Common Core Georgia Performance Standards Framework

Fifth Grade Mathematics • Unit 6

PERFORMANCE TASK: Quadrilateral Hierarchy Diagram

Adapted from K-5 Math Teaching Resources

The students will create a Hierarchy Diagram using the terms: quadrilaterals, parallelogram, non parallelograms, rectangle, square, rhombus, trapezoid, kite, and other

STANDARDS FOR MATHEMATICAL CONTENT

MCC5.G.3 Understanding that attributes belonging to a category of two-dimensional figures also belong to all subcategories.

MCC5.G.4 Classify two-dimensional figures in a hierarchy based on properties.

STANDARDS FOR MATHEMATICAL PRACTICE

- SMP 1. Make sense of problems and persevere in solving them.
- SMP 2. Reason abstractly and quantitatively.
- SMP 3. Construct viable arguments and critique the reasoning of others.
- SMP 5. Use appropriate tools strategically.
- SMP 6. Attend to precision.
- SMP 7. Look for and make use of structure.

BACKGROUND KNOWLEDGE

The students will use the knowledge that they have gained throughout this unit to perform this task.

COMMON MISCONCEPTIONS

Students think that when describing geometric shapes and placing them in subcategories, the last category is the only classification that can be used.

ESSENTIAL QUESTIONS

- How can plane figures be categorized and classified?
- How can you classify different types of shapes into a hierarchy?
- How can angle and side measures help us to create and classify shapes?

MATERIALS

- Construction paper 9 X 11 or larger for hierarchy
- Glue sticks
- Markers
- Scissors
- One set of shapes per student

GROUPING

Individual Task

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TASK DESCRIPTION, DEVELOPMENT AND DISCUSSION

- 1. The students will create a Hierarchy Diagram using the terms: quadrilaterals, parallelogram, non parallelograms, rectangle, square, rhombus, trapezoid, kite, and other. (Labels are provided for the students)
- 2. Cut out the quadrilaterals and place each figure in the appropriate place on the diagram and glue it down.
- 3. List the properties specific to each quadrilaterals.

FORMATIVE ASSESSMENT QUESTIONS

- How do you know this quadrilateral is a _____ (square, rectangle, parallelogram, trapezoid, or rhombus)?
- What is meant by the term "opposite sides"?
- What does "parallel" mean? How can you show that those sides parallel?
- What does "perpendicular" mean? How can you show that those sides are perpendicular?
- How can you show that 2 sides are equal?
- What are some ways we can show an angle is a right angle?

DIFFERENTIATION

Extension

- Allow the students to draw and/or add their own quadrilaterals to the diagram.
- Allow the students to present their mathematical reasoning as part of the task.

Intervention

- Allow students to work in pairs.
- Allow students to use their notes or the internet.

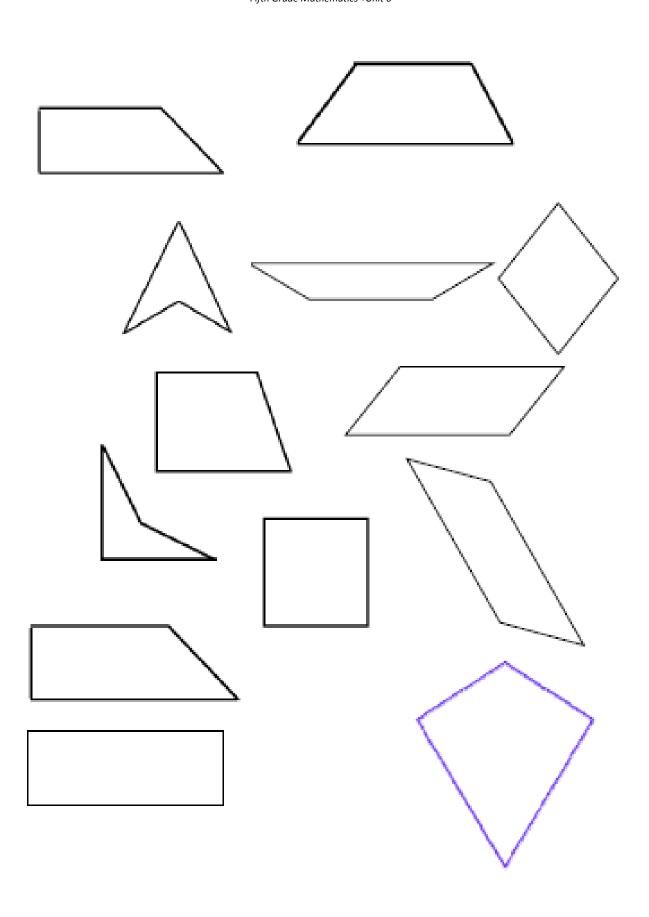
TECHNOLOGY CONNECTION

- http://teams.lacoe.edu/documentation/classrooms/amy/geometry/6-8/activities/quad_quest/quad_quest.html Quadrilateral Quest

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Quadrilaterals	Parallelograms	Square
Rhombus	Non Parallelograms	Rectangle
Trapezoid	Kite	Other
Quadrilaterals	Parallelograms	Square
Rhombus	Non Parallelograms	Rectangle
Trapezoid	Kite	Other

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MATHEMATICS • GRADE 5• UNIT 6: 2-D Figures
Georgia Department of Education
Dr. John D. Barge, State School Superintendent
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