Core Content

Cluster Title: Reason with shapes and their attributes.
Standard 1: Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.
MASTERY Patterns of Reasoning:

Conceptual:
  Students will understand the definition of an attribute.
  Students will understand that the defining attributes of shapes include number of sides, number of angles, etc.
  Students will understand that non-defining attributes of shapes include color, overall size, orientation, etc.

Procedural:
  Students can identify and describe the defining attributes of triangles, circles, rectangles, trapezoids, etc.
  Students can sort shapes by common non-defining attributes.
  Students can sort shapes by a common defining attribute.
  Students can list and explain the defining attributes of each shape.

Representational:
  Students can draw, build, and find shapes that possess defining attributes.

Supports for Teachers

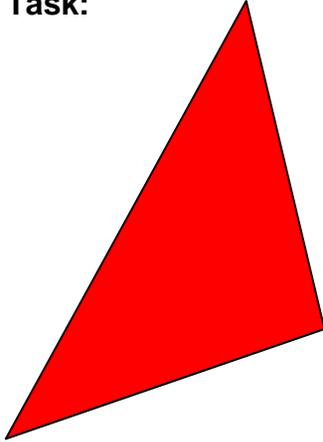| **Critical Background Knowledge** |
| --- |
| **Conceptual:**
Students will understand that shapes have specific names regardless of size or orientation.

Procedural:
Students can describe, compare, name and analyze basic shapes in different sizes and orientations.
Students can build and draw shapes

Representational:
Students can build and draw shapes using manipulatives.
Students can compose larger shapes using simple shapes. |
| **Academic Vocabulary and Notation** |
| attribute, defining attribute, non-defining attribute, triangle, rectangle, square, half-circle, quarter-circle, trapezoid, closed figure |

Instructional Strategies Used	Resources Used
Pattern or attribute blocks can be used to model defining attributes for shapes.

Ask students to create their own rule for sorting shapes.

Have students share sorting rules with classmates and provide examples that support their rules.

Classmates draw a new shape that fits a sorting rule after it is shared.

Compose shapes that possess defining attributes using a number of different methods (e.g., Geoboards, clay, strings, sticks, pattern blocks, tangram pieces, etc.).

Students choose a shape and describe it to classmates using appropriate terminology (e.g., square: 4 equal sides, 4 angles). | NLVM Pre-K-2—Number & Operations Manipulatives
http://nlvm.usu.edu/en/nav/category_g_1_t_1.html

Smartboard applications keyword attributes

Teaching Ideas—Maths—2-D Shapes
http://www.teachingideas.co.uk/maths/contents_shape.htm

Pallotta, Jerry. *Icky Bug Shapes.* Scholastic, Inc., 2004.

Allen, Nancy Kelly. *What Is an Attribute? (Little World Math).* Rourke Publishing, 2010. |

Code: 1.G.1

Domain: Geometry   Grade: 1

Assessment Tasks Used	
Skill-Based Task: Name this shape:_____ Circle all of the defining attributes. red 3 angles large 3 sides open 4 sides small 5 angles closed	**Problem Task:** Draw a group of shapes with the same defining attributes. Justify your choices. _____ _____ _____