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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 cm2  1 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 m  Area: 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 used  Perimeter = 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 perimeter  Area = 16 cm2  A 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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