Agenda:

1) Bell Ringer: p. 9

2) Go over homework

3) Unit 1: Lesson 3: Proportional Relationships in tables

EQ: How do you know if two quantities are proportional by looking at a table?

4) Homework: lesson 3 problems 1-9

5) Project: Unit Price- Due 9/30

6) Exit Ticket

Sep 7-12:49 PM

"Unit Price Project"

Name: _____ date: _____
Mrs. Bennett Math 7

Student Task Sheet

In the ratios and proportions unit we have been studying, you have learned to find unit rates and unit prices. You have also learned to compare unit prices.

In this assignment I am asking you to calculate the unit price of 10 different household items. Display your items on a poster. Next to each item you should include your calculations to find each unit price. Your poster should include a title as well. To go along with your poster you must write a paragraph detailing your findings? Some things you may want to include in your paragraph are which item had the lowest unit price and which item had the highest unit price. You could also compare different brands of the same item. For example, maybe Tide detergent is less expensive per ounce than All detergent. You may want to write about the usefulness of comparing unit prices.

You will be graded on:

Completion:

- Poster with title and 10 objects
- Calculations are included for each item
- Paragraph summarizing findings

Mathematical Concepts:

- Proportions showing all calculations
- Correct mathematical work
- Paragraph correctly compares items

Presentation:

- Title
- Labels
- Proportions are shown
- Paragraph has no spelling or grammatical errors

Timeliness:

- Poster is due 2 weeks from today
- Due date __/ ___/ ___

Sep 6-8:05 AM

Lesson Summary:

Measures in one quantity **are proportional to** measures of a second quantity if there is a positive number k so that for every measure x of the first quantity, the corresponding quantity y is given by kx. The equation $y = kx$ models this relationship.

A **proportional relationship** is one in which the measures of one quantity are proportional to the measures of the second quantity.

In the example given below, the distance *is proportional to* time since each measure of distance, y, can be calculated by multiplying each corresponding time, t, by the same value, 10. This table illustrates a *proportional relationship* between time, t, and distance, y.

Time (hrs), t	0	1	2	3
Distance (km), y	0	10	20	30

Sep 9-8:18 AM

Homework

1. A cran-apple juice blend is mixed in a ratio of cranberry to apple of 3 to 5.
   a. Complete the table to show different amounts that are proportional.

Amount of Cranberry			
Amount of Apple			

   b. Why are these quantities proportional?

2. John is filling a bathtub that is 18 inches deep. He notices that it takes two minutes to fill the tub with three inches of water. He estimates it will take ten more minutes for the water to reach the top of the tub if it continues at the same rate. Is he correct? Explain.

inches per minute
3 ÷ 2 = 1.5 in/min
6 ÷ 4 =
9 ÷ 6 =

min	in
2	3
4	6
6	9
8	12
10	15
12	18

+10

Essential Question:

How do you know if two quantities are proportional by looking at a table?

Sep 9-8:21 AM

Lesson 3: Identifying Proportional and Non-Proportional Relationships in Tables

Sep 9-8:22 AM

Classwork

You have been hired by your neighbors to babysit their children on Friday night. You are paid $8 per hour. Complete the table relating your pay to the number of hours you worked.

Hours Worked	Pay
1	8
2	16
3	24
4	32
4 ½	36
5	40
6	48
6.5	

Based on the table above, is pay proportional to hours worked? How do you know?

yes - because pay divided hours always came out to 8

Sep 9-8:22 AM

Examples 1–4

For Examples 1–3, determine if y is proportional to x. Justify your answer.

1. The table below represents the amount of snow fall in 5 counties (in inches) to hours of a recent winter storm.

x Time (hrs)	y Snowfall (In)
2	10
6	12
8	16
2.5	5
7	14

$10 \div 2 = 5$
$12 \div 6 = 2$

not proportional

2. The table below shows the relationship between cost of renting a movie to the number of days on rent.

x y

x Number of Days	y Cost
6	2
9	3
24	8
3	1

Cost ÷ day

$2 \div 6 = .3\overline{3}$

$3 \div 9 = .3\overline{3}$

$8 \div 24 = .3\overline{3}$

$1 \div 3 = .3\overline{3}$

Proportional – Constant Rate

3. The table below shows the relationship between the amount of candy (pounds) bought and the total cost.

x Pounds	y Cost
5	10
4	8
6	12
8	16
10	20

$10 \div 5 = 2$
$8 \div 4 = 2$
$12 \div 6 = 2$

yes → equivalent Ratios
→ constant Rate

Sep 9-8:22 AM

4. Randy is planning to drive from New Jersey to Florida. Randy recorded the distance traveled and the total number of gallons used every time he stopped for gas.

Assume miles driven is proportional to Gallons Consumed in order to complete the table.

Gallons Consumed	2	4 ×27	7	8	10 ×27	12 ×27
Miles Driven	54	108	189 ÷27	216	270	324

54 ÷ 2 = 27

216 ÷ 8 = 27

Lesson Summary:

One quantity is proportional to a second if a constant (number) exists such that each measure in the first quantity multiplied by this constant gives the corresponding measure in the second quantity.

Steps to determine if two quantities in a table are proportional to each other:

1. For each given measure of Quantity A and Quantity B, find the value of $\frac{B}{A}$.

$y \div x = \text{const.}$

2. If the value of $\frac{B}{A}$ is the same for each pair of numbers, then the quantities are proportional to each other.

Sep 9-8:23 AM

Problem Set

In each table determine if y is proportional to x. Explain why or why not.

