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| **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* × *h*. This rectangle has area 5 cm × 3 cm = 15 cm2.” | Partitions and rearranges a parallelogram to form a rectangle with the same base and height.“I partitioned the parallelogram and moved the triangle to create a rectangle. I then found the area of the rectangle: *A* = *b* × *h* = 12 cm × 3 cm= 36 cm2. The area of the parallelogram is also 36 cm2.” | Doubles a triangle to create a parallelogram (area of triangle is one-half that of parallelogram).“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 cm × 4 cm = 60 cm2Area of triangle: 60 cm2 ÷ 2 = 30 cm2So, the formula for the area of a triangle is: *A* = *b* × *h* ÷ 2.” |
| **Observations/Documentation** |
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| **Measuring Area of Parallelograms and Triangles (cont’d)** |
| Determines area by decomposing shapes into smaller shapes (rectangles, triangles, parallelograms), then adding their areas. A diagram of a triangle  Description automatically generated“I decomposed the shape into a triangle and 2 rectangles. Area of small rectangle: 3 cm × 6 cm = 18 cm2 Area of large rectangle: 6 cm × 10 cm = 60 cm2 Area of triangle: 6 cm × 5 cm ÷ 2 = 15 cm2Area of composite shape: 18 cm2 + 60 cm2 + 15 cm2 = 93 cm2” | Decomposes a composite shape in different ways and realizes that its area doesn’t change (conservation of area).A diagram of a triangle  Description automatically generated“I decomposed the shape into a triangle and 2 rectangles. Area of small rectangle: 4 cm × 6 cm = 24 cm2 Area of large rectangle: 9 cm × 6 cm = 54 cm2 Area of triangle: 6 cm × 5 cm ÷ 2 = 15 cm2Area of composite shape: 24 cm2 + 54 cm2 + 15 cm2 = 93 cm2The area is always the same no matter how I decompose the shape.” | 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 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 cm2, then divided the area in half to find the area of the triangle: 1088 cm2 ÷ 2 = 544 cm2.” |
| **Observations/Documentation** |
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