WarmUp

Activity 5.3 **Start Thinking!**
For use before Activity 5.3

A grocery store has three options for your favorite hot breakfast cereal: single serving containers, a box of several single serving packets, and a large container. How can you decide which is the best buy for your money?

EssentialQuestion

How can you use rates to describe changes in real-life problems?

LessonTarget

Students will be able to:

- find rates, unit rates, and equivalent rates.

Self-EvaluationRubric

Score	Description
4	I can teach other students how to find rates, unit rates, and equivalent rates.
3	I can find rates, unit rates, and equivalent rates.
2	I recognize how to find rates, unit rates, and equivalent rates.
1	I do not know how to find rates, unit rates, and equivalent rates.

Lesson Target: To be able to find rates, unit rates, and equivalent rates.

$\frac{60 \text{ mi}}{1 \text{ hour}}$

Key Idea

Rate and Unit Rate

Words A **rate** is a ratio of two quantities using different units. A **unit rate** compares a quantity to one unit of another quantity. **Equivalent rates** have the same unit rate.

Numbers You pay \$27 for 3 pizzas.

Rate: \$27 : 3 pizzas

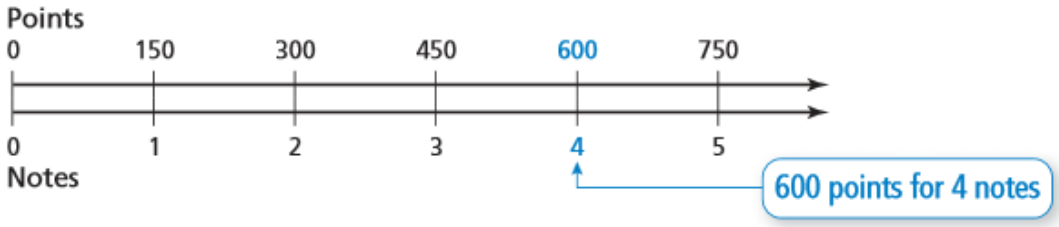
Unit rate: \$9 : 1 pizza

Algebra Rate: a units : b units Unit rate: $\frac{a}{b}$ units : 1 unit

Lesson Target: To be able to find rates, unit rates, and equivalent rates.

1 Writing a Rate

The double number line shows the rate at which you earn points for successfully hitting notes in a music video game. Write a rate that represents this situation.



∴ One possible rate is 600 points for every 4 notes.

Lesson Target: To be able to find rates, unit rates, and equivalent rates.

2 Finding a Unit Rate

A piece of space junk travels 5 miles in 8 seconds. How far does it travel per second?

Use a ratio table and divide by 8 to write an equivalent rate in which the time is 1 second.

$\div 8$

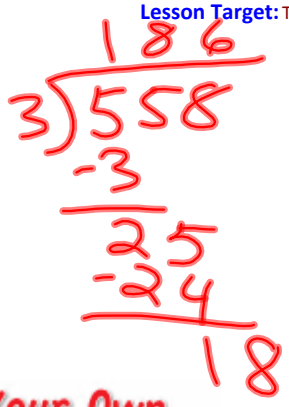
Distance (miles)	5	$\frac{5}{8}$
Time (seconds)	8	1

$\div 8$

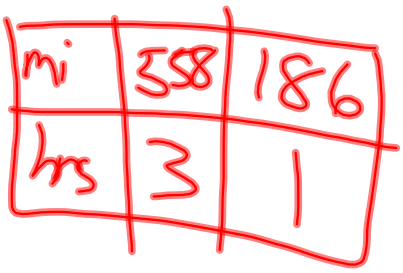
The rate 5 miles : 8 seconds is equivalent to $\frac{5}{8}$ mile : 1 second.

∴ So, the space junk travels $\frac{5}{8}$ mile per second.

Lesson Target: To be able to find rates, unit rates, and equivalent rates.

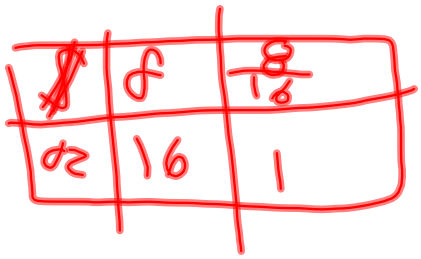


Tryit!



On Your Own

1. Write another rate that represents the situation in Example 1.
2. A Japanese bullet train travels 558 miles in 3 hours. How far does it travel every hour?
3. You pay $8 for 16 ounces of sliced turkey. Write a rate that gives the price for each ounce of turkey.



