

Core Content

Cluster Title: Classify two-dimensional figures into categories based on their properties.

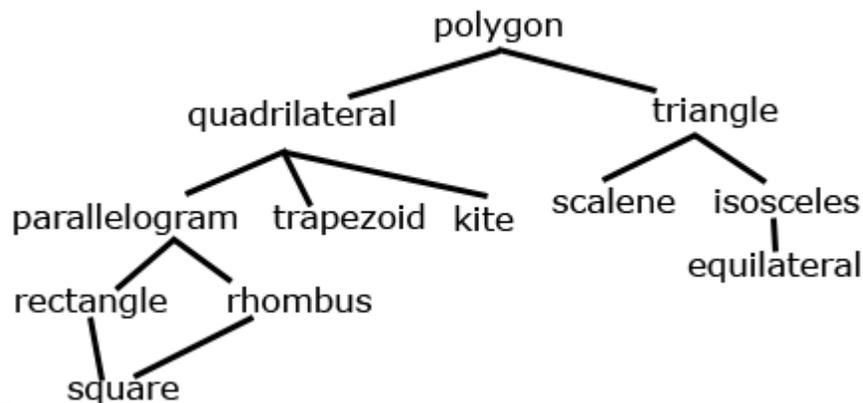
Standard 4: Classify two-dimensional figures in a hierarchy based on properties.

MASTERY Patterns of Reasoning:

Conceptual:
 Students will understand that there are terms that have broad definitions that encapsulate a wide variety of shapes, e.g., polygons.
 Students will classify shapes in a hierarchy of broad definitions to specific definitions (see graphic organizer below).

Procedural:
 Students will be able to use a graphic organizer to compare and organize shapes.

Representational:
 Students will be able to classify two-dimensional figures based on properties. See diagram below:



(<http://ade.az.gov/standards/math/2010mathstandards/Gradelevel/MathGr5.pdf>)

Supports for Teachers

Code: 5.G.4

Critical Background Knowledge	
<p>Conceptual: A shape can fit into multiple categories based on its properties. Students need to be able to identify the relevant properties of a two-dimensional shape.</p> <p>Procedural: Students can give the definitions for the various polygons.</p> <p>Representational: Students can construct various shapes, showing an understanding of the properties that define the shapes.</p>	
Academic Vocabulary and Notation	
<p>polygon, angle, line, parallel, perpendicular, triangle, quadrilateral, pentagon, hexagon, octagon, decagon, parallelogram, rectangle, rhombus, square, isosceles, scalene, acute, right, obtuse, trapezoid, equilateral, two-dimensional, hierarchy</p>	
Instructional Strategies Used	Resources Used
<p>Have students construct a mobile that displays the hierarchy. Have them start with a polygon.</p> <p>Construct a general polygon and label it.</p> <p>From the polygon hang models of quadrilaterals and triangles.</p> <p>Continue this pattern, hanging the shapes of the more specific definitions from the shape with the broader definition (much like the chart shown above).</p>	<p>http://www.ixl.com/math/standards/california/grade-5</p>
Assessment Tasks Used	
<p>Skill-Based Task: Have student identify all the polygons they can find in a piece of geometric art (http://interiorcomplex.com/accessories/20-modern-</p>	<p>Problem Task: Have students make their own piece of art, making sure to include a variety of polygons. Have students use their understanding of hierarchy to make the piece (for example, the</p>

<p>geometric-art-prints/#), and label those polygons with all the labels that fit (a rhombus should be labeled as a rhombus, parallelogram, quadrilateral, and polygon).</p>	<p>top of the picture can contain any polygons, but as it goes down it has to use more specific types of polygons).</p>
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