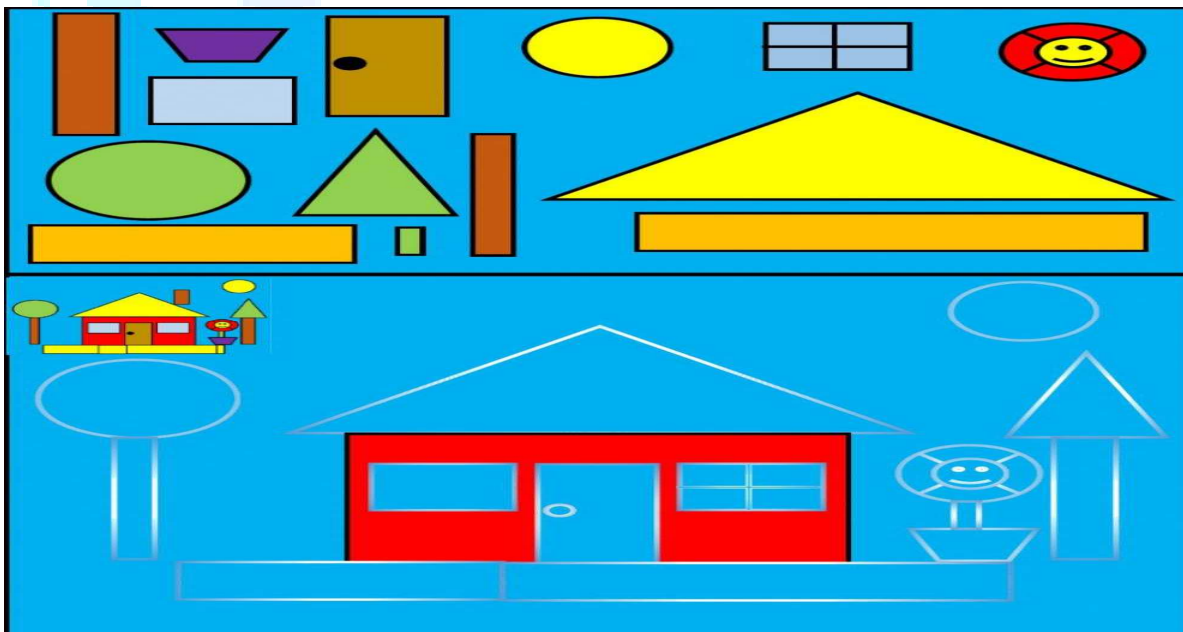
Students will need to look at these pictures, think about what shape the pictures fit, and come up with a creative approach. This, in turn, will increase students' interest in the lesson and make it easier for them to master the topic.

In addition, the use of the following pictorial exercises also gives good results.



Creating a home drawing using geometric shapes requires creativity and skill on the part of students. This type of assignment will never bore students. Question-and-answer sessions about the home they have created will also enliven the lesson and encourage students to be more active.

It is also important to ask questions of geometric content:



1. Draw a section 3 cm long.
2. Draw a section 4 cm long.
3. Draw 7 circles.
4. Paint 3 squares blue and 2 more squares yellow.
5. A rectangular table is sawn in one corner. How many corners are left?
6. Can you draw a section 5 cm long without using a ruler?
7. How many times is a 12 cm long thread cut into 3 equal parts?
8. The height of the classroom is 8 m. Its width is 2 m shorter. What is the width of the classroom?
9. Ismatullo had to draw 10 squares, he drew 7. How many more squares does he have to draw?
10. Draw incisions, one 8 cm short and the other 5 cm shorter.

In conclusion, in order to solve the tasks set before us in the field of geometric preparation of primary school students, in our view, the most interesting research devoted to the study of geometric material in the primary and secondary schools in the past is small. We need to focus on answering the question of what we teach students of that age. Examples of geometric elements include: the use of geometric modeling, the creation of models of figures from paper, sticks, plasticine and wire, the drawing of geometric figures on paper - all this contributes to the development of geometric imagination in the minds of children. In this case, the figures should be chosen in such a way that children can identify their main features (shape, geometric properties), regardless of the type, color, size of the material, its position in the plane. It is important that students be able to distinguish all the qualities of geometric shapes. These figures help to get the idea right. For example, in the process of learning a rectangle, children need to understand that it has two main qualities — a rectangle and that its angles are right.

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