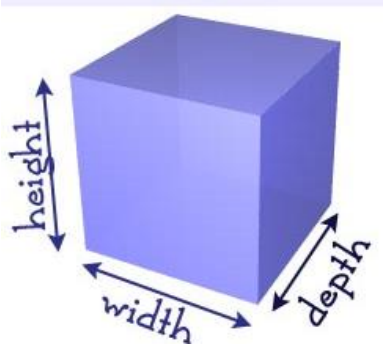
Module 5 Grade 5

In this unit your student will focus on Addition and Multiplication with Volume and Area:

- ✓ Students combine prior knowledge of area with newly acquired knowledge of fraction multiplication to determine the area of rectangular figures with fractional side lengths.
- ✓ Students learn that volume is an attribute of solid figures and understand that cubic units are used to measure it.
- ✓ Students use improvised, customary, and metric units, to build three-dimensional shapes, including right rectangular prisms, and count units to find the volume.
- ✓ Students make connections between area and volume.
- ✓ Students learn formulas for finding the volume of a right rectangular prism
- ✓ Students solidify the connection between volume as packing and volume as filling by comparing the amount of liquid that fills a container to the number of cubes that can be packed into it.
- ✓ Students learn that 1 cubic centimeter is equal to 1 milliliter.
- ✓ Word problems involving the volume of rectangular prisms with whole number edge lengths solidify understanding and give students opportunity to reason about scaling in the context of volume.
- ✓ Student complete a design project that gives them the opportunity to apply the concepts and formulas they have learned to create a sculpture of a specified volume composed of varied rectangular prisms with parameters given in the project description.
- ✓ Students use rulers and set squares to construct and measure rectangles with fractional side lengths and find their areas.
- ✓ Students apply their extensive knowledge of fraction multiplication to interpret areas of rectangles with fractional side lengths and solve real world problems involving these figures, including reasoning about scaling through contexts.
- ✓ Students draw two-dimensional shapes in order to analyze their attributes and use those attributes to classify them through an in-depth analysis of the properties and defining attributes of quadrilaterals.
- ✓ Students see, for example, that the same process that they used to construct parallelogram will also produce a rectangle when all angles are constructed to measure 90 degrees.
- ✓ Students analyze defining attributes and create a hierarchical classification of quadrilaterals.

Terminology:

- ✓ 2 Dimensional – A shape with only two dimensions such as length and width with no depth such as a triangle, square or circle
- ✓ 3 Dimensional – an object that has width, depth and height
- ✓ Solids – a three dimensional object such as a cube, pyramid, sphere, or cylinder



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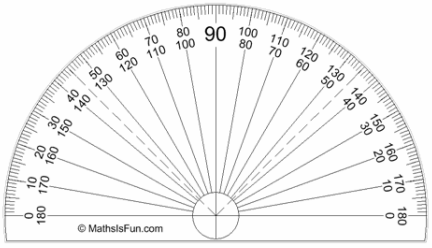
- ✓ Cubic Units – a measure of volume or capacity
- ✓ Protractor – an instrument to draw or measure angles



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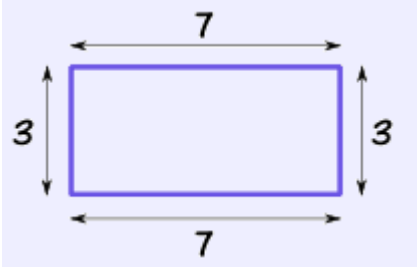
- ✓ Formula for area – the surface of a two dimensional object found by multiplying a= length x width or a= width x height
- ✓ Formula for perimeter – the distance around a two-dimensional shape. In the parallelogram, the formula is Perimeter= 2Length + 2Width



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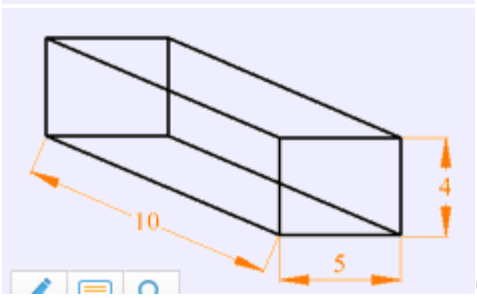
- ✓ Volume – the amount of space a three dimensional shape occupies. Units of volume: cubic centimeters, cubic meters, liters, fluid ounce, cubic inch, cubic foot, pints, gallons, and bushels



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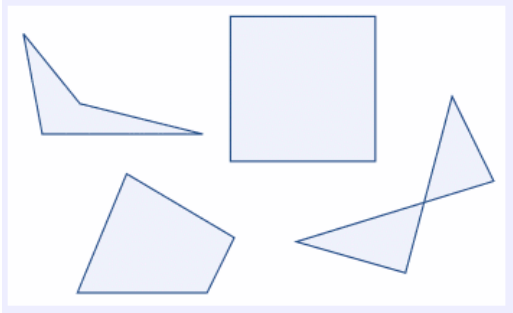
- ✓ Attributes – characteristics such as length, size, number of sides
- ✓ Quadrilateral – a flat shape with straight sides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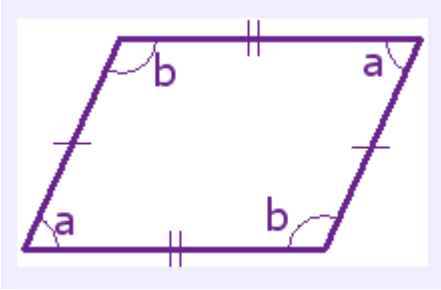
- ✓ Parallelogram – a 4-sided flat shape with straight sides where opposite sides are parallel. Opposite sides are equal length and opposite angles are equal. Squares, rectangles and rhombuses are all parallelograms.



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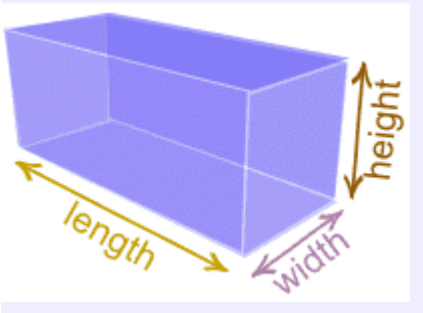
- ✓ Rectangular Prism – a 3-dimensional object with 3 faces that are rectangles. It is a prism because it has the same cross-section along a length



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- ✓ Prism – a solid object that has two identical ends and all flat sides. The cross-section is the same all along its length. The shape of the end gives the prism its name such as a rectangular prism (pictured above) or a triangular prism (pictured below). It is also a polyhedron.


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Activities you can do at Home:

- ✓ Play online math games on Sum Dog or do practice sets on TenMarks
- ✓ Have students find the area and perimeter of rooms in your home to determine how many tiles or rug would need to be purchased if you decided to remodel. Have them consider similar for small areas such as an animal's cage.
- ✓ Have students determine the volume of household containers
- ✓ Consider reading *Super Bowl Super Touchdowns*