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:

![Diagram](http://ade.az.gov/standards/math/2010mathstandards/Gradelevel/MathGr5.pdf)

Supports for Teachers

Code: 5.G.4
## Critical Background Knowledge

### 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.

### Procedural:
Students can give the definitions for the various polygons.

### Representational:
Students can construct various shapes, showing an understanding of the properties that define the shapes.

## Academic Vocabulary and Notation
- 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

## Instructional Strategies Used

<table>
<thead>
<tr>
<th>Instructional Strategies Used</th>
<th>Resources Used</th>
</tr>
</thead>
</table>
| Have students construct a mobile that displays the hierarchy. Have them start with a polygon.  
Construct a general polygon and label it.  
From the polygon hang models of quadrilaterals and triangles.  
Continue this pattern, hanging the shapes of the more specific definitions from the shape with the broader definition (much like the chart shown above). | [http://www.ixl.com/math/standards/california/grade-5](http://www.ixl.com/math/standards/california/grade-5) |

## Assessment Tasks Used

| Skill-Based Task: Have student identify all the polygons they can find in a piece of geometric art ([http://interiorcomplex.com/accessories/20-modern-](http://interiorcomplex.com/accessories/20-modern-)) | 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 |
| 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). | top of the picture can contain any polygons, but as it goes down it has to use more specific types of polygons). |