1.

x	y
3	12
5	20
2	8
8	32

2.

x	y
3	15
4	17
5	19
6	21

3.

x	y
6	4
9	6
12	8
3	2

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4. Kayla made observations about the selling price of a new brand of coffee that sold in three different sized bags. She recorded those observations in the following table:

Ounces of Coffee	6	8	16
Price in Dollars	$2.10	$2.80	$5.60

Is the price proportional to the amount of coffee? Why or why not?

Use the relationship to predict the cost of a 20 oz. bag of coffee?

5. You and your friends go to the movies. The cost of admission is $9.50 per person. Create a table showing the relationship between number of people going to the movies and the total cost of admission.

Explain why the cost of admission is proportional to the amount of people.

6. For every 5 pages Gil can read, his daughter can read 3 pages. Let g equal the number of pages Gil reads and let d equal the number of pages his daughter reads. Create a table showing the relationship between the number of pages Gil reads and the number of pages his daughter reads.

   Is the number of pages Gil's daughter reads proportional to the number of pages he reads? Explain why or why not.

7. The table shows the relationship between the number of parents in a household and the number of children in the same household. Is the number of children proportional to the number of parents in the household? Explain why or why not.

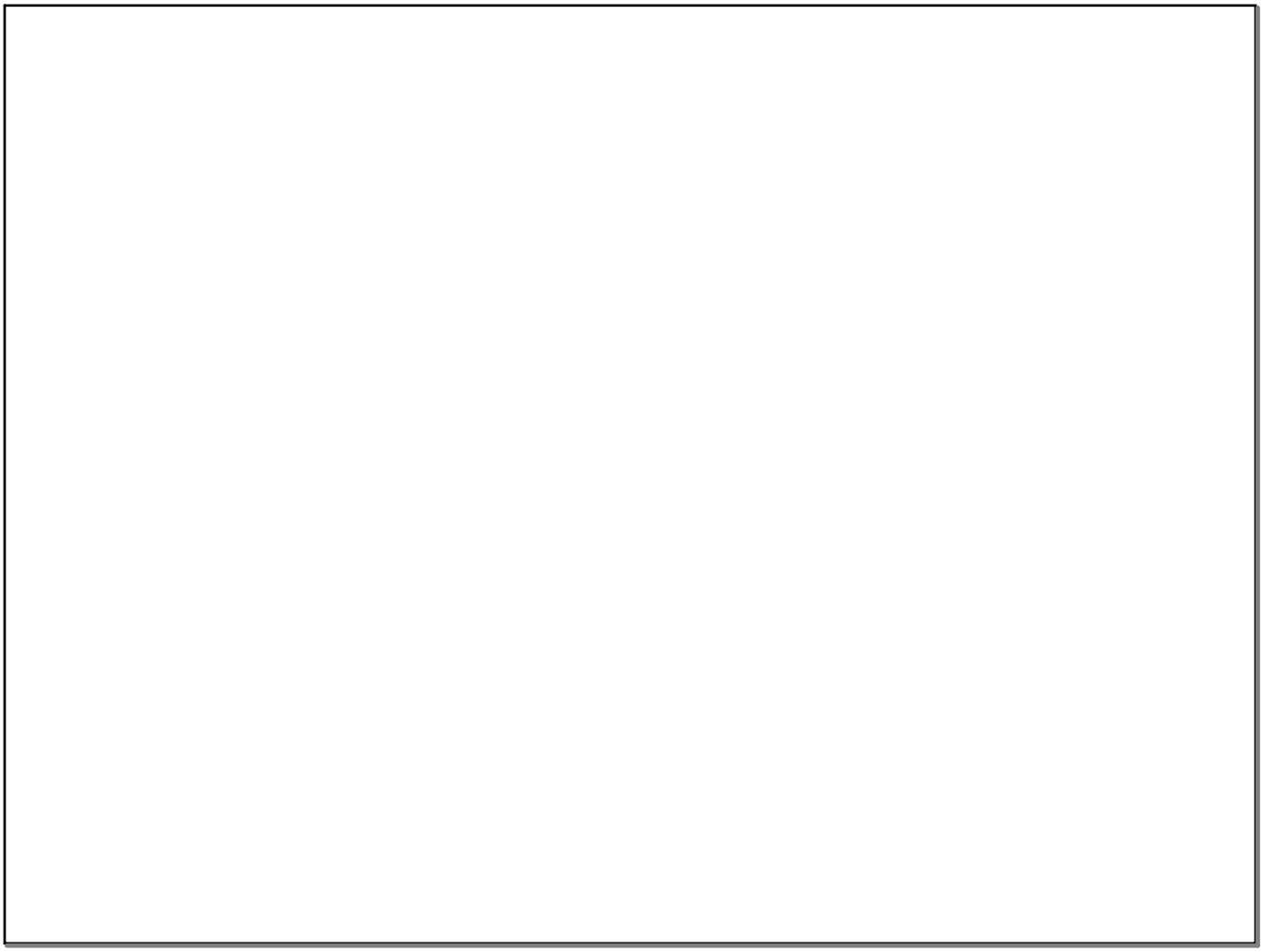
Number of Parents	Number of Children
0	0
1	3
1	5
2	4
2	1

Sep 9-8:23 AM

8. The table below shows the relationship between the number of cars sold and money earned for a car salesperson. Is the money earned proportional to the number of cars sold? Explain why or why not.

Number of Cars Sold	Money Earned
1	250
2	600
3	950
4	1076
5	1555

9. Make your own example of a relationship between two quantities that are NOT proportional. Describe the situation and create a table to model it. Explain why one quantity is not proportional to the other.



Sep 14-8:35 AM