Lesson Target: To be able to find rates, unit rates, and equivalent rates.

3 Finding Equivalent Rates

a. A chef buys 6 pounds of salmon fillets for $51. How much will the chef pay for 9 more pounds of salmon fillets?

Using a ratio table, divide to find the unit rate and then multiply to find the cost for 9 pounds of salmon fillets.

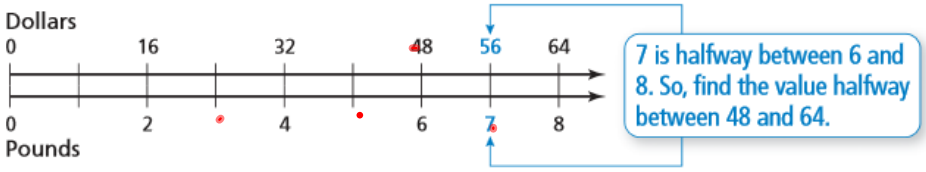
Cost (dollars)	51	8.5	76.5
Salmon (pounds)	6	1	9

÷6 ×9 ÷6 ×9

∴ So, the chef will pay $76.50 for 9 more pounds of salmon fillets.

b. You buy 2 pounds of tilapia fillets for $16. What is the cost for 7 pounds of tilapia fillets?

Because $16 is easily divided into halves, fourths, and eighths, it is appropriate to model the rate using a double number line.



∴ So, the cost for 7 pounds of tilapia fillets is $56.

Lesson Target: To be able to find rates, unit rates, and equivalent rates.

Tryit!

$3 \quad \frac{3}{4} \quad 45$

$4 \overline{)60}$

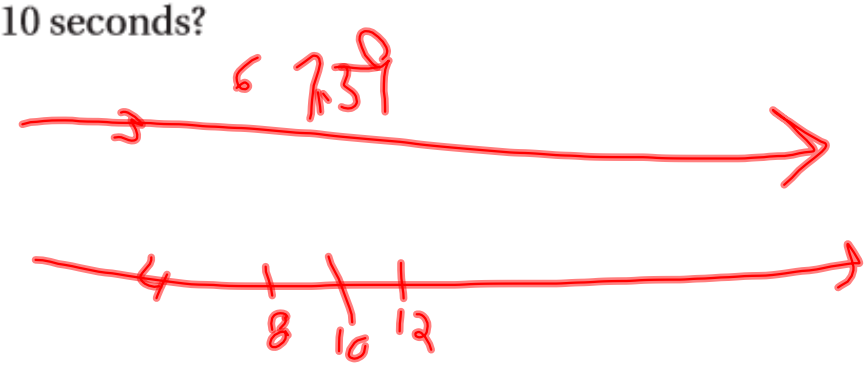
$\frac{3}{4} \cdot \frac{60}{1} = \frac{45}{1}$

On Your Own

4. Your download speed is 3 megabytes every 4 seconds.

   a. How many megabytes can you download in 1 minute?

   b. Construct a double number line that represents the situation. How many megabytes can you download in 10 seconds?



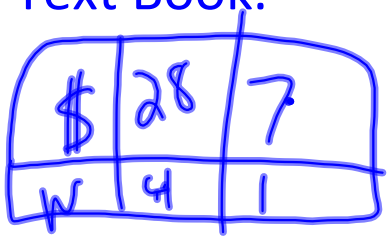
Lesson Target: To be able to find rates, unit rates, and equivalent rates.

Assignment

Do numbers:

4, 5, 7, 10, 11, 15, 17, 19, 22, 25, 27

on pages 208 & 209 of your (hard cover) Big Ideas Text Book.



Lesson Target: To be able to find rates, unit rates, and equivalent rates.

Homework

Big Ideas Record and
Pracce Journal
(so cover)
Page 108

Self-EvaluationRubric

Score	Description
4	I can teach other students how to find rates, unit rates, and equivalent rates.
3	I can find rates, unit rates, and equivalent rates.
2	I recognize how to find rates, unit rates, and equivalent rates.
1	I do not know how to find rates, unit rates, and equivalent rates.

Lesson Target: To be able to find rates, unit rates, and equivalent rates.

Lesson 5.1 May 29, 2014

EssentialQuestion

How can you use rates to describe changes in real-life problems?

LessonTarget

Students will be able to:

- find rates, unit rates, and equivalent rates.