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| **Determining the Volume of Right Rectangular Prisms** | | |
| Understands that volume is a measure of how much space an object fills.    “The rectangular prism has a base that is a rectangle. It is made of 24 cubes, so its volume is 24 cubic units. | Uses benchmarks to estimate volume using metric units.    “I would use a large dog crate as a benchmark for 1 m2 to measure the volume of storage room.” | Use a formula to calculate the volume of a rectangular prism.    “I determined the area of the base:  9 m × 8 m = 72 m2. Then I multiplied the area  of the base by the height: 72 m2 × 2 m = 144 m3. The volume of the box is 144 m3.” |
| **Observations/Documentation** | | |
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| **Determining the Volume of Right Rectangular Prisms (cont’d)** | | |
| Constructs different rectangular prisms for a given volume.  Make as many different rectangular prisms as you can with a volume of 30 cm3.  “I made 5 different prisms. The dimensions are:  1 cm by 1 cm by 30 cm; 1 cm by 2 cm by 15 cm;  1 cm by 3 cm by 10 cm; 1 cm by 5 cm by 6 cm;  2 cm by 3 cm by 5 cm.” | Sketches rectangular prisms and calculates volume using formula *V* = base area × height.    “The base area is: 3 cm × 5 cm = 15 cm2. The height is 7 cm.  Volume = 15 cm2 × 7 cm = 105 cm3.” | Flexibly solves problems in various contexts that involve the volume of rectangular prisms.  A box has volume 4500 cm3.  The box has length 30 cm and width 15 cm.  What is the height of the box?  “The area of the base of the box is  30 cm × 15 cm = 450 cm2.  *V* = base area × *h*  4500 cm3 = 450 cm2 × *h*  *h* = 10 cm  The box has height 10 cm.” |
| **Observations/Documentation** | | |
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