LESSON

## Dear Family,

This week your student is exploring proportional relationships.

Here are some examples of **proportional relationships** that you may be familiar with.

- Ingredients of a recipe are proportional to one another: you use the same proportions when making smaller or larger batches.
- The earnings of hourly employees are proportional to the number of hours worked: *a person who works 3 hours will earn 3 times the hourly wage*.

Suppose Ichiro's hourly wage is \$15. When he works 4 hours, he earns \$60. His hourly wage of \$15 does not change. In Ichiro's case, the **constant of proportionality** between amount earned and hours worked is 15. When a relationship is proportional, *constant of proportionality* is another term for *unit rate*.

Your student will be modeling proportional relationships like the one below.

Jennifer goes apple picking with her family at a nearby farm. Each pound of apples they pick costs \$2. The total cost depends on the number of pounds of apples they pick.

> **ONE WAY** to represent a proportional relationship is with a table.

Apples (lb)	0	1	2	3	4	5	6	7	8
Cost (\$)	0	2	4	6	8	10	12	14	16

ANOTHER WAY is to use a double number line.



Both representations show that the cost is always twice the number of pounds of apples. That means the constant of proportionality in this situation is 2.



Use the next page to start a conversation about proportional relationships.

## LESSON 3 | UNDERSTAND PROPORTIONAL RELATIONSHIPS

## **Activity** Thinking About Proportional Relationships Around You

## Do this activity together to investigate proportional relationships in the real world.

Have you ever played a video game and found that a day in the game was shorter than a day in real life? The game designers might have decided that 20 minutes pass in game time for each minute that passes in real time. That would mean that the relationship between real time and game time is a proportional relationship!



minutes

pass

minute

passes



Where else do you see proportional relationships in the world around you?