

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. (Various Answers)

Scaling down: 3:8, 6:16, 9:24, 12:32, 15:40, 18:48, 21:56, 24:64 & 27:72

Scaling up: 60:160, 90:240, 120:320 etc.

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

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

The ratio used to create the table is 1:8, which means that there are 8 pizzas being sold every hour.

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

$$\frac{150}{3} = 50$$

Jenna

Minutes	2	4	6	8
Words	90	180	270	360

$$2 \frac{90}{2} = 45$$

$$\frac{90}{2} = 45$$

Maria

Minutes	3	6	9	12
Words	120	240	360	480

$$\frac{120}{3} = 40$$

Michaela types the fastest because she texts 50 words per minute, next to Jenna who texts 45 wpm, & last is Maria who texts 40 wpm.

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

Max

Minutes	1	2	3	4
Words	55	110	165	220

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

L: $\frac{15}{5} = \frac{3}{1}$
 F: $\frac{15}{3} = \frac{5}{1}$
 $\frac{40}{8} = \frac{5}{1}$
 M: $\frac{40}{10} = \frac{4}{1}$

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

Franca Milton Laredo

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

Laredo makes his juice by combining three cups of water for every 1 cup of juice concentrate.
 Franca makes her juice by combining five cups of water for every 1 cup of juice concentrate.
 Milton makes his juice by combining four cups of water for every 1 cup of juice concentrate.

What ratio was used to create each table?

Laredo: 3:1

Franca: 5:1

Milton: 4:1

Explain how the ratio could help you compare the juices. (Answers will vary)

- 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.

L: $\frac{12}{2} = \frac{6}{1}$
 F: $\frac{15}{6} \div 3 = \frac{5}{2}$
 M: $\frac{16}{6} \div 2 = \frac{8}{3}$
 Discuss why this is lose!

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.

Franca Milton Laredo

Explain how you used the values in the table to determine the order. (Answers will vary)

What ratio was used to create each table?

Laredo: 6:1

Franca: 5:2

Milton: 8:3

Explain how the ratio could help you compare the juices. (Answers will vary)

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

- 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.

Max:

JC	4	8	12
Water	15	30	45

Sheila:

JC	3	6	9
Water	8	16	24

- 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.

Victor Recipe 1:

Strawb.	2	4	6
Other ing.	7	14	21

Recipe 2

Strawb.	3	6	9
Other ing.	9	18	27

Recipe 2 has more strawberries compared to the other ingredients. When comparing 6 cups of strawberries, there were fewer other ingredients added in recipe 2 than in recipe 1.