WINTER BREAK LEARNING PACKET

MATH

7TH GRADE STUDENT

DEC 22ND – JAN 5TH

DEPARTMENT OF CURRICULUM & INSTRUCTION

Memphis-Shelby County Schools offers educational and employment opportunities without regard to race, color, religion, sex, creed, age, disability, national origin, or genetic information.

Hello MSCS Family,

This resource packet was designed to provide students with activities that can be completed at home independently or with the guidance and supervision of family members or other adults. The activities are aligned with the TN Academic Standards for Mathematics and will provide additional practice opportunities for students to develop and demonstrate their knowledge and understanding.

A suggested pacing guide is included; however, students can complete the activities in any order over the course of several days. Below is a table of contents which lists each activity.

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Proportion Tic Tac Toe	3	Week 1
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Week 1: Proportion Tic Tac Toe	
Grade Level Standard(s)	**7.RP.A.2** Recognize and represent proportional relationships between quantities. **c.** Use the concept of equality to represent proportional relationships with equations. For example, if total cost *t* is proportional to the number *n* of items purchased at a constant price *p*, the relationship between the total cost and the number of items can be expressed as: $t = pn$.
Caregiver Support Option	The student may use a sibling or a guardian as a partner. For additional support, have the student access the video links below by logging into iReady from their Clever account. Video
Materials Needed	Proportion Cards, Tic Tac Toe Boards, Counters (9 per player)
Question(s) to Explore	What is the constant of proportionality in each proportional relationship? How does the constant of proportionality relate to unit rate?

Name:

Proportion Tic Tac Toe

What You Need

- Proportion Cards
- Tic Tac Toe Boards
- counters, 9 per player

What You Do

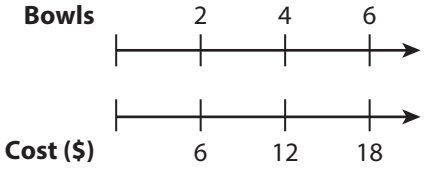
KEEP IN MIND . . .
The constant of proportionality is the unit rate in a proportional relationship.

1. Shuffle the **Proportion Cards** and place them in a pile facedown.
2. Distribute one **Tic Tac Toe Board** to each player.
3. Select the top **Proportion Card** and work together to determine the constant of proportionality.
4. If this value is on any player's **Tic Tac Toe Board**, the player places a counter in that square.
5. The winner is the first player to get three counters in a row—vertically, horizontally, or diagonally.

Check Understanding

Do the table and double number line show the same constant of proportionality? Explain.

Bowls	3	5	7	9
Cost ($)	9	15	21	27



Go Further

A proportional relationship has a unit rate of 6. Describe a real-life scenario that might have this unit rate. Then complete the table. Write the units in the first column.

	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$
		6			

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Name:

Proportion Tic Tac Toe

TIC TAC TOE BOARDS

8	$\frac{1}{8}$	38
0.90	5.2	14
12	250	4.50

2.50	1.50	$\frac{1}{3}$
$\frac{2}{3}$	0.6	8
$\frac{1}{8}$	14	18

$\frac{1}{3}$	0.6	18
8	38	14
2.50	$\frac{2}{3}$	1.50

12	0.90	4.50
5.2	250	$\frac{1}{3}$
2.50	18	1.50

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Hours Worked	10	15	20	25
Earnings ($)	140	210	280	350

What is the constant of proportionality for earnings per hour?

Gallons of Gas	4	8	12	16
Cost ($)	10	20	30	40

What is the constant of proportionality for cost per gallon of gas?

Minutes	5	6	7	8
Words Read	1,250	1,500	1,750	2,000

What is the constant of proportionality for words read per minute?

Yards of Fabric	2	4	6	8
Cost ($)	9	18	27	36

What is the constant of proportionality for cost per yard of fabric?

Hours	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Acres Mowed	$\frac{1}{2}$	$\frac{2}{3}$	$\frac{5}{6}$	1

What is the constant of proportionality for acres mowed per hour?

