

<b>Claim 1: Concepts and Procedures</b> Students can explain and apply mathematical concepts and carry out mathematical procedures with precision and fluency.	
Content Domain: <b>Measurement and Data</b>	
<b>Target J [m]:</b> Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures. (DOK 1)	
Tasks associated with standard (3.MD.D.8) will assess students' ability to solve real-world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.	
Standards: 3.MD.D, 3.MD.D.8	<b>3.MD.D Geometric measurements: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.</b>  <b>3.MD.D.8</b> Solve real-world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.
Related Below-Grade and Above-Grade Standards for Purposes of Planning for Vertical Scaling: 2.MD.A, 2.MD.A.1, 2.MD.B, 2.MD.B.5, 4.MD.A, 4.MD.A.3	<b>Related Grade 2 Standards</b>  <b>2.MD.A Measure and estimate lengths in standard units.</b>  <b>2.MD.A.1</b> Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.  <b>2.MD.B Relate addition and subtraction to length.</b>  <b>2.MD.B.5</b> Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem.  <b>Related Grade 4 Standards</b>  <b>4.MD.A Solve problems involving measurement and conversion of measurement.</b>  <b>4.MD.A.3.</b> Apply the area and perimeter formulas for rectangles in real-world and mathematical problems. <i>For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.</i>
DOK Levels:	1
<b>Achievement Level Descriptors:</b>	
<b>RANGE Achievement Level Descriptor (Range ALD)</b> Target J: Geometric measurement: recognize perimeter as an attribute of plane	<b>Level 1</b> Students should be able to find the perimeter of polygons when given all side lengths in problems.
	<b>Level 2</b> Students should be able to solve for an unknown side length of a polygon when given the perimeter in problems.
	<b>Level 3</b> Students should be able to identify rectangles with the same perimeter and different areas or with the same area and different perimeters.

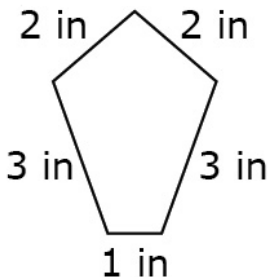
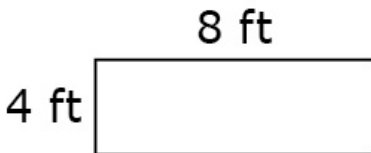
figures and distinguish between linear and area measures.	<b>Level 4</b> No Descriptor
Evidence Required:	<ol style="list-style-type: none"> <li>1. The student solves real-world and mathematical problems involving finding the perimeter of a polygon given the side lengths.</li> <li>2. The student distinguishes between area and perimeter of a rectangle.</li> </ol>
Allowable Response Types:	Equation/Numeric
Allowable Stimulus Materials:	
Construct-Relevant Vocabulary:	perimeter, quadrilateral, rectangle, area, polygon, plane figure
Allowable Tools:	None
Target-Specific Attributes:	
Non-targeted Constructs:	
Accessibility Guidance:	<p>Item writers should consider the following Language and Visual Element/Design guidelines<sup>1</sup> when developing items.</p> <p>Language Key Considerations:</p> <ul style="list-style-type: none"> <li>• Use simple, clear, and easy-to-understand language needed to assess the construct or aid in the understanding of the context</li> <li>• Avoid sentences with multiple clauses</li> <li>• Use vocabulary that is at or below grade level</li> <li>• Avoid ambiguous or obscure words, idioms, jargon, unusual names and references</li> </ul> <p>Visual Elements/Design Key Considerations:</p> <ul style="list-style-type: none"> <li>• Include visual elements only if the graphic is needed to assess the construct or it aids in the understanding of the context</li> <li>• Use the simplest graphic possible with the greatest degree of contrast, and include clear, concise labels where necessary</li> <li>• Avoid crowding of details and graphics</li> </ul> <p>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.<sup>2</sup></p>
Development Notes:	Using the perimeter and one side length to find the length of the other side will be assessed in Claim 2.

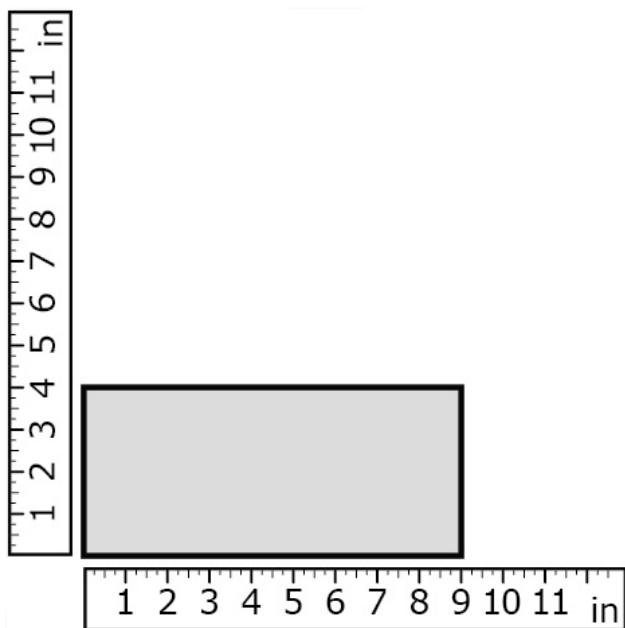
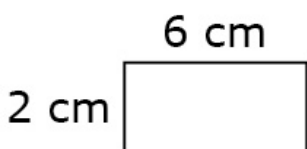
<sup>1</sup> For more information, refer to the General Accessibility Guidelines at:

