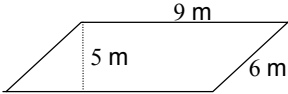
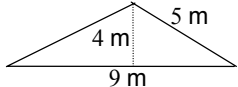
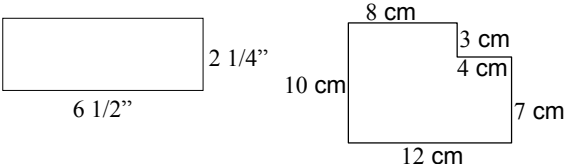

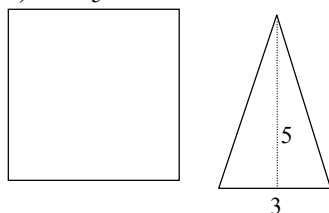
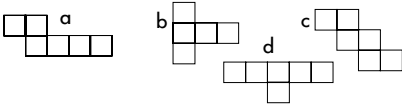


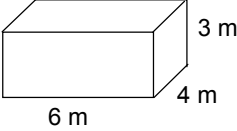
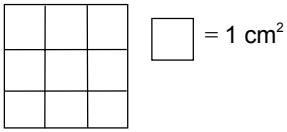
Performance Objective	Task Analysis	Benchmarks/Assessment
<p>1. Students understand and compute volumes and areas of simple objects.</p>	<p>Students:</p> <p>*1. Derive formulas for the area of right triangles and parallelograms by comparing with the area of rectangles.</p> <ul style="list-style-type: none"> <li>• Review area of a rectangle</li> <li>• Derive formula for area of a right triangle</li> <li>• Use the formula of right triangles to calculate area</li> </ul>	<ul style="list-style-type: none"> <li>• Find the area of the rectangle with a length of 6 cm. and a width of 4 cm.</li> <li>• Make a rectangle on grid paper and find the area. Make two right triangles within the rectangle by drawing a diagonal line. How does the area of each triangle compare with the rectangle? Write the formula for finding the area of a triangle.</li> </ul> <p>Draw two congruent right triangles on grid paper. Put them together to make a rectangle. Find the area of the rectangle. What is the area of one triangle? Use this information to write a formula for finding the area of a triangle.</p> <ul style="list-style-type: none"> <li>• When finding the area of a right triangle, base and height is used instead of length and width. What is the base and height of the right triangle compared to a rectangle?</li> </ul>

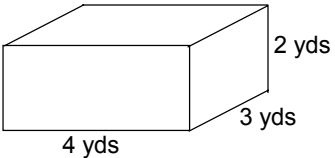
Performance Objective	Task Analysis	Benchmarks/Assessment
	<ul style="list-style-type: none"> <li>• Derive the formula of a parallelogram</li>   <li>• Use formulas to find the area of triangles and parallelograms</li> </ul>	<p>How is the formula <math>A = \frac{1}{2} \times (b \times h)</math> the same as <math>A = \frac{(b \times h)}{2}</math>?</p> <p>Use the formula to find the area of a right triangle with a base of 5 cm. and a height of 6 cm.</p> <ul style="list-style-type: none"> <li>• Draw a parallelogram on grid paper. Cut one right triangle off the end and paste it to the opposite side. What type of quadrilateral do you have now? How does the base and height of the parallelogram compare to the length and width of a rectangle? Use the information you have obtained to write the formula for finding the area of a parallelogram.</li> <li>• Use the correct formula to find the area of these polygons.</li> </ul> <div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p>Find the area of a parallelogram with a base of 12m and a height of 10m.</p>

Performance Objective	Task Analysis	Benchmarks/Assessment
	<p>*2. Construct cube and rectangular boxes from two-dimensional patterns and use this to compute the surface area for these objects.</p> <ul style="list-style-type: none"> <li>Use 2-D patterns (nets) to construct a cube</li> </ul>	<p>Find the area and perimeter. (►►FW)</p>  <p>How many segments “x” will fit on the perimeter of the square? (►►FW)</p>  <p>Find the areas (dimensions are in cm). (►►FW)</p>  <ul style="list-style-type: none"> <li>Decide whether or not you could fold these nets to make a cube.</li> </ul>  <p>Draw another net that will fold into a cube.</p>



Performance Objective	Task Analysis	Benchmarks/Assessment
	<ul style="list-style-type: none"> <li>Find the surface area of a rectangular prism</li> </ul> <p>*3. Understand the concept of volume and use the appropriate units in common measuring systems (cubic units) to compute the volume of rectangular solids.</p>	<ul style="list-style-type: none"> <li>Use the net to find the total surface area of the rectangular prism.</li> </ul> <p>The surface area of the front and back is ____.</p> <p>The surface area of both sides is ____.</p> <p>The surface area of the top and bottom is ____.</p> <p>The total surface area is ____ <math>\text{cm}^2</math>.</p> <p>Find the total surface area of a rectangular prism with a length of 3 cm, a width of 2 cm, and a height of 4 cm.</p> <ul style="list-style-type: none"> <li>If each cube has a volume of <math>1 \text{ cm}^3</math>, what is the volume of these rectangular prism?</li> </ul>

