☆M STAR
INTERVENTION

Lesson 11: Comparing Rates

Lesson Objectives

- Students will compare rates, using the unit rate.

Instructional Materials

Material	Quantity	Description
How Am I Doing? graph	1 per student	
Colored pencils	1 per student	
Display Masters	1 each	• Preview: Key Idea: Comparing Rates • Demonstrate: Better Price A–D • Demonstrate: Slower Rate A–D
Handouts	1 per student	• Cumulative Review • Practice 1 • Practice 2 • Independent Practice
Answer Keys	1 each	• Cumulative Review • Practice 1 • Practice 2 • Independent Practice

Cumulative Review

Have students answer the questions on the Cumulative Review handout. Go over the answers. Correct misconceptions. Have students use a colored pencil to make corrections as needed. Collect student papers to determine who needs additional instruction.

Preview

This lesson will build on students' conceptual knowledge of generating rates and finding unit rates.

Display and introduce through a brief explanation the key idea for this lesson:

● Rates can be compared by calculating and comparing the unit rates.

Use the Key Idea: Comparing Rates **DM** display master as needed.

Engage Prior/Informal Knowledge

To open the lesson, present questions to activate students' background knowledge and preskills, such as the following:

● Tony spent $12 on 4 pounds of cherries. How much did he spend per pound?

$$\underline{\hspace{3cm}} \qquad \underline{\hspace{3cm}} = \frac{\underline{\hspace{3cm}}}{1 \text{ pound}}$$

● Carrie spent $25 on 5 shirts. How much did each shirt cost?

$$\underline{\hspace{3cm}} \qquad \underline{\hspace{3cm}} = \frac{\underline{\hspace{3cm}}}{1 \text{ shirt}}$$

Demonstrate

1. Generate the rate, find the unit rate, and compare the rates to find the better price.

> **Say:** *In the previous lesson, we generated equivalent rates, using the unit rate and multiplication. Today, we will compare rates, using the unit rate.*

> **Say:** *Consider the following situation: Mary went to the grocery store and bought 24 candy bars for $12. Jared went to a different store and bought 18 of the same candy bars for $6. Did Mary of Jared get a better price?*

Use the Better Price A **DM** display master as needed.

> **Say:** *In this situation, we need to compare rates to find which person got the better price for candy bars.*

Use the Better Price B **DM** display master as needed. Fill in the rates with students.

> **Say:** *First, we need to find the rates of candy bars to money spent for Mary and Jared. We know Mary bought 24 candy bars and spent $12. We know Jared bought 18 candy bars and spent $6.*

Use the Better Price C **DM** display master as needed. Complete the first unit rate with students.

> **Say:** *Next, we need to find the amount Mary and Jared spent on each candy bar, or unit rate, to determine who got a better price. The rate we generated for Mary was $\frac{24 \text{ candy bars}}{\$12}$. What is the greatest common factor of 24 and 12? (12) To find the unit rate, we need to divide the numerator and denominator of the fraction representing the rate by 12. When we divide 24 by 12, we get 2. When we divide 12 by 12, we get 1. Therefore, the unit rate for Mary is $\frac{2 \text{ candy bars}}{\$1}$.*

Allow students to attempt to find the second unit rate on their own. Then, discuss how to find the unit rate.

> **Say:** *We follow the same process to find the unit rate for Jared. The rate we generated for Jared was $\dfrac{18\ candy\ bars}{\$6}$. What is the unit rate for Jared? ($\dfrac{3\ candy\ bars}{\$1}$)*

Use the Better Price D **DM** display master as needed.

> **Say:** *Now we need to compare the unit rates to determine the better price. The unit rate for Mary is $\dfrac{2\ candy\ bars}{\$1}$, and the unit rate for Jared is $\dfrac{3\ candy\ bars}{\$1}$. Who paid the better price? (Jared) How do you know? (Jared got 3 candy bars for each dollar, whereas Mary got only 2 candy bars for each dollar)*

2. Generate the rate, find the unit rate, and compare the rates to find the slower rate.

> **Say:** *Consider the following situation: Virginia and Luke each went on road trips for summer vacation. Virginia found that she could travel 195 miles in 3 hours. Luke could travel 248 miles in 4 hours. Who traveled at a slower rate?*

Use the Slower Rate A **DM** display master as needed.

> **Say:** *In this situation, we need to compare rates to see who traveled more slowly.*

Use the Slower Rate B **DM** display master as needed. Fill in the rates with students.

> **Say:** *First, we need to find the rates of miles traveled to time passed for Virginia and Luke. We know Virginia traveled 195 miles in 3 hours, and Luke traveled 248 miles in 4 hours.*

Use the Slower Rate C **DM** display master as needed. Fill in the first unit rate with students.

> **Say:** *Next, we need to find the unit rate for Virgina and Luke to find the slower rate. The rate we generated for Virginia was $\dfrac{195\ miles}{3\ hours}$. What is the unit rate*

for Virginia? ($\frac{65 \text{ miles}}{1 \text{ hour}}$)

Allow students to fill in the second unit rate independently. Then, discuss how to find the unit rate.

> **Say:** *We follow the same process to find the unit rate for Luke. The rate we generated for Luke was $\frac{248 \text{ miles}}{4 \text{ hours}}$. What is the unit rate for Luke? ($\frac{62 \text{ miles}}{1 \text{ hour}}$)*

Use the Slower Rate D **DM** display master as needed. Review the steps for finding a unit rate if necessary. **1**

> **Say:** *Now, we need to compare the unit rates to find the slower rate. Virginia traveled at an average of 65 miles per hour, and Luke traveled at 62 miles per hour. Who was the slower traveler? (Luke) How do you know? (62 miles per hour is slower than 65 miles per hour)*

1 TEACHER NOTE
These numbers are larger, so allow students to use a calculator as needed.

Practice

For each practice activity, provide detailed feedback to students, highlighting what was done correctly and what needs improvement. Provide opportunities for students to correct their errors. Collect student work to review and monitor student progress.

Activity 1: Help students complete the activity on the Practice 1 handout.

Activity 2: Have students work in pairs to complete the activity on the Practice 2 handout.

Independent Practice

1. Have students work independently to complete the activity on the Independent Practice handout.

2. Go over the answers (students self-check and correct, using a colored pencil).

3. Have students record the number correct in the box and complete their How Am I Doing? graph.

4. Collect the papers to review and monitor student progress.

Closure

Review the key idea. Have students provide examples from the lesson.

Have students discuss their answer to the following questions:

● How can you figure out which store has the better price on an item you want to buy?

$2.11/oz $3.15/lb
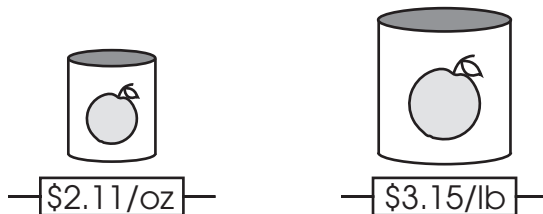
● What different things can you compare, using a unit rate?

Clear up any misconceptions. Students who are not confident with the process of using a unit rate to compare 2 scenarios need additional instruction.