

Identify Proportional Relationships: Tables

Conceptual Lesson

Grade 7 • Unit 3 • Lesson 5

MC: 7.RP.2ab▲

MPs

✓ Applied MP
* Embedded MP

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|
| * | | ✓ | | ✓ | | | * |

Problem of the Day

Objective: _____

Vocabulary

Equivalent Ratios: ratios, in fraction form, that are equivalent

Ratios 5:2 and 10:4 are equivalent

$$\text{because } \frac{5}{2} = \frac{10}{4}.$$

Proportional Relationship: is a relationship between two equal ratios

Apples are sold in bags of 5 for \$2. To buy 20 apples, what would be the cost (C)?

$$\frac{5 \text{ apples}}{2 \text{ dollars}} = \frac{20 \text{ apples}}{C(\text{cost})}$$

Multiply the numerator and denominator by 4.

$$\text{Cost} = \$8$$

| Apples | Cost |
|--------|------|
| 5 | 2 |
| 20 | 8 |

Notes

Testing for Equivalent Ratios:

1. Identify the form of the ratio.
2. Convert ratio pairs in the table to fractions (*use the first quantity as the denominator*).
3. Determine if the fractions are equivalent.
4. If equivalent, there is a proportional relationship.

Structured Guided Practice

(A/B Partners Practice)

Directions: Read and solve.

1. The amount of time it takes Phil to read a certain number of pages of his book each day is given in the table below. Find the ratio of number of pages read to the number of minutes spent reading each day.

| | Monday | Tuesday | Wednesday | Thursday |
|-----------------|--------|---------|-----------|----------|
| Minutes (x) | 10 | 15 | 35 | 25 |
| Pages (y) | 20 | 30 | 75 | 50 |
| $\frac{y}{x}$ | | | | |

2. Use the ratios you created in Problem #1 for the following task:

Compare the ratios and identify the ratios that have a proportional relationship. Justify your answer.

Final Check for Understanding

(Teacher Checks Work)

Directions: Read and solve.

1. The number of students in certain classes and the amount of money the class raised are in the table below. Find the ratios for money raised to the number of students.

| | Students (x) | Money Raised (y) |
|-----------------|------------------|----------------------|
| Room 100 | 30 | \$165 |
| Room 200 | 25 | \$125 |
| Room 300 | 24 | \$108 |
| Room 400 | 36 | \$198 |

2. Use the ratios you created in Problem #1 for the following task:

Compare the ratios and identify the ratios that have a proportional relationship. Justify your answer.

Closure

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Recap today's lesson with one or more of the following questions:

✓**MP3:** *How can you prove the ratios are equivalent?*

✓**MP5:** *What can see about ratios by using a table?*