Measurement

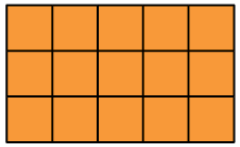
Activity 2 Assessment

Determining Area of Composite Shapes

Measuring Area of Parallelograms and Triangles

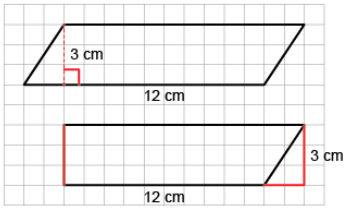
Determines the area of a rectangle.

"A rectangle is an array of squares. To find the area, I multiply the number of rows by the number of columns or use the formula $A = b \times h$.
This rectangle has area
$5 \text{ cm} \times 3 \text{ cm} = 15 \text{ cm}^2$."



Partitions and rearranges a parallelogram to form a rectangle with the same base and height.

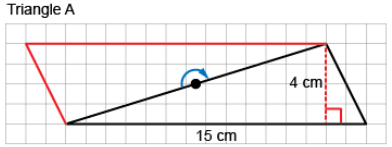
Parallelogram B



"I partitioned the parallelogram
and moved the triangle to
create a rectangle.
I then found the area of the rectangle:
$A = b \times h = 12 \text{ cm} \times 3 \text{ cm} = 36 \text{ cm}^2$.
The area of the parallelogram is also 36 cm^2."

Doubles a triangle to create a parallelogram (area of triangle is one-half that of parallelogram).

Triangle A



"I rotated the triangle to make a parallelogram
with the same base and height.
The area of the triangle is one-half
the area of the parallelogram.
Area of parallelogram:
$15 \text{ cm} \times 4 \text{ cm} = 60 \text{ cm}^2$
Area of triangle: $60 \text{ cm}^2 \div 2 = 30 \text{ cm}^2$
So, the formula for the area of a triangle is:
$A = b \times h \div 2$."

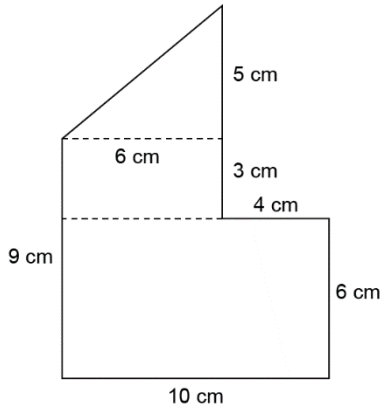
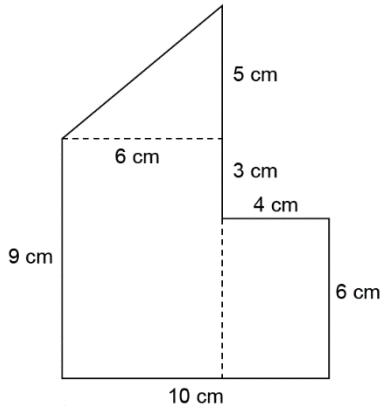
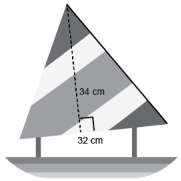
Observations/Documentation

Measurement

Activity 2 Assessment

Determining Area of Composite Shapes

Measuring Area of Parallelograms and Triangles (cont'd)

Determines area by decomposing shapes into smaller shapes (rectangles, triangles, parallelograms), then adding their areas.	Decomposes a composite shape in different ways and realizes that its area doesn't change (conservation of area).	Flexibly solves problems involving the relationships among the areas of rectangles, parallelograms, and triangles.
		 What is the area of the sail on the toy boat?
"I decomposed the shape into a triangle and 2 rectangles. Area of small rectangle: 3 cm × 6 cm = 18 cm^2 Area of large rectangle: 6 cm × 10 cm = 60 cm^2 Area of triangle: 6 cm × 5 cm ÷ 2 = 15 cm^2 Area of composite shape: 18 cm^2 + 60 cm^2 + 15 cm^2 = 93 cm^2"	"I decomposed the shape into a triangle and 2 rectangles. Area of small rectangle: 4 cm × 6 cm = 24 cm^2 Area of large rectangle: 9 cm × 6 cm = 54 cm^2 Area of triangle: 6 cm × 5 cm ÷ 2 = 15 cm^2 Area of composite shape: 24 cm^2 + 54 cm^2 + 15 cm^2 = 93 cm^2 The area is always the same no matter how I decompose the shape."	"I doubled the triangular sail to make a parallelogram with the same base and height. I found the area of the parallelogram: 34 cm × 32 cm = 1088 cm^2, then divided the area in half to find the area of the triangle: 1088 cm^2 ÷ 2 = 544 cm^2."

Observations/Documentation