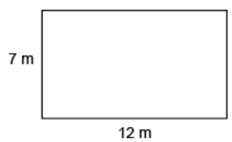
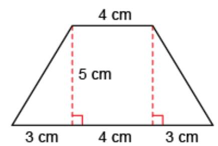
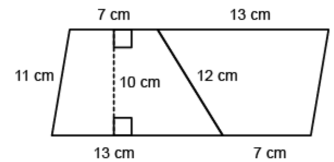
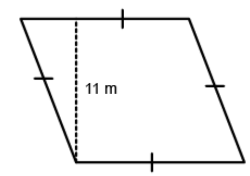
Measurement

Activity 4 Assessment
Length, Mass, Capacity, and Area Consolidation

Determining Area			
Understands area as an attribute of 2-D shapes that can be measured and compared.	Determines area by decomposing shapes into smaller shapes, then adding their areas.	Determines area by composing and decomposing shapes into shapes with known area formulas.	Flexibly composes/decomposes composite polygons and irregular shapes to solve problems
 $A = b \times h$ A = 12 m × 7 m A = 84 m^2 “I determined the area of the rectangle by multiplying the length of the base by the height.”	 “I decomposed the trapezoid into a rectangle and 2 triangles. Area of rectangle: 4 cm × 5 cm= 20 cm^2 Area of each triangle: 3 cm × 5 cm ÷ 2 = 7.5 cm^2. Area of trapezoid: 20 cm^2 + 7.5 cm^2 + 7.5 cm^2 = 35 cm^2.”	 “I doubled the trapezoid to make a parallelogram. I know the area of the trapezoid is one-half the area of the parallelogram: (13 + 7) × 10 ÷ 2 = 20 × 10 ÷ 2 = 100. The area of the trapezoid is 100 cm^2.”	 A garden is shaped like a rhombus. The perimeter of the garden is 60 m. The height of the rhombus is 11 m. What is the area of the garden? “Side length of rhombus: 60 m ÷ 4 = 15 m. A rhombus is a parallelogram with all sides equal. So, to find the area of the rhombus, I use this formula: $A = b \times h$; 15 m × 11 m = 165 m^2. The area of the garden is 165 m^2.”
Observations/Documentation			

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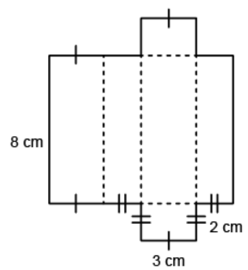
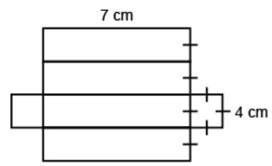
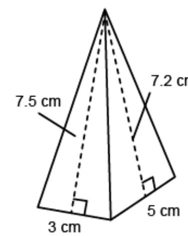
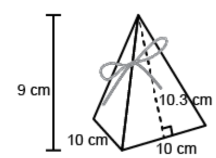
Using Nets to Determine Surface Area of Prisms and Pyramids			
Uses nets to calculate surface area by adding the partial areas.  “I added the partial areas: Area of rectangle: 7 cm × 4 cm = 28 cm^2 Area of 4 rectangles: 4 × 28 cm^2 = 112 cm^2 Area of square: 4 cm × 4 cm = 16 cm^2 Area of 2 squares: 2 × 16 cm^2 = 32 cm^2 Surface area of prism: 112 cm^2 + 32 cm^2 = 144 cm^2	Uses net to show relationship between areas of faces and surface area of prism/pyramid.  Surface Area = Sum of the areas of the 3 pairs of congruent rectangles *SA* = 2(8 cm × 3 cm) + 2(8 cm × 2 cm) + 2(2 cm × 3 cm) = 2(24 cm^2) + 2(16 cm^2) + 2(6 cm^2) = 48 cm^2 + 32 cm^2 + 12 cm^2 = 92 cm^2	Determines surface area by visualizing net and adding the areas of its faces.  Surface Area = Area of rectangle + Sum of the areas of the 2 pairs of congruent triangles *SA* = (3 cm × 5 cm) + 2(5 cm × 7.2 cm ÷ 2) + 2(3 cm × 7.5 cm ÷ 2) = 15 cm^2 + 2(18 cm^2) + 2(11.25 cm^2) = 15 cm^2 + 36 cm^2 + 22.5 cm^2 = 73.5 cm^2	Flexibly solves surface area problems by adding the areas of 2-D faces.   Which box would need less wrapping paper? **Square pyramid** *SA* = (10 cm × 10 cm) + 4(10 cm × 10.3 cm ÷ 2) = 306 cm^2 **Rectangular prism** *SA* = 2(7 cm × 8 cm) + 2(7 cm × 9 cm) + 2(8 cm × 9 cm) = 382 cm^2
Observations/Documentation			