Performance Objective	Task Analysis	Benchmarks/Assessment
	<ul style="list-style-type: none"> <li>• Use the formula to calculate volume</li>   <li>4. Differentiate between and use appropriate units of measures for two and three dimensional objects (perimeter, area, and volume).</li> </ul>	<p>Use cubes (blocks) to make a rectangular prism that is 3 cubes wide, 4 cubes long, and 5 cubes high. What is the volume?</p> <p>How many 1cm. cubes would it take to fill a box 6 cm long, 3 cm wide, and 8 cm high?</p> <ul style="list-style-type: none"> <li>• Use the formula <math>V = l \times w \times h</math> to find the volume of the rectangular prism.</li> </ul> <div style="text-align: center;">  </div> <ul style="list-style-type: none"> <li>• Use this square to find the perimeter and area. Why is the area <math>\text{cm}^2</math> and the perimeter <math>\text{cm}</math>?</li> </ul> <div style="text-align: center;">  </div>

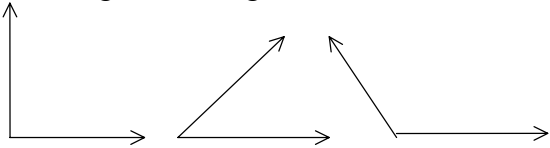
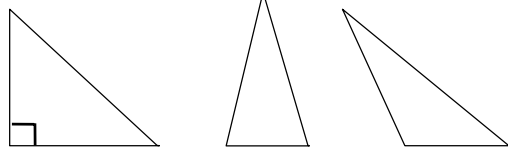
Performance Objective	Task Analysis	Benchmarks/Assessment
<p>2. Students identify, describe, draw, and classify properties of, and relationships between, plane and solid geometric figures.</p>	<p>Students:                      *1. Measure, identify, and draw angles, perpendicular and parallel lines, rectangles and triangles, using appropriate tools (straight edge, ruler, compass, protractor).</p>	<p>Use this 3-D figure to find the total surface area and volume. Explain why the units for surface area are squared (<math>\text{cm}^2</math>) and for volume they are cubed (<math>\text{cm}^3</math>).</p>  <p>Identify the relevant dimensions as length, area, or volume. (▶FW)</p> <ol style="list-style-type: none"> <li>1. The perimeter of a triangle.</li> <li>2. How much will a barrel hold?</li> <li>3. How much sod to cover a football field?</li> <li>4. Capacity of a box.</li> <li>5. Height of a tree.</li> </ol>

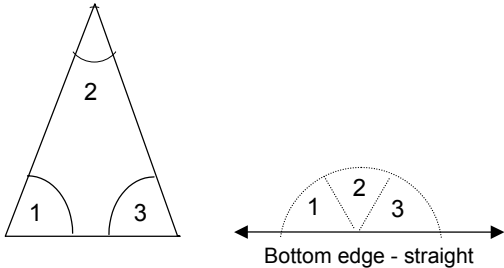
\*Power Standard

▶FW = California Mathematics Framework

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Performance Objective	Task Analysis	Benchmarks/Assessment
	<ul style="list-style-type: none"> <li>Measure, identify, and draw triangles and rectangles</li> </ul>	<p>Define the following angles and draw an example of each.</p> <p>Acute -            Obtuse -            Right -            Straight -</p> <p>Use a protractor to measure, then classify each angle as acute, obtuse, right, or straight.</p>  <p>Draw the angles using the appropriate tools.  <math>45^\circ</math> <math>180^\circ</math> <math>30^\circ</math> <math>120^\circ</math> <math>90^\circ</math> <math>165^\circ</math></p> <ul style="list-style-type: none"> <li>Classify each triangle as acute, obtuse, or right.</li> </ul>  <p>Draw and measure an acute, obtuse, and right triangle.</p>

Performance Objective	Task Analysis	Benchmarks/Assessment
	<p>*2. Know that the sum of the interior angles of any triangle is 180 degrees and the sum of the angles of any quadrilateral is 360 degrees.</p> <ul style="list-style-type: none"> <li>Know that the sum of the angle of any triangle is 180 degrees</li> </ul>	<p>Draw a triangle and then construct a triangle congruent to it.</p> <p>Draw a rectangle. Construct a rectangle congruent to it. Measure all the angles. What did you discovery?</p> <p>Draw and cut out a triangle. Tear off the corners. Place the 3 corners together. What does the bottom edge of the angles of the triangle appear to form?</p> 

Performance Objective	Task Analysis	Benchmarks/Assessment
	<ul style="list-style-type: none"> <li>• Know that the sum of any quadrilateral is 360 degrees</li> </ul>	<p>What is the measure of this angle? Try this with several triangles. Does it work every time? What can you say about the sum of the angles of a triangle?</p> <p>Draw an acute, right, and obtuse triangle. Use a protractor to measure the angles. What is the total number of degrees in each triangle?</p> <p>If I have a triangle with angles of 60 and 40 degrees, how many degrees is the third angle?</p> <p>How many degrees are the angles in an equilateral triangle?</p> <p>If an isosceles triangle has equal angles of 70 degrees, what is the third angle?</p> <ul style="list-style-type: none"> <li>• Draw a square, rectangle, and parallelogram. Measure the angles of each. What is the sum of the angles in each quadrilateral?</li> </ul>

Performance Objective	Task Analysis	Benchmarks/Assessment
	<p>3. Visualize and draw two dimensional view of three dimensional objects made from rectangular solids.</p>	<p>What would be the sum of all the angles of a trapezoid? a rhombus? any quadrilateral?</p> <p>If two angles of a parallelogram each measure 45 degrees, what do the other two angles measure?</p> <ul style="list-style-type: none"> <li>Use 3-D rectangular solids to draw the top view, side view, and bottom view.</li> </ul> <p>Use dot paper (or graph paper) to draw a rectangular prism that is 3 units, long, 2 units wide, and 4 units deep.</p>

\*Power Standard

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