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UNIT 4 LESSON 8

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| AIM: | SWBAT solve ratio problems with double number line diagrams |

**THINK ABOUT IT!**

The number of sugary beverages Americans consume is a leading health concern. For a given brand of cola, a 6-fluid ounce serving of cola contains about 20 grams of sugar. How many grams of sugar are in 24 fluid ounces of Cola?

Michael created the model below called a Double Number Line diagram to figure out the number of grams of sugar in 24 fluid ounces of Cola. Does the model accurately model the problem? Why?

Cola (fl. oz.)

Sugar (g)

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Could you use a tape diagram to model this problem? Why?

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Key Point

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| A double \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ shows equivalent ratios with different \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  |

**Interaction with New Material**

**Ex. 1)** A bodega on Fulton street keeps track of its sales each month to inform how to stock their shelves the following month. In September, they sold 3 bottles of Pepsi for every 4 bags of potato chips. In October, they sold 4 bottles of Pepsi for every 5 bags of potato chips. If they sold 24 bottles of Pepsi each month, during which month did they sell more bags of potato chips?

**PARTNER PRACTICE**

* CFS for top quality work
	+ Problem is annotated with margin notes to provide additional meaning
	+ Double number line diagram is drawn accurately and are clearly labeled
	+ Calculations are shown
	+ Answer statement is written

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| *Bachelor Level* |

1. For every 2 minutes Kevin drove, he traveled 5 miles. At this speed, how long would it take him to drive 15 miles? **Use a double number line diagram to model the problem**.

Answer \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| *Master Level* |

1. An apple orchard in Upstate New York grows a variety of apples. They have 15 rows of gala apples for every 10 rows dedicated to pumpkins. If they have 180 rows of Gala apple trees how many rows are for pumpkins?
2. 270
3. 175
4. 120
5. 12

**INDEPENDENT PRACTICE**

* CFS for top quality work
	+ Problem is annotated with margin notes to provide additional meaning
	+ Double number line diagram is drawn accurately and are clearly labeled
	+ Calculations are shown
	+ Answer statement is written

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| *Bachelor Level* |

1. Ms. Giglio sets up 2 music stands for every 3 band members in her class. If her class has 36 band members, how many music stands are set up in her music room? Solve using a double number line.
2. 12 music stands
3. 6 music stands
4. 24 music stands
5. 36 music stands
6. Jesse created a double number line diagram with three 3 ratios that are equivalent to 4:5. Which of the following could not be a ratio on his double number line? Select all that apply.
	1. 20 to 25
	2. $\frac{1}{4}$
	3. 28:35
	4. 2 : 2.5
	5. $\frac{12}{15}$
7. Kamani can run 2 laps around the track in 5 minutes.
	1. How many laps can she run in 35 minutes?
	2. If she runs 28 laps every day, how many minutes does she run each day?

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| *Master Level* |

1. Ms. Leaman spends $7.00 every five days on her morning coffee. How much does she spend in one year? There are 365 days in a year.
2. Michelle can run across a field twice in 30 seconds. How many times will she have run across the field in 3 **minutes**?
	1. 6
	2. 12
	3. 20
	4. 60
3. Ms. Brown is reading 2 books every 3.5 weeks. She has been reading for 38.5 weeks. How many books has she read?
4. Martha has is planting a flower garden. She has planted 5 daisies for every 7 tulips. She has planted a total of 37 flowers. How many tulips are planted in the garden?
5. Myles can make 3 jump shots out of every 5 attempted. Ashley can make 5 jump shots out of every 7 attempted. They both took 35 jump shots. Who made more?
6. An architect used a model of the Empire State building before constructing the actual building. The model has a ratio of height to base of 15 feet for every 3 feet. If the actual building is 1,200 feet tall, how wide is the base?



1. There are 6 mushrooms for every 8 olives on a pizza made at Dominoes. On three pizzas there are a total of 56 vegetables on the pizzas. How many olives are on the pizzas?

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| *PhD Level* |

1. A bakery sells 8 muffins for every 6 bread rolls.
	1. How many muffins does the bakery sell for every 15 bread rolls?
	2. How many bread rolls does the bakery sell for every 36 muffins?
	3. How many bread rolls does the bakery sell for every 1 muffin?
	4. How many bread rolls does the bakery sell for every 17 muffins?
	5. How many muffins does the bakery sell for every 19 bread rolls?

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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	+ Double number line diagram is drawn accurately and are clearly labeled
	+ Calculations are shown
	+ Answer statement is written

**Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**EXIT TICKET**

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| Self-assessment | I mastered the learning objective today. | I am almost there.  | Need more practice and feedback. |
| Teacher feedback | You mastered the learning objective today. | You are almost there.  | You need more practice and feedback. |

1. Kyra is participating in a fundraiser walk-a-thon. She walks 2 miles in 30 minutes. If she continues to walk at the same rate, determine how many minutes it will take her to walk 12 miles? Use a double number line diagram to support your answer.
2. While shopping, Kyla found a dress that she would like to purchase, but it costs $49.50 more than she has. Kyla charges $5.50 an hour for babysitting. She wants to figure out how many hours she must babysit to earn $49.50 to buy the dress. Use a double number line to support your answer.