

# LESSON PLAN

**Subject:** Grade 5 Math

**Lesson:** The Black Builders of Salem

**Standard Addressed:**

Classify quadrilaterals into categories based on their properties. (NC.5.G.3)

- Explain that attributes belonging to a category of quadrilaterals also belong to all subcategories of that category.
- Classify quadrilaterals in a hierarchy based on properties.

**Objectives:**

- Students will be able to identify geometric attributes of quadrilaterals such as parallel and perpendicular sides, sides of equal lengths, types of angles in shape, and properties of symmetry.
- Students will be able to evaluate various shapes to determine what category of shape they belong to.
- Students will be able to arrange shapes in hierarchical order according to their properties.

**Materials Needed:**

- Device for showing *The Black Builders of Salem*.
- “Building a Hierarchy of Shapes” activity

**Outline:**

- Prior to this lesson, students should know what a quadrilateral is and be able to distinguish various types of quadrilaterals based on their geometric attributes.
- Show the video, guiding students in finding examples of various shapes and geometric attributes such as *parallel* and *perpendicular* lines.
- Review the attributes of different types of quadrilaterals. Discuss the activity prompt.
- Students finish the activity independently or with a partner.

**Take it Further:** Students look at buildings in their neighborhood and identify the various quadrilaterals that make up each building. Students make a chart listing the types of quadrilaterals they observe and how many of each type of quadrilateral are represented in the buildings. Students share their information, discussing the reasons some quadrilaterals may be more prevalent in buildings than others.

**Cross-Curriculum Connections:** Using graph paper or an online 3-D modeling program such as Tinkercad, students design a building using as many different types of quadrilaterals as possible. Students pretend to be realtors and write a real estate property listing for their building.

Students read and discuss *Dream Builder* by Kelly Lyons, a biography about renowned Black architect, Philip Freelon.

# Building a Hierarchy of Shapes







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Student Name: \_\_\_\_\_ Date: \_\_\_\_\_

In the video, you saw lots of polygons made from wood and clay around Old Salem. Let's take a closer look at shapes you may have seen.

**Part 1:** *Identify the types of polygons represented by the pictures in the chart. Use these words: Square, Rectangle, Rhombus, Parallelogram, Quadrilateral*

*HINT: Most of the pictures should have more than one polygon type written.*

Shapes	Polygons represented by this shape (Remember to list ALL of the polygons that apply.)
	
	
	
	
	
	

**Part 2:** *Use the words you wrote in your chart to help you answer the following questions.*

1. What word did you write the most? \_\_\_\_\_
2. What word did you write the *second most*? \_\_\_\_\_
3. What word did you write *the least*? \_\_\_\_\_

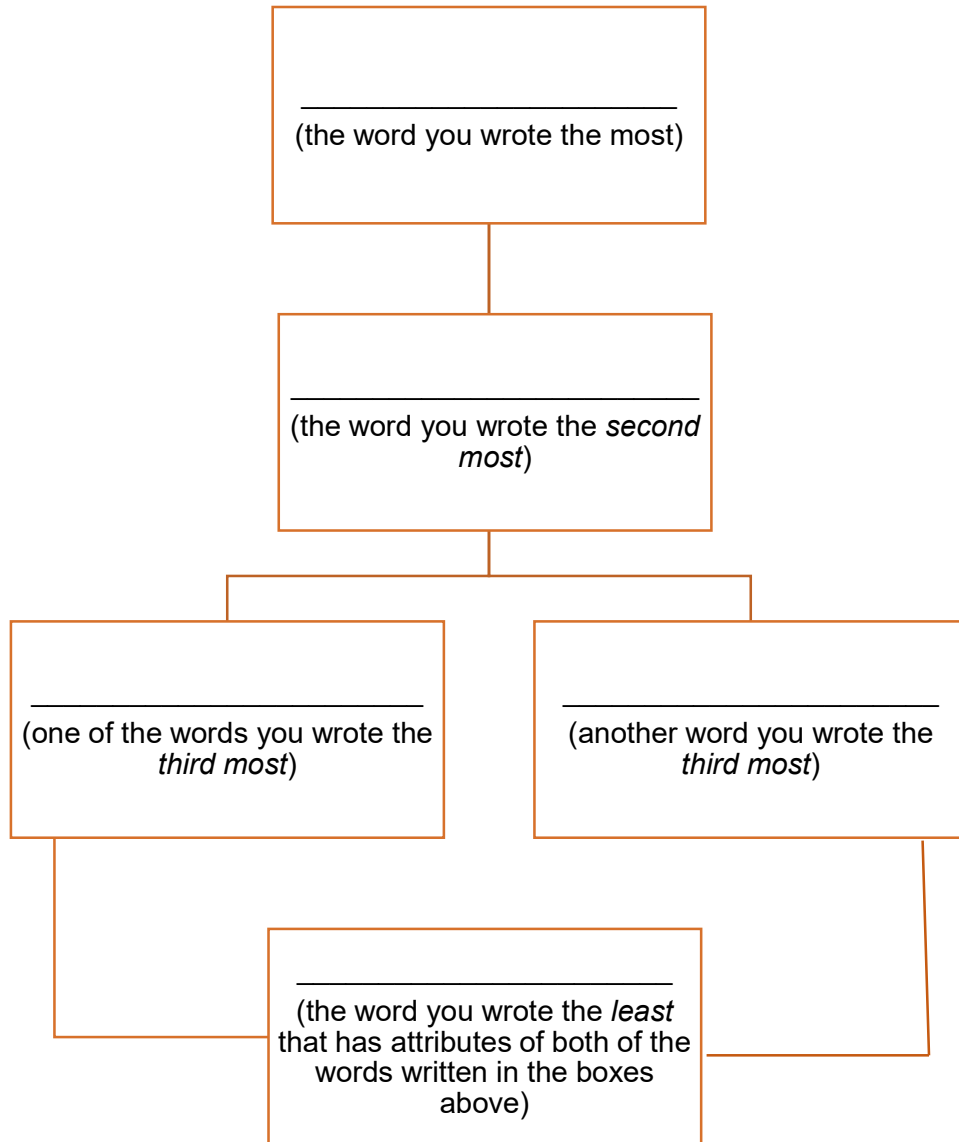
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Student Name: \_\_\_\_\_

Date: \_\_\_\_\_

Part 3: Build a hierarchy diagram of polygons by using your answers on the previous page.



# Building a Hierarchy of Shapes





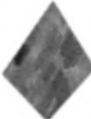

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## Answer Key

In the video, you saw lots of polygons made from wood and clay around Old Salem. Let's take a closer look at shapes you may have seen.

**Part 1:** Identify the types of polygons represented by the pictures in the chart. Use these words: **Square, Rectangle, Rhombus, Parallelogram, Quadrilateral**

*HINT: Most of the pictures should have more than one polygon type written.*

Shapes	Polygons represented by this shape (Remember to list ALL of the polygons that apply.)
	Quadrilateral, Parallelogram, Rectangle, Square, Rhombus
	Quadrilateral, Parallelogram, Rectangle
	Quadrilateral, Parallelogram, Rhombus
	Quadrilateral
	Quadrilateral
	Quadrilateral, Parallelogram

**Part 2:** Use the words you wrote in your chart to help you answer the following questions.

1. What word did you write the most? **Quadrilateral**
2. What word did you write the *second most*? **Parallelogram**
3. What word did you write the *least*? **Square**

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## Answer Key

Part 3: Build a hierarchy diagram of polygons by using your answers on the previous page.

