

<p>Claim 1: Concepts and Procedures Students can explain and apply mathematical concepts and carry out mathematical procedures with precision and fluency.</p>	
<p>Content Domain: Geometry</p>	
<p>Target K [a]: Classify two-dimensional figures into categories based on their properties. (DOK 2)</p> <p>Tasks for this target ask students to classify two-dimensional figures based on a hierarchy. Technology-enhanced items may be used to construct a hierarchy, or tasks may ask the student to select all classifications that apply to a figure based on given information.</p>	
<p>Standards: 5.G.B, 5.G.B.3, 5.G.B.4</p>	<p>5.G.B Classify two-dimensional figures into categories based on their properties.</p> <p>5.G.B.3 Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. <i>For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.</i></p> <p>5.G.B.4 Classify two-dimensional figures in a hierarchy based on properties.</p>
<p>Related Below-Grade and Above-Grade Standards for Purposes of Planning for Vertical Scaling: 4.G.A, 4.G.A.2, 4.G.A.3 6.G.A, 6.G.A.1, 6.G.A.3, 6.G.A.4</p>	<p>Related Grade 4 Standards</p> <p>4.G.A Draw and identify lines and angles, and classify shapes by properties of their lines and angles.</p> <p>4.G.A.2 Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.</p> <p>4.G.A.3 Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.</p> <p>Related Grade 6 Standards</p> <p>6.G.A Solve real-world and mathematical problems involving area, surface area, and volume.</p> <p>6.G.A.1 Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.</p> <p>6.G.A.3 Draw polygons in the coordinate plane given the coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.</p>

	6.G.A.4 Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.
DOK Levels:	2
Achievement Level Descriptors:	
RANGE Achievement Level Descriptors (Range ALD) Target K: Classify two-dimensional figures into categories based on their properties.	Level 1 No Descriptor
	Level 2 Students should be able to classify two-dimensional figures into categories by their attributes or properties.
	Level 3 Students should be able to classify two-dimensional figures into subcategories by their attributes or properties.
	Level 4 No Descriptor
Evidence Required:	1. The student classifies two-dimensional figures into categories and/or subcategories based on their properties.
Allowable Response Types:	Matching Tables
Allowable Stimulus Materials:	grid, two-dimensional figures, points, lines, line segments, angles
Construct-Relevant Vocabulary:	right, acute, obtuse, line segments, parallel, perpendicular, symmetrical, line of symmetry
Allowable Tools:	For some items rulers and/or protractors may be used.
Target-Specific Attributes:	Two-dimensional figures can have up to 10 sides.
Non-Targeted Constructs:	None
Accessibility Guidance:	<p>Item writers should consider the following Language and Visual Element/Design guidelines¹ when developing items.</p> <p>Language Key Considerations:</p> <ul style="list-style-type: none"> • Use simple, clear, and easy-to-understand language needed to assess the construct or aid in the understanding of the context • Avoid sentences with multiple clauses • Use vocabulary that is at or below grade level • Avoid ambiguous or obscure words, idioms, jargon, unusual names and references <p>Visual Elements/Design Key Considerations:</p> <ul style="list-style-type: none"> • Include visual elements only if the graphic is needed to assess the construct or it aids in the understanding of the context • Use the simplest graphic possible with the greatest degree of contrast, and include clear, concise labels where necessary • Avoid crowding of details and graphics

¹ For more information, refer to the General Accessibility Guidelines at:

<http://www.smarterbalanced.org/wordpress/wp-content/uploads/2012/05/TaskItemSpecifications/Guidelines/AccessibilityandAccommodations/GeneralAccessibilityGuidelines.pdf>

	Items are selected for a student's test according to the blueprint, which selects items based on Claims and targets, not task models. As such, careful consideration is given to making sure fully accessible items are available to cover the content of every Claim and target, even if some item formats are not fully accessible using current technology. ²
Development Notes:	<p>Classifying two-dimensional figures in a hierarchy based on an analysis of the relationship between properties of categories and subcategories will be assessed in Claim 3.</p> <p>Determining if a shape "is always," "is sometimes," or "is never" classified in a category will also be assessed in Claim 3.</p>

² For more information about student accessibility resources and policies, refer to http://www.smarterbalanced.org/wordpress/wp-content/uploads/2014/08/SmarterBalanced_Guidelines.pdf

<p>Task Model 1</p> <p>Response Type: Matching Tables</p> <p>DOK Level 2</p> <p>5.G.B.3 Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. <i>For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.</i></p> <p>Evidence Required: 1. The student classifies two-dimensional figures into categories and/or subcategories based on their properties.</p> <p>Tools: None</p> <p>Accessibility Note: Either identify the polygons by name or by properties.</p>	<p>Prompt Feature: The student is prompted to classify two-dimensional figures into categories/subcategories based on their properties.</p> <p>Stimulus Guidelines:</p> <ul style="list-style-type: none"> • Two-dimensional figures can have up to 10 sides. • Shapes may include rhombus, rectangle, square, kite, triangle, quadrilateral, parallelogram, pentagon, hexagon, trapezoid, circle, half circle, and quarter circle. • Characteristics may include parallel or perpendicular sides, side length, angles (right, acute, obtuse), and polygon. • Item difficulty can be adjusted via these example methods: <ul style="list-style-type: none"> ○ Student is presented with a descriptive attribute corresponding to the given polygon name with one polygon per answer choice. ○ Student is presented with a descriptive attribute corresponding to the given polygon name with two polygons per answer choice. ○ Student is not presented with a descriptive attribute corresponding to the given polygon name with one or two polygons per answer choice. <p>TM1a Stimulus: The student is presented with the name of a category/subcategory of shapes and one descriptive property of that category/subcategory.</p> <p>Example Stem: All parallelograms have two pairs of opposite, parallel, equal-length sides.</p> <p>Determine whether each polygon shown is also a parallelogram. Select Yes or No for each polygon.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th style="text-align: center;">Yes</th> <th style="text-align: center;">No</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">  Rectangle </td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="text-align: center;">  Trapezoid </td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="text-align: center;">  Rhombus </td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </tbody> </table> <p>Rubric: (1 point) The student correctly identifies if the given polygon is a parallelogram for all answer choices (e.g., Y, N, Y).</p> <p>Response Type: Matching Tables</p>		Yes	No	 Rectangle	<input type="checkbox"/>	<input type="checkbox"/>	 Trapezoid	<input type="checkbox"/>	<input type="checkbox"/>	 Rhombus	<input type="checkbox"/>	<input type="checkbox"/>
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