Bags of Mulch	5	6	7	8
Area Covered (sq. ft)	90	108	126	144

What is the constant of proportionality for area covered per bag of mulch?

Pounds of Shrimp	2	3	4	5
Cost ($)	24	36	48	60

What is the constant of proportionality for cost per pound of shrimp?

Minutes	25	30	35	40
Laps Swam	15	18	21	24

What is the constant of proportionality for laps swam per minute?

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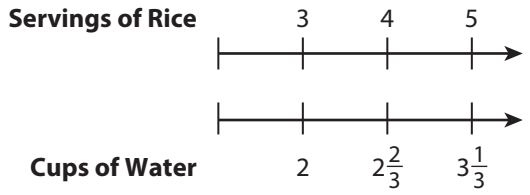
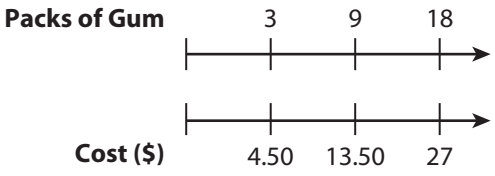
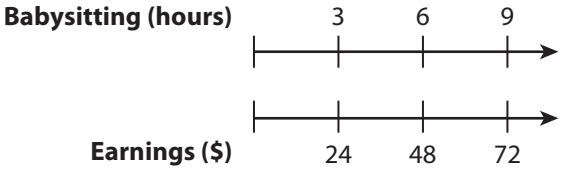


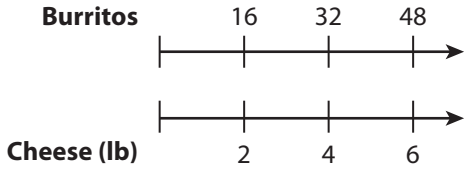
What is the constant of proportionality for cups of water per serving of rice?



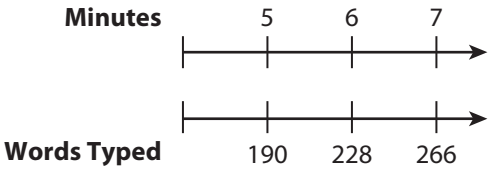
What is the constant of proportionality for cost per pack of gum?



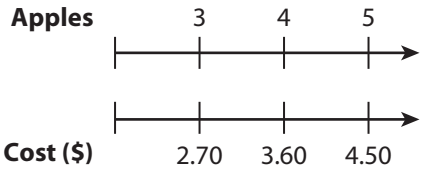
What is the constant of proportionality for earnings per hour of babysitting?



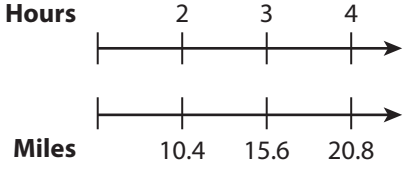
What is the constant of proportionality for pounds of cheese per burrito?



What is the constant of proportionality for words typed per minute?



What is the constant of proportionality for cost per apple?



What is the constant of proportionality for miles per hour?

Week 2: Recipe Scramble	
Grade Level Standard(s)	**7.RP.A.3** Use proportional relationships to solve multi-step ratio and percent problems. Examples: batting averages, recipes, simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error, etc.
Caregiver Support Option	The student may use a sibling or a guardian as a partner. For additional support, have the student access the video link below by logging into iReady from their Clever account. Video
Materials Needed	Recipe Card, Recording Sheet, Measurement Tiles
Question(s) to Explore	How can I use proportional reasoning to make different amounts?

Names:

Recipe Scramble

What You Need

- Recipe Card
- Recording Sheet
- Measurement Tiles

What You Do

KEEP IN MIND . . .
Once you identify the constant of proportionality in a problem, you can create a double number line, an equation, or a table to solve the problem.

1. Place all the **Measurement Tiles** faceup on the table.
2. Read the recipe on the **Recipe Card**.
3. Work as a group to use proportional reasoning to adjust the recipe for making the different total amounts shown on the **Recording Sheet**.
4. Place **Measurement Tiles** in the correct places on the table to show the adjusted ingredient amounts. Not all tiles will be used.
5. The letters on the unused tiles can be unscrambled to spell a word. Work together to determine the word and record it on the bottom of the **Recording Sheet**.

