

## Spotlight On: Memory

The memory pathways in the brain are similar to hiking trails: the more a pathway is used and walked upon, the easier it is to follow. One way to build a memory path is to reflect on learning. Students have been writing in a reflection journal this year, not only to have a place to refer back to prior learnings, but also to allow their brains to consolidate new memories as they are formed. The act of writing something down gives the brain the opportunity to interact with information in a new way, increasing higher-level thinking and ownership of their mathematical learnings. Writing in a journal may be new to your student this year, but it is a skill they can take with them as they continue as lifelong learners.

## The Big Picture

### Growing From

Algebraic expressions

### Working On

Rates;  
Equations;  
Inequalities

### Growing To

Proportional relationships;  
Equations and Inequalities

## Need Help?

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

9.1.6: Solving Equations

9.1.7: Solutions to Inequalities

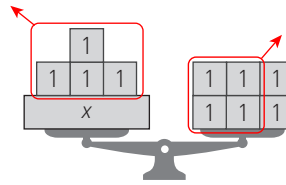
9.2.3: Distance, Rate, and Time

## Current Topics

This chapter draws upon the work with ratios and rates that students did in Chapters 2 and 4, as well as the work with variables and equations they did in Chapter 8. In future courses, students will have opportunities to further develop these skills as they prepare for the formal study of algebra.

### Equations and Inequalities (Section 9.1)

In this section, students will model equations in various ways to help them visualize what the solution means, such as the balance scale shown in the image below. They will first use their intuition to determine what the value of the variable is. Gradually, they will learn to use inverse operations. Inverse operations are operations that undo each other, such as addition and subtraction or multiplication and division.



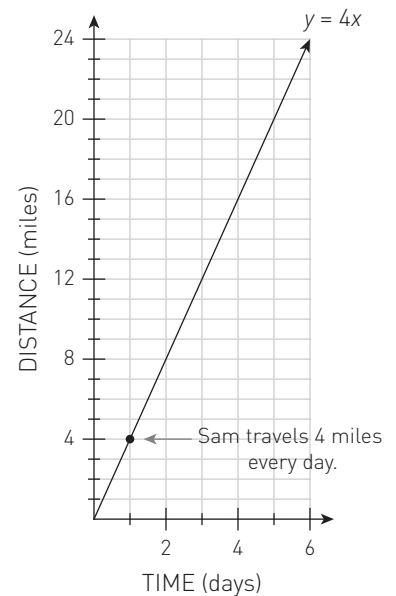
$$\begin{aligned} x + 4 &= 6 \\ x + 4 - 4 &= 6 - 4 \\ x &= 2 \end{aligned}$$

### Rate Problems (Section 9.2)

In this section, students will calculate and compare rates in contexts using different representations. Students will represent rates using tables, equations, graphs, and descriptions. They will combine this concept with equation solving from Section 9.1, with a primary focus on the relationship  $d = rt$ , or "distance equals rate times time." In the examples below, the rate is 4 miles per day.

| Time (days) | Distance (miles) |
|-------------|------------------|
| 2           | 8                |
| 4           | 16               |
| 6           | 24               |
| $x$         | $y$              |

8 miles in 2 days



## Try This at Home!

What is something you and your student both do that takes you different amounts of time? For example, running or biking. Ask your student to help you calculate and compare your rates!

