

Lesson 11: Comparing Ratios Using Ratio Tables

Classwork

Example 1

Create four equivalent ratios (2 by scaling up and 2 by scaling down) using the ratio 30 to 80.

Write a ratio to describe the relationship shown in the table.

Hours	Number of Pizzas Sold
2	16
5	40
6	48
10	80

Exercise 1

The following tables show how many words each person can text in a given amount of time. Compare the rates of texting for each person using the ratio table.

Michaela

Minutes	3	5	7	9
Words	150	250	350	450

Jenna

Minutes	2	4	6	8
Words	90	180	270	360

Maria

Minutes	3	6	9	12
Words	120	240	360	480

Complete the table so that it shows Max has a texting rate of 55 words per minute.

Max

Minutes				
Words				

Exercise 2: Making Juice (Comparing Juice to Water)

- a. The tables below show the comparison of the amount of water to the amount of juice concentrate (JC) in grape juice made by three different people. Whose juice has the greatest water-to-juice concentrate ratio, and whose juice would taste strongest? Be sure to justify your answer.

Laredo's Juice		
Water	JC	Total
12	4	16
15	5	20
21	7	28
45	15	60

Franca's Juice		
Water	JC	Total
10	2	12
15	3	18
25	5	30
40	8	48

Milton's Juice		
Water	JC	Total
8	2	10
16	4	20
24	6	30
40	10	50

Put the juices in order from the juice containing the most water to the juice containing the least water.

Explain how you used the values in the table to determine the order.

What ratio was used to create each table?

Laredo: _____

Franca: _____

Milton: _____

Explain how the ratio could help you compare the juices.

- b. The next day, each of the three people made juice again, but this time they were making apple juice. Whose juice has the greatest water-to-juice concentrate ratio, and whose juice would taste the strongest? Be sure to justify your answer.

Laredo's Juice		
Water	JC	Total
12	2	14
18	3	21
30	5	35
42	7	49

Franca's Juice		
Water	JC	Total
15	6	21
20	8	28
35	14	49
50	20	70

Milton's Juice		
Water	JC	Total
16	6	22
24	9	33
40	15	55
64	24	88

Put the juices in order from the strongest apple taste to the weakest apple taste.

Explain how you used the values in the table to determine the order.

What ratio was used to create each table?

Laredo: _____

Franca: _____

Milton: _____

Explain how the ratio could help you compare the juices.

How was this problem different than the grape juice questions in part (a)?

- c. Max and Sheila are making orange juice. Max has mixed 15 cups of water with 4 cups of juice concentrate. Sheila has made her juice by mixing 8 cups water with 3 cups of juice concentrate. Compare the ratios of juice concentrate to water using ratio tables. State which beverage has a higher juice concentrate-to-water ratio.
- d. Victor is making recipes for smoothies. His first recipe calls for 2 cups of strawberries and 7 cups of other ingredients. His second recipe says that 3 cups of strawberries are combined with 9 cups of other ingredients. Which smoothie recipe has more strawberries compared to other ingredients? Use ratio tables to justify your answer.

Lesson Summary

Ratio tables can be used to compare two ratios.

Look for equal amounts in a row or column to compare the second amount associated with it.

3	6	12	30	10	25	30	45
7	14	28	70	16	40	48	72

You can also extend the values of the tables in order to get comparable amounts. Another method would be to compare the values of the ratios. Write the values of the ratios as fractions and then use your knowledge of fractions to compare the ratios.

When ratios are given in words, students can create a table of equivalent ratios in order to compare the ratios.

12: 35 compared to 8: 20

Quantity 1	12	24	36	48	Quantity 1	8	56
Quantity 2	35	70	105	140	Quantity 2	20	140

Problem Set

1. Sarah and Eva were swimming.
 - a. Use the ratio tables below to determine who the faster swimmer is.

Sarah

Time (min)	3	5	12	17
Distance (meters)	75	125	300	425

Eva

Time (min)	2	7	10	20
Distance (meters)	52	182	260	520

- b. Explain the method that you used to determine your answer.
2. A 120 lb. person would weigh about 20 lb. on the earth’s moon. A 150 lb. person would weigh 28 lb. on Io, a moon of Jupiter. Use ratio tables to determine which moon would make a person weigh the most.