Brandon Valley School District

District Learning Plan

March 30 - April 3, 2020

Grade 6 Math

Brandon Valley School District Distance Learning Plan

LESSON/UNIT: Ratios/Proportions **SUBJECT/GRADE: 6th Grade Math** **DATES: March 30 - April 3, 2020**

What do students need to do? **PART ONE link to BV instructional video for week of March 30 - April 3, 2020** **PART TWO link to BV instructional video for week of March 30 - April 3, 2020**	Monday (3/30): ● Students will review concepts involving rate by completing the **Rates Worksheet.** Examples are provided on the worksheet. Tuesday (3/31): ● Students will review converting fractions, decimals and percents by completing the **Fractions, Decimals and Percents Worksheet.** Examples/notes are provided on the worksheet. Wednesday (4/01): ● Students will review concepts involving percents by completing the **Percent Problems Worksheet.** Examples are provided on the worksheet. Thursday (4/02): ● Students will review fraction, decimal and percent concepts by completing the performance task "**Shooting Stars**" **Part A and B on p 167.** Students can access this assignment on the eBook at my.mheducation.com. If you do not have access to your online textbook, please contact your teacher. Friday (4/03): ● Students will review fraction, decimal and percent concepts by completing the performance task "**Shooting Stars**" **Part C on p 167.** Students can access the assignment on the eBook at my.mheducation.com. If you do not have access to your online textbook, please contact your teacher.
What do students need to bring back to school?	● Rates Worksheet ● Fractions, Decimals and Percents Worksheet ● Percent Problems Worksheet ● "Shooting Stars" performance task (p 167) ● math textbook ● countdown packet (if applicable)
What standards do the lessons cover?	6.RP.A. Understand ratio concepts and use ratio reasoning to solve problems. 3. Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. a. Make tables of equivalent ratios relating quantities with whole number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios. b. Solve unit rate problems including those involving unit pricing and constant speed. For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?

	c. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent. d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities
What materials do students need? What extra resources can students use?	Need: ● math textbook (online book is available at https://my.mheducation.com/) ● worksheets (see PDF documents below) Extra: ● Multiplication Table ○ https://www.mathsisfun.com/tables.html
What can students do if they finish early?	ALEKS topics- https://my.mheducation.com/ *Continue working your topics *QuickTables (math fact practice) *assignments (if your teacher has assigned them) Khan Academy- https://www.khanacademy.org/math
Who can we contact if we have questions?	**Brandon Valley Intermediate School** **Principal**- Mr. Skibsted- Nick.Skibsted@k12.sd.us **Assistant Principal**- Mr. Pearson- Rick.Pearson@k12.sd.us **Math Teachers:** Ms. VanRoekel: Rebecca.VanRoekel@k12.sd.us (blue team) Ms. Lewis: Layne.Lewis@k12.sd.us (white team) Ms. Wiese: Stacey.Wiese@k12.sd.us (red team) Mr. Kocer: Cassius.Kocer@k12.sd.us (silver team)
Notes: Worksheets do not have to be printed off. Problems can be answered on blank or lined paper. The math textbook can also be accessed online at https://my.mheducation.com/login.	

Instructional materials are posted below (if applicable)

Brandon Valley School District

Finding Unit Rate

A **rate** is a ratio comparing two quantities of different kinds of units.

A **unit rate** has a denominator of 1 unit when the rate is written as a fraction. To write a rate as a unit rate, divide the numerator and the denominator of the rate by the denominator.

Example.

A. 120 miles in 6 hours

$$\frac{120 \text{ miles}}{6 \text{ hours}} \begin{matrix} \div 6 \\ \div 6 \end{matrix} = \frac{20 \text{ miles}}{1 \text{ hour}}$$

↖ divide by the denominator

B. On a test, Matilda answered (12) (part) out of the first (15) (whole) problems correctly. If this rate continues, how many of the next (25) (whole) problems will she answer correctly?

$$\frac{\text{part}}{\text{whole}} = \frac{12}{15} = \frac{?}{25}$$

The new rate is out of 25.

There is no whole number times 15 that equals 25. Therefore, the original rate, $\frac{12}{15}$, must be simplified.

$$\frac{12}{15} \begin{matrix} \div 3 \\ \div 3 \end{matrix} = \frac{4}{5}$$

$$\frac{4}{5} \overset{\times 5}{\underset{\times 5}{=}} \frac{20}{25}$$

Matilda must answer 20 questions correctly.

Rates

Name _____

Write each rate as a unit rate.

1. 14 hours in 2 weeks

2. 36 pieces of candy for 6 children

3. 8 teaspoons for 4 cups

4. 8 tomatoes for $2

Solve.

5. PURCHASES One bottle of shampoo costs $6 for 8 ounces. A second bottle costs $4 for 5 ounces of shampoo. Which has the lower unit rate? How much lower?

6. FERTILIZER Ellie must mix 6 tablespoons of plant food for every 2 gallons of water. If she has 6 gallons of water, how much plant food should she use?

7. STRAWBERRIES At a local fruit stand, Luisa spends $3.96 for 2 pounds of strawberries. How much can she expect to pay for 4 pounds of strawberries?

8. SOCCER The Hawks soccer team won 12 out of 14 games. If this rate continues, how many games will they win if they play a total of 21 games?

