

Spotlight On: Rough Draft Talk

Throughout *Inspiring Connections*, students will engage in rough draft talk, where they are encouraged to share ideas and brainstorming on problems, even if their initial methods are incorrect. It is common for students to feel that being wrong in mathematics is a bad thing, when in fact it is an asset and one of the ways to build deeper conceptual understanding over time. Some of the ways rough draft talk is encouraged in the course are through Number Talks and Dot Talks, where students make observations about an open problem where there are multiple ways to arrive at the correct answer.

The Big Picture

Growing From

Understanding unit rates;
Operations on decimals;
Reasoning about ratios

Working On

Proportional relationships;
Operations on integers;
Graphs of proportional relationships

Growing To

Graphing proportional relationships;
Operations on irrational numbers

Need Help?

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

- 1.1.2: Histograms
- 1.1.3: Measures of Central Tendency
- 1.1.4: Quartiles and Interquartile Range (IQR)
- 1.1.5: Equivalent Ratios
- 1.2.2: Integers
- 1.2.4: Integer Addition and Subtraction
- 1.2.5: Connecting Integer Addition and Subtraction

Current Topics

In this chapter, students will write equivalent ratios and practice addition and subtraction of integers. They will also answer questions based on graphs of real-world proportional relationships.

Proportions and Proportional Relationships (Section 1.1)

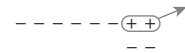
A ratio is a comparison of two quantities. If two ratios can be reduced to the same value, they are equivalent. For example, if a recipe calls for 2 cups of flour to 1 cup of water, an equivalent ratio would be 4 cups of flour to 2 cups of water, as well as 1 cup of flour to $\frac{1}{2}$ cup of water. Ratios can be written as fractions, such as the equivalent ratios shown.

$$\frac{10}{28} = \frac{5}{14} = \frac{15}{42} = \frac{20}{56} = \frac{30}{84} = \frac{35}{98}$$

Integer Operations (Section 1.2)

Integer addition and subtraction are related operations. For example, adding a negative integer has the same result as subtracting a positive integer. This can be represented visually with integer tiles. Removing two positive tiles produces a difference of -8 .

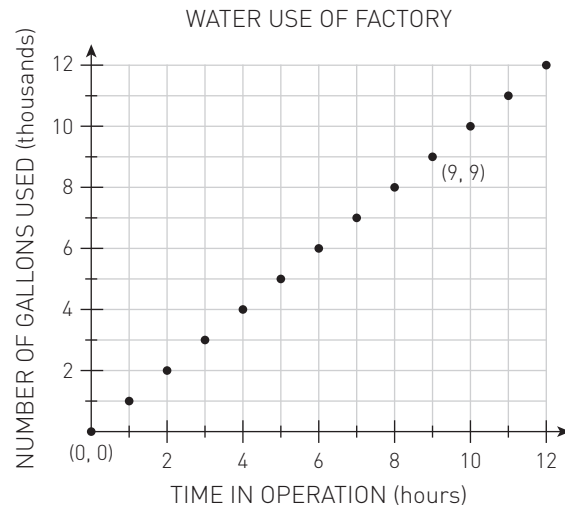
$$-6 - 2 = -6 + (-2) = -8$$



Proportions and Graphs (Section 1.3)

Graphs of proportional relationships can reveal information about a context and can be used to solve problems. For example, from the graph shown, it can be concluded that:

- The factory uses 9,000 gallons of water when it is in operation for 9 hours.
- The factory uses 0 gallons of water when it is not in operation.



Try This at Home!

Use household items such as two differently colored beans or game pieces to represent positive and negative integer tiles. Ask your student to show you how to solve some addition and subtraction problems using these items.

