

Geometry - 2D Shapes

Grade 4 Math

Learning Objectives

- Students will be able to identify and name 2D shapes accurately.
- Students will be able to classify 2D shapes based on their attributes.
- Students will be able to determine the perimeter of 2D shapes.
- Students will be able to use verbal reasoning skills to use mathematical language to explain the properties of different 2D shapes.
- Students will be able to use quantitative reasoning skills to solve problems involving 2D shapes.
- Students will be able to use nonverbal reasoning skills to use visual models to differentiate 2D shapes.

Materials Needed

- Whiteboard and markers or pencil and paper
- Geometric shapes (e.g. triangles, squares, rectangles, circles, hexagons) made out of cardboard or paper
- Scissors
- Rulers
- Worksheets and/or practice problems with shape identification and classification problems

Procedure

Introduction

1. Engage students by asking them to share what they know about 2D shapes.
2. Introduce the concept of identifying and naming 2D shapes by showing examples on the whiteboard (e.g., circle, square, triangle, rectangle).
3. Ask students to explain in their own words what they think is happening in the example.

Teaching

4. Model how to identify and classify 2D shapes based on their attributes, such as the number of sides or angles.
5. Guide students in practicing identifying and classifying 2D shapes using shapes cutouts.
6. Demonstrate how to record the classification of a shape using a Venn diagram or another on the whiteboard.



7. Define perimeter and demonstrate how to use a ruler to measure the sides of the shape to determine the perimeter.
8. Have students practice identifying and classifying 2D shapes on the whiteboard with you.

Guided Practice

9. Have students work in pairs or small groups to create a chart with the names of each shape, the number of sides, and the number of angles for each shape.
10. Use this opportunity to differentiate instruction based on how students learn best:
 - a. **Verbal:** In small groups or as a whole class, ask students to describe the properties of each shape and what makes them different from one another. Encourage the use of mathematical language (e.g. acute angle, parallel sides, etc.).
 - i. Provide students with worksheets or display practice problems identifying and describing different 2D shapes. Circulate around the room to check for understanding and provide assistance where necessary.
 - b. **Nonverbal:** Have students work in small groups to create a 2D shape using the cardboard or paper shapes. Groups can present their shape to the class and have the rest of the students identify the properties of the shape. This could also be done by reorganizing the students into new groups and letting them each share what their previous group created.
 - a. **Quantitative:** Provide students with paper and pencil or dry erase boards, and have them create their own 2D shapes, identifying the shape, number angles, etc.

Independent Practice

11. Provide students with practice problems, such as pattern recognition or visual-spatial reasoning puzzles that involve identifying and classifying 2D shapes.
12. Have students work independently.
13. Provide feedback and support as necessary.

Closure

14. Ask students to share one thing they learned about identifying and classifying 2D shapes today.
15. Review the steps for identifying and classifying 2D shapes and remind students to practice at home.
16. To shore up mastery, give students an at-bat by employing their cognitive strength:
 - a. **Verbal:** Students work in partners, sharing images of 2D shapes with one another and identifying the name of each shape, number of angles, types of sides, length of sides, etc.
 - b. **Quantitative:** Students answer questions (on paper or other method) regarding the attributes of 2D shapes that are projected on a screen or shown using visuals.
 - c. **Nonverbal:** Students work individually to draw or create 2D shapes based on descriptions and attributes that are shared aloud to the class.



Assessment:

- Observation of student participation and understanding during guided and independent practice
- Review of completed worksheets
- Review of completed Venn diagrams on the whiteboard.

Extension Activities

- Have students create their own 2D shapes using the cardboard or paper shapes and have them describe the properties of their shape to the class.
- Provide students with more advanced word problems involving 2D shapes for additional quantitative practice.
- Have students work in pairs to create a picture using only 2D shapes and have them identify the shapes they used and their properties.