9. VEGETABLES At a harvest, 16 ears of corn are being picked for every 18 peppers. If 9 peppers have been picked, how many ears of corn have been picked?

10. CONSTRUCTION At a road work site, 20 cones are placed along 50 feet of road. How many cones are placed along 35 feet of road?

Converting Fractions, Decimals and Percents

Fraction → Decimal

$\frac{1}{5}$

- Divide the numerator by the denominator

$$5\overline{)1.0}\quad 0.2,\ -10,\ 00$$

$\frac{1}{5} = 0.2$

Decimal → Fraction

0.3

- Remove the decimal
- rewrite as a fraction
- Remember place values!
  - Tenths = $\frac{}{10}$
  - Hundredths = $\frac{}{100}$
  - Thousandths = $\frac{}{1000}$

$\frac{3}{10}$

$0.3 = \frac{3}{10}$

Decimal → Percent

0.35

- Move the decimal 2 places to the right.
- Add a percent symbol

0.35

$0.35 = 35\%$

Percent → Decimal

75%

- remove the percent symbol
- move decimal 2 places to the left

75

$75\% = 0.75$

Percent → Fraction

65%

- Put the number over 100
- simplify

$\frac{65}{100}$, $\frac{65 \div 5}{100 \div 5}$

$\frac{13}{20}$

$65\% = \frac{13}{20}$

Fraction → Percent

$\frac{3}{20}$

- make the denominator 100 by multiplying
- the numerator is your percent
- add a percent symbol

$\frac{3 \times 5}{20 \times 5}$

$\frac{15}{100}$

15%

$\frac{3}{20} = 15\%$

Fraction, Decimal, and Percent Examples

Fill in the following table with the missing information.

	FRACTION	DECIMAL	PERCENT
A	$2\frac{1}{25}$	2.04	204 %
B	$\frac{3}{500}$	0.006	0.6 %

A. $2\frac{1}{25}$

To write a mixed number as a decimal, keep the whole number the same. Divide the numerator by denominator.

$2\frac{1}{25} = 2.04$

$$
\begin{array}{r}
0.04 \\
25\overline{)1.00} \\
-\ 0\downarrow \\
\hline
100 \\
-100 \\
\hline
0
\end{array}
$$

To write it as a percent, move the decimal 2 place to the right.

$2.04 \rightarrow = 204\%$

B. 0.006

To write the decimal as a percent, move the decimal two places to the right.

$$0.0\overset{\curvearrowright}{0}\overset{\curvearrowright}{6} = 0.6\%$$

To write the decimal as a fraction, it is helpful to read the decimal accurately using proper vocabulary.

0.006 → "six thousandths"

The value, six, is the numerator.

The place value stated, thousandths, is the denominator.

simplify.

$$\frac{6}{1000} \overset{\div 2}{\underset{\div 2}{=}} \frac{3}{500}$$

Fraction, Decimal, and Percent Worksheet **Name** _____

Fill in the following table with the missing information.

FRACTION	DECIMAL	PERCENT
$\frac{8}{25}$		
		8%
	.003	
$\frac{3}{4}$		
$\frac{7}{1000}$		
	.01	
		540%
	4.25	
$\frac{1}{20}$		

Percent Problems Notes

Percent of a Number

Change the percent to a decimal by moving the decimal two places to the left then multiply.

Example: 2.4% of 180

2.4% → 2.4 → 0.024

$$\begin{array}{r} {\scriptstyle 1\ \ 1} \\ 180 \\ \times\ 0.024 \\ \hline .720 \\ +\ 3600 \\ \hline 4.320 \end{array}$$

4.32

Percent Proportion

In a **percent proportion**, one ratio compares a part to the whole. The other ratio is the equivalent percent written as a fraction with a denominator of 100.

$$\left.\begin{array}{l} \text{part} \rightarrow \frac{p}{w} = \frac{n}{100} \\ \text{whole} \rightarrow \end{array}\right\} \text{percent}$$

Example: Gina's club requires that 60% of the members be present for any vote. If at least (30) (part) members must be present to have a vote, how many members does the club currently have?

$$\frac{30}{50} = \frac{60}{100}$$ (÷2 on 60, ÷2 on 100)

50 members

Example: At basketball practice, Josh made 60% of the (15) (whole) total shots he took. How many shots did he make?

$$\frac{\quad}{15} = \frac{60 \div 10}{100 \div 10}$$

simplify.

$$\frac{9}{15} = \frac{6}{10}$$ (×1.5 on 9, ×1.5 on 15)

OR

60% of 15

60% → 0.60

$$\begin{array}{r} {\scriptstyle 3\ 1\ 5} \\ \times\ 0.60 \\ \hline 9.00 \end{array} = 9$$

9 shots made

Percent Problems

Name _____

Find the percent of each number.

1. 28% of 70

2. 160% of 19

3. 1.4% of 85

4. BASKETBALL At basketball practice, team members record the number of shots they take and the number of times they score. Find the number of shots each team member made during a practice.

Student	Percent of Shots Made	Total Number of Shots
Awan	75%	28
Isi	60%	35
Wade	72%	25

5. SHOPPING Chen wants to buy a pair of pants that regularly costs $54. Today, the pants are on sale for 60% of the original price. How much will Chen have to pay for the pants?

6. **SPORTS** Sally's soccer team won 68% of the games they played. If they won 17 games, how many did they play?