

#### Vertical Progression:

<b>TS Gold</b>	<p><b>21. Explores and describes spatial relationships and shapes.</b></p> <p><b>21b. Understands shapes.</b></p> <p><b>8.</b> Shows that shapes remain the same when they are turned, flipped or slid; breaks apart or combines shapes to create different shapes and sizes.</p>
<b>Kindergarten</b>	<p><b>K.G.B Analyze, compare, create, and compose shapes.</b></p> <ul style="list-style-type: none"> <li>○ <b>K.G.B.4</b> Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/“corners”) and other attributes (e.g., having sides of equal length).</li> <li>○ <b>K.G.B.5</b> Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.</li> <li>○ <b>K.G.B.6</b> Compose simple shapes to form larger shapes. For example, “Can you join these two triangles with full sides touching to make a rectangle?”</li> </ul>
<b>1<sup>st</sup> Grade</b>	<p><b>1.G.A Reasons with shapes and their attributes.</b></p> <ul style="list-style-type: none"> <li>○ <b>1.G.A.1</b> 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.</li> <li>○ <b>1.G.A.2</b> Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape. (Note: Students do not need to learn formal names such as “right rectangular prism.”).</li> </ul>

#### Students will demonstrate command of the ELG by:

- Describing attributes of shapes.
- Identifying and comparing two- and three-dimensional shapes.
- Modeling two- and three-dimensional shapes in the real world using a variety of manipulatives (e.g., sticks, clay, straws).
- Drawing simple shapes.
- Using simple shapes to build larger shapes.
- Analyzing and comparing two-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities and differences, parts, and other attributes.

### Vocabulary:

- angle
- attributes
- circle
- cone
- cube
- cylinder
- edge
- face
- hexagon
- rectangle
- solid
- sphere
- square
- three-dimensional
- triangle
- two-dimensional
- vertices

### Sample Instructional/Assessment Tasks:

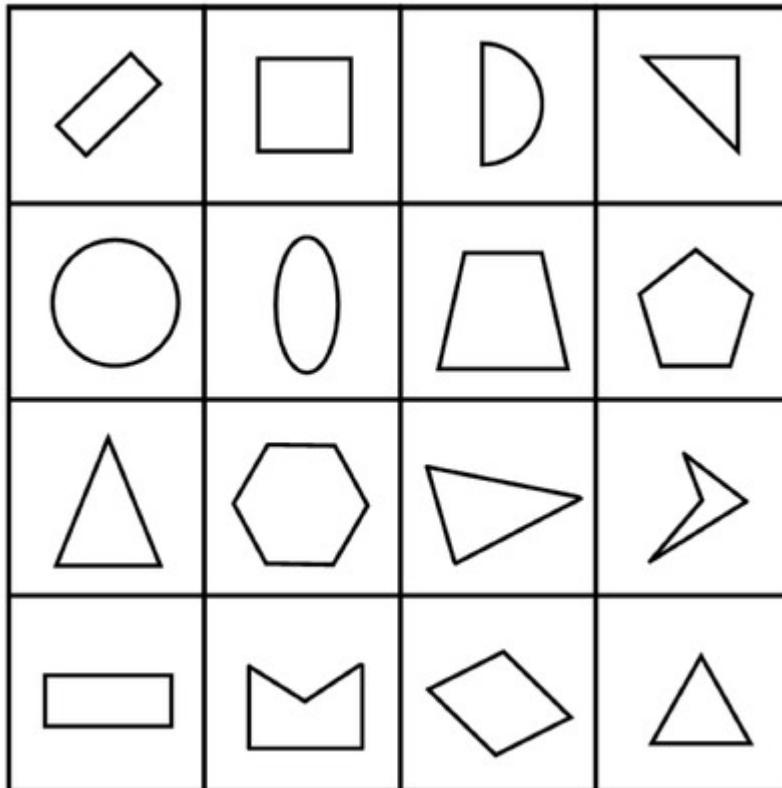
#### 1) Standard(s): K.G.B.4

**Source:** Illustrative Mathematics

<https://www.illustrativemathematics.org/content-standards/K/G/B/4/tasks/515>

**Item Prompt:** Alike or Different Game

**Setup:** Materials: This game uses the 16 cards below.



**Actions:**

Students in pairs take turns drawing two cards. They should name something that is ALIKE or DIFFERENT between the two cards. Then the next two cards are drawn and the process repeats until no cards remain. In a cooperative game, the students work together to name a property for each pair.