Check Understanding

Diego reads 40 pages of a book in 50 minutes. If he reads at the same constant rate, how many pages will he be able to read in 80 minutes?

Go Further

Add an ingredient and its amount to the recipe. Then, switch with a partner and adjust how much of the new ingredient is needed for the different total amounts used in the activity.

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Names:

Recipe Scramble

RECIPE CARD

Party Mix Recipe

- 8 c corn or rice cereal
- 3 c pretzel sticks
- 1 c peanuts
- $\frac{1}{4}$ c butter, melted
- 2 tbsp grated Parmesan cheese
- $\frac{1}{2}$ tsp salt

Makes 3 quarts.

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Names: _____

Recipe Scramble

RECORDING SHEET

Ingredient	Amount Needed to Make $1\frac{1}{2}$ Quarts	Amount Needed to Make 2 Quarts	Amount Needed to Make 4 Quarts
Cereal			
Pretzel Sticks			
Peanuts			
Butter			
Parmesan Cheese			
Salt			

The unscrambled word is _____.

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E $\frac{1}{2}$ c	M $\frac{1}{8}$ c	N $1\frac{1}{3}$ tbsp	T $\frac{1}{6}$ tsp
T $\frac{1}{3}$ c	N 2 c	R $\frac{1}{4}$ tsp	A $5\frac{2}{3}$ c
U $1\frac{1}{2}$ c	A $10\frac{2}{3}$ c	C $1\frac{3}{4}$ tsp	B $1\frac{2}{3}$ tbsp
F 4 c	S 1 tbsp	P $\frac{2}{3}$ c	A $2\frac{2}{3}$ tbsp
B 4 c	L $\frac{1}{6}$ c	R $\frac{1}{3}$ tbsp	E $1\frac{1}{2}$ tsp
E 3 c	D $5\frac{1}{3}$ c	F $1\frac{1}{3}$ c	E 3 tbsp
D $\frac{1}{3}$ tsp	L $\frac{1}{4}$ c	I $\frac{2}{3}$ tsp	

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Answer Key

Proportion Tic Tac Toe

Check Understanding

Yes; Possible explanation: In both models, the cost in dollars is always 3 times the number of bowls. So, both models show same constant of proportionality, 3.

ACTIVITY ANSWERS

Tables:

Earnings per hour: 14

Cost per gallon of gas: 2.50

Words read per minute: 250

Cost per yard of fabric: 4.50

Acres mowed per hour: $\frac{1}{3}$

Area covered per bag of mulch: 18

Cost per pound of shrimp: 12

Laps swam per minute: 0.6

Double Number Lines:

Cups of water per serving of rice: $\frac{2}{3}$

Cost per pack of gum: 1.50

Earnings per hour of babysitting: 8

Pounds of cheese per burrito: $\frac{1}{8}$

Words typed per minute: 38

Cost per apple: 0.90

Miles per hour: 5.2

Recipe Scramble

Check Understanding

64 pages

RECORDING SHEET

Each row of the table should have three tiles in the following order:

Cereal: 4 c (B or F); $5\frac{1}{3}$ c (D); $10\frac{2}{3}$ c (A)

Pretzel Sticks: $1\frac{1}{2}$ c (U); 2 c (N); 4 c (B or F)

Peanuts: $\frac{1}{2}$ c (E); $\frac{2}{3}$ c (P); $1\frac{1}{3}$ c (F)

Butter: $\frac{1}{8}$ c (M); $\frac{1}{6}$ c (L); $\frac{1}{3}$ c (T)

Parmesan Cheese: 1 tbsp (S); $1\frac{1}{3}$ tbsp (N); $2\frac{2}{3}$ tbsp (A)

Salt: $\frac{1}{4}$ tsp (R); $\frac{1}{3}$ tsp (D); $\frac{2}{3}$ tsp (I)

The remaining nine tiles spell CELEBRATE.