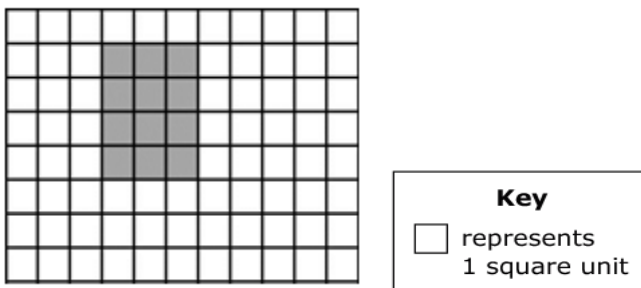
<http://www.smarterbalanced.org/wordpress/wp-content/uploads/2012/05/TaskItemSpecifications/Guidelines/AccessibilityandAccommodations/GeneralAccessibilityGuidelines.pdf>

<sup>2</sup> For more information about student accessibility resources and policies, refer to

[http://www.smarterbalanced.org/wordpress/wp-content/uploads/2014/08/SmarterBalanced\\_Guidelines.pdf](http://www.smarterbalanced.org/wordpress/wp-content/uploads/2014/08/SmarterBalanced_Guidelines.pdf)

<p><b>Task Model 1</b></p> <p><b>Response Type:</b> Equation/Numeric</p> <p><b>DOK Level 1</b></p> <p><b>3.MD.D.8</b> Solve real-world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.</p> <p><b>Evidence Required:</b> 1. The student solves real-world and mathematical problems involving finding the perimeter of a polygon given the side lengths.</p> <p><b>Tools:</b> None</p>	<p><b>Prompt Features:</b> The student is prompted to identify the perimeter of a polygon in mathematical or real-world context.</p> <p><b>Stimulus Guidelines:</b></p> <ul style="list-style-type: none"> <li>Follow any stated guidelines on allowable number ranges.</li> <li>Item difficulty can be adjusted via these example methods: <ul style="list-style-type: none"> <li>All side lengths of the polygon are labeled.</li> <li>Student finds the perimeter of a parallelogram given the length of two adjacent sides, including items where rulers are placed along the length and width of the rectangle.</li> <li>Student finds the perimeter of a regular polygon given one side length.</li> <li>The student finds the perimeter of a polygon made from combining two rectangles with one or more side lengths not labeled. (Provide enough information for the student to find the sides not labeled.)</li> </ul> </li> </ul> <p><b>TM1</b> <b>Stimulus:</b> The student is presented with a mathematical or real-world perimeter problem and is prompted to find the perimeter.</p> <p><b>Example Stem 1:</b> The length of each side of the polygon is shown.</p> <div>  </div> <p>Enter the perimeter, in inches, of the polygon.</p> <p><b>Example Stem 2:</b> Ms. Smith needs to find the perimeter of her rectangular garden. She wants to put a fence around her entire garden. Her garden measures 8 feet by 4 feet as shown.</p> <div>  </div> <p>Enter the perimeter, in feet, of the garden.</p> <p><b>Rubric:</b> (1 point) The student correctly enters the perimeter of the shape (e.g., 11; 24).</p> <p><b>Response Type:</b> Equation/Numeric</p>
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<p><b>Task Model 1</b></p> <p><b>Response Type:</b> Equation/Numeric</p> <p><b>DOK Level 1</b></p> <p><b>3.MD.D.8</b> Solve real-world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.</p> <p><b>Evidence Required:</b> 1. The student solves real-world and mathematical problems involving finding the perimeter of a polygon given the side lengths.</p> <p><b>Tools:</b> None</p>	<p><b>TM1 (continued)</b></p> <p><b>Example Stem 3:</b> The rulers give the measurement for two sides of the rectangle.</p>  <p>Enter the perimeter, in inches, of the rectangle.</p> <p><b>Example Stem 4:</b> The rectangle shown has side lengths 6 centimeters and 2 centimeters.</p>  <p>Enter the perimeter, in centimeters, of the rectangle.</p> <p><b>Rubric:</b> (1 point) The student correctly enters the perimeter of the shape (e.g., 26; 16).</p> <p><b>Response Type:</b> Equation/Numeric</p>
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<p><b>Task Model 2</b></p> <p><b>Response Type:</b> Equation/Numeric</p> <p><b>DOK Level 1</b></p> <p><b>3.MD.D.8</b> Solve real-world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.</p> <p><b>Evidence Required:</b> 2. The student distinguishes between area and perimeter of a rectangle.</p> <p><b>Tools:</b> None</p>	<p><b>Prompt Features:</b> The student is prompted to find the area and perimeter of a given rectangle.</p> <p><b>Stimulus Guidelines:</b></p> <ul style="list-style-type: none"> <li>Follow any stated guidelines on allowable number ranges.</li> <li>Background image will include a visible grid.</li> </ul> <p><b>TM2</b></p> <p><b>Stimulus:</b> The student is presented with a rectangle on a grid.</p> <p><b>Example Stem:</b> A shaded rectangle is shown on the grid.</p> <div>  <p>The figure shows a 10x10 grid. A 4x4 rectangle in the center is shaded gray. To the right of the grid is a key box containing the text: 'Key' followed by a small square icon and the text 'represents 1 square unit'.</p> </div> <p><b>Part A:</b> What is the perimeter, in units, of the shaded rectangle? Enter your answer in the first response box.</p> <p><b>Part B:</b> What is the area, in square units, of the shaded rectangle? Enter your answer in the second response box.</p> <p><b>Rubric:</b> (2 points) The student correctly enters the perimeter and area of the rectangle (e.g., 14, 12). (1 point) The student correctly enters either the perimeter or area of the rectangle.</p> <p><b>Response Type:</b> Equation/Numeric</p>
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