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| **Relationships Among Standard Units of Area**  |
| Recognizes that area is measured using square units”I covered the rectangle with square tiles and determined the area to be 20 square units.” | Relates a centimetre/metre to a square centimetre/metre A square with a number and a number  Description automatically generated with medium confidence“A square with side length 1 m has an area of 1 m2.” | Expresses the relationship between square centimetres, square metres, and square kilometres “1 m = 100 cm, so 1 m2 = 100 cm × 100 cm = 10 000 cm21 km = 1000 m, so 1 km2 = 1000 m × 1000 m = 1 000 000 m2” |
| **Observations/Documentation** |
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| **Relationships Among Standard Units of Area (cont’d)** |
| Identifies which metric unit should be used to measure an area The Classroom Floor “I could use a metre stick to determine the length and width of the classroom. So, I would use a square metre to measure the area of the floor.” | Uses benchmarks to estimate area using metric units, then measures to check (square centimetre, square metre) The Classroom Floor ”I visualize covering the classroom floor with about 50 tabletops, so I estimate its area to be about 50 m2. When I measured to check, the classroom was 8 m long and 6 m wide. So, the actual area is 8 m × 6 m = 48 m2. My estimate was close.” | Flexibly chooses an appropriate metric unit to estimate and measure area and explains reasoning “I’d estimate and measure the area of the soccer field in square metres. I could use square centimetres, but the number would be so large that it would be difficult to relate to.” |
| **Observations/Documentation** |
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| **Measuring Area and Perimeter of Rectangles** |
| Recognizes that the perimeter of a rectangle is the distance around and area is the number of tiles that cover it “Perimeter of rectangle: 3 + 5 + 3 + 5 = 16, 16 units; Area: 3 × 5 = 15, 15 square units.” | Uses algebraic formulas to determine the perimeter and area of a rectangle“To determine the perimeter of a rectangle, I use the formula *P* = 2*b* + 2*h* and to determine the area, I use the formula *A* = *b* × *h*. For a rectangle with *b* = 6 m and *h* = 3 m:Perimeter: 2 × 6 m + 2 × 3 m = 18 mArea: 6 m × 3 m = 18 m2.” | Compares the perimeters and areas of rectangles “Both rectangles have a perimeter of 18 cm:2 × 4 + 2 × 5 = 18; 2 × 6 + 2 × 3 = 18. The rectangles have different areas:4 cm × 5 cm = 20 cm2 and 6 cm × 3 cm = 18 cm2.” |
| **Observations/Documentation** |
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| **Measuring Area and Perimeter of Rectangles (cont’d)** |
| Constructs a rectangle with given perimeter/area and explains strategy usedPerimeter = 24 m“To construct a rectangle with perimeter 24 m, the sum of the base and height needs to be 24 m ÷ 2 = 12 m. I chose 8 m and 4 m. To determine the area, I multiplied the base by the height: 8 m × 4 m = 32 m2.” | Constructs different rectangles for a given area and describes the rectangle with the least perimeterArea = 16 cm2A diagram of a rectangular object  Description automatically generated“The rectangle with the least perimeter is a square.” | Flexibly solves problems involving a given area and/or perimeter in a variety of contexts.A square table can seat 1 student on each side. 24 tables are pushed together to make 1 large rectangular table. What is the greatest number of students who could be seated?“For an area of 24 square units, the length and width can be: 1 and 24; 2 and 12; 3 and 8; 4 and 6. For the greatest number of students, the perimeter has to be the greatest, which means its width is the least, 1 unit, and the length is 24 units. The perimeter is 50 units, so 50 students can be seated.” |
| **Observations/Documentation** |
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