

Spotlight On: Collaborative Learning

Throughout the course, your student will participate in collaborative learning activities. Learning experiences that are active, social, and student-owned lead to higher-level thinking and increased retention of information. When working together, students can have a boost in self-esteem and a sense of responsibility.

The Big Picture

Growing From

Interpreting fractions as division;
Interpreting ratios;
Representing 3D figures

Working On

Fractions and decimals;
Probability of events;
Proportionality of figures;
Cross sections and volume

Growing To

Identifying irrational numbers;
Compound probability;
Volume of prisms and pyramids

Need Help?

Methods & Meanings boxes are included in the Mathematician's Notebook as reference.

2.1.3: Fraction $\Leftrightarrow$ Decimal $\Leftrightarrow$ Percent

2.2.2: Probability Vocabulary and Definitions

2.2.4: Theoretical vs. Experimental Probability

2.3.5: Scale Factor

2.4.1: Solving Proportions

2.4.2: Polygons, Prisms, and Pyramids

Current Topics

In this chapter, students will convert fractions to decimals, determine the probability of single events, determine whether two geometric figures are proportional, recognize cross sections of solids, and calculate the volume of rectangular and triangular prisms.

Fraction and Decimal Conversions (Section 2.1)

In this section, students learn how to convert between fractions and decimals.

To convert from a fraction to a decimal, divide the numerator by the denominator.

$$\frac{3}{8} = 3 \div 8 = 0.375$$

To convert from a decimal to a fraction, use the digits as the numerator. Use the place value of the decimal as the denominator.

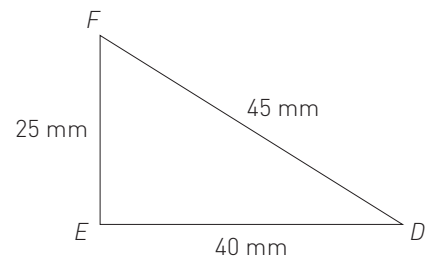
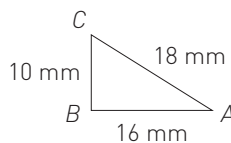
$$0.2 = \frac{2}{10} = \frac{1}{5}$$

Probability (Section 2.2)

The probability of an event is the likelihood the event will occur. Probabilities can be represented as fractions, decimals, and percents. For example, if a bag contains 49 total marbles and 12 are red marbles, the probability of pulling a red marble out of the bag is $P(\text{red}) = \frac{12}{49} \approx 0.244 \approx 24.4\%$.

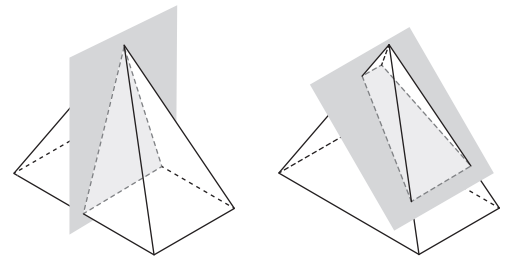
Scale Drawings (Section 2.3)

Two geometric figures are proportional if all corresponding angles are the same. Additionally, the ratio of each of the corresponding side lengths are equal. Since each pair of corresponding angles is the same and each pair of corresponding sides has a ratio of $\frac{5}{2}$, the triangles shown are proportional.



Cross Sections (Section 2.4)

Cross sections of three-dimensional figures can be taken by "slicing" through the figure. For example, when a pyramid is sliced horizontally, the shape of the cross section is the same as the pyramid's base. Slicing vertically or diagonally may produce differently shaped cross sections.



Try This at Home!

With your student, try to predict the shape of the cross section of different items sliced vertically, horizontally, or diagonally, then test your prediction. For example, an apple sliced vertically might have more of an oval shape, but sliced horizontally might be circular.

