

Lesson Plan

NEUROHEADWAY

Neuroscience Into Education

Lesson Plan - Geometric shapes

Key Stage 2

Aims:

1. To recognize basic geometric shapes (triangle, rectangle, square, and circle) in geometric settings.
2. To count the number of basic geometric shapes (triangle, rectangle, square, and circle) in geometric figures, including the situations when some shapes are placed one inside the other.
3. To count systematically the number of particular shapes in complex situations.

Sources:

1. Power Point
2. Sheets of paper
3. Activity worksheet (for the lower ability pupils)

Activity 1: Slides from 2 to 4 (5 minutes)

This is an introductory activity. The aim is to remind and review the basic geometric shapes. These shapes will be used in the next activities. Slide 4 (it is on the green background) is for the lower ability pupils.

Activity 2: Slides from 5 to 8 (20 minutes)

The aim of this activity is to make pupils not only recognize the shapes but also to count them in a simple geometric situations.

Some methodological considerations:

- Leave some time for the children to think after presenting each of the tasks.
- Explain carefully the meaning of the first paragraph in slide 6. Make sure that everybody understand it because it is important for the successful continuation of the lesson.
- Do not miss the opportunity to present pupils the creative tasks in slide 8.

Activity 3: Slides 9 and 11 (10 minutes)

The aim of this activity is to make pupils count shapes in more complex geometric situations.

Some methodological considerations:

- Leave some time for the children to think after presenting each of the tasks.
- Remind them the first paragraph in slide 6, because it is crucial for the solutions of the tasks.

Activity 4: Slides from 12 to 21 (20 minutes)

The aim of this activity is to make pupils count systematically the number of particular shapes in complex situations.

Some methodological considerations:

- Systematic counting is an important strategy for counting the number of elements in finite sets. It can be successfully presented by carefully selected examples to pupils in Key Stage 2.
- Leave some time for the children to think after presenting each of the tasks.
- Explain carefully the hints and solutions to the tasks. Make sure the pupils understand them.
- Slides 18, 19, 20, and 21 (they are on yellow background) are for "G+T" pupils (Gifted and Talented students) only.

Activity 5: Slide 22

This is a pathway practical activity that may help teachers to introduce the next subject topic that is about recognizing and writing fractions of a set of objects and adding fractions with the same denominator within one whole.

What have we learned? Slide 22 (5 minutes)

Class discussion

Power point Example

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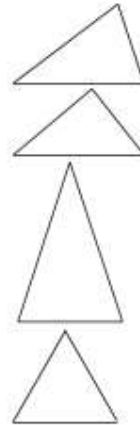
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Activity 1

- Name the shape

- This is a _____ (Figure with three sides)
- This is a _____ triangle. (All sides have different length)
- This is an _____ triangle. (Two sides with equal length but the third has a different length)
- This is an _____ triangle. (Three sides with equal length)

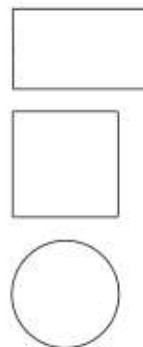
- Answer: triangle, scalene, isosceles, equilateral



- Name the shape (continue)

- This is a _____ (Figure with four right angles and two pairs of opposite sides with equal length)
- This is a _____ (Figure with four equal sides and four right angles)
- This is a _____ (A perfectly round figure)

- Answer: rectangle, square, circle



Activity 2

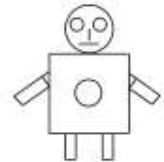
- Complete the missing numbers in the sentence.

- In this picture, there are ____ triangles, ____ rectangles, and ____ circles.



- Answer: 3, 2, 2

- In this picture, there are ____ triangles, ____ rectangles, that are not squares, ____ squares, and ____ circle.



- Answer: 2, 4, 1, 4

- **Important!** When some shapes are placed one inside the other, we need to count all shapes obtained.

- For example, in this figure there are 5 squares (four small and one big) and also 4 rectangles that are not squares (one above one below, one to the left, and one to the right).



- Complete the missing numbers in the sentence.

- In this picture, there are ____ triangles, ____ rectangles, that are not squares, ____ squares, and ____ circle.



- Answer: 2, 6, 6, 1

- How many circles are there in the figure?

- Answer: 8



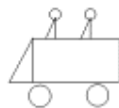
- How many triangles are there in the figure?
What is the type of these triangles?

- Answer: 5 triangles, isosceles



- Create a figure that has three triangles, one rectangle, and four circles.

- Answer: for example



- Create a figure that has one scalene triangle, two isosceles triangles, one equilateral triangle, one square and one circle.

- Answer: for example



Activity 3

- How many triangles are there in each of the figures?

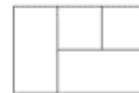


Answer: A) 5; B) 4; C) 12

This rectangle is partitioned into rectangles and squares.

A) How many squares are there?

B) How many rectangles that are not squares are there inside the given rectangle?



Answer: A) 3; B) 3