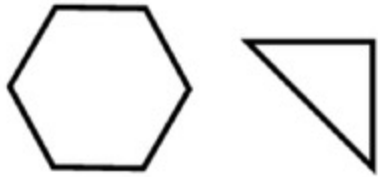
In a competitive game, the student who can name a property first gets to keep the cards and the student with the most cards at the end of the game wins. Since the properties may depend on the orientation of the cards, students should sit side-by-side in this version.

**Solution:**

ALIKE: "They both have four sides."



DIFFERENT: "Only one is round."



DIFFERENT: "There are fewer sides on the triangle."



ALIKE: "They are narrower at the top."

(This depends on the orientation when students place the cards down.)

**Note:** There are many possible solutions for this game. Each solution a child produces should be evaluated based on their reasoning, such as "these are alike because..." or "these are different because....".

#### 2) Standard(s): K.G.B.5

**Source:** <https://gradecommoncoremath.wikispaces.hcpss.org/Assessing+KG5>

**Item Prompt:** Making Shapes

**Setup:** Provide students with materials to make three-dimensional shapes (e.g., clay, play dough, mini-marshmallows, coffee stirrers, sticks, toothpicks, etc.). Ask students to make the three-dimensional shapes that you name. Provide drawing materials (e.g., paper, dot paper, pencil, crayons). Ask students to draw the two-dimensional shapes that you name.

**Correct Answer:** Students understand that two-dimensional shapes are “flat” and three-dimensional shapes are “solid”. Students understand the difference between a square and a cube when asked to make/draw each. Shapes have the necessary sides/corners, even if it isn’t “exactly” drawn. Students use grade level academic and content language to discuss and justify their ideas.

#### 3) Standard(s): K.G.B.6

**Source:** Howard County Public Schools Kindergarten Wikispace.

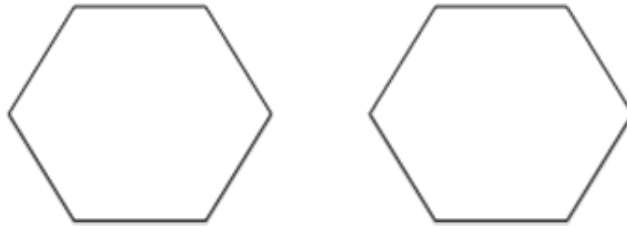
**Item Prompt:** Composing Shapes

**Setup:** Students will use simple shapes (pattern blocks or blackline master shapes) to form larger shapes. Say, for example, “Join these two rectangles to make a square.” When the student is finished ask, “How do you know this new shape is a square?” “Join these two triangles with full sides touching to make a rectangle? How do you know this is a rectangle?” “What is the name of the new shape you made from composing two simple shapes?” Other examples might include the following:

**1. Use two triangles and make a new shape. Draw what you made.**

**2. Put two squares together and make a new shape. Draw what you made.**

**3. Make a hexagon two different ways. Show your work.**



**Rubric:** Students with a complete understanding of the task will be able to join simple shapes to make the new shape, accurately explain why the new shape is a square (rectangle, etc.), and describe each shape using geometric attributes. Students with a developing understanding of the task might attempt to join the simple shapes to make new shapes without success, create a shape without accurately explaining why the new shape is a square (rectangle, etc.), and/or use non-geometric attributes during the explanation.