

Week of 9/21-9/25 : 7th Grade Math

<p>Topic: Operations with Rational Numbers</p>	<p>Essential Question: How can prior knowledge of properties be used to demonstrate the addition, subtraction, multiplication, and division of rational numbers?</p>			
<p>Standards:</p> <ul style="list-style-type: none"> 7.NS.1 Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. 7.NS.2 Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. 7.NS.2 Solve real world and mathematical problems involving the four operations with rational numbers. 	<p>Students Will Be Able To</p> <ul style="list-style-type: none"> Apply their knowledge of the properties of addition and subtraction of whole numbers and integers to add and subtract rational numbers. Apply their knowledge of the properties of multiplication and division of whole numbers and integers to multiply and divide rational numbers. Solve real world problems with negative and positive rational numbers. 			
<p>Vocabulary:</p> <ul style="list-style-type: none"> Positive numbers, negative numbers, integers, additive inverse, rational numbers, product, quotient, credit, debit, account, withdraw, deposit, balance 	<p>Assessment:</p> <ul style="list-style-type: none"> Discussion questions Classwork practice with partners Project 			
<p>Monday: Review of Operations with Integers and Introduction to Operations with Rational Numbers</p> <ul style="list-style-type: none"> Do Now review problems Go over quiz 800lb Monster activity Shooting Star activity HW: Finish 800lb Monster activity and Shooting Star activity 	<p>Tuesday: Club Budget Project</p> <ul style="list-style-type: none"> Do Now review problems Go over HW Explain and begin "Club Budget" project HW: Double sided practice problem worksheet due Thursday (nothing due tomorrow) 	<p>Wednesday: Club Budget Project</p> <ul style="list-style-type: none"> Do Now review problems Finish "Club Budget" Projects Share and discuss "Club Budget" projects HW: Double sided practice problem worksheet due Tomorrow (the one given on Tuesday) 	<p>Thursday: Operations with positive and negative Rational Numbers (fractions and decimals)</p> <ul style="list-style-type: none"> Do Now review problems Go over HW Goldilocks activity Practice problems HW: Finish Goldilocks activity and practice problems 	<p>Friday: Operations with positive and negative Rational Numbers (fractions and decimals)</p> <ul style="list-style-type: none"> Do Now review problems Go over HW Maze Phrase activity HW: Have a good weekend!

What did the 800 lb MONSTER say to the 400 lb MONSTER??

TO DISCOVER THE WORDS OF THE 800 POUND MONSTER:

Do each exercise and find the answer at the bottom of the page. Shade in the letter above each correct answer. When you finish, the monster's words will remain!

1 $-\frac{2}{3} + -\frac{4}{5} =$

11 $(6) \left(1\frac{3}{10}\right) =$

2 $\frac{1}{2} - \frac{7}{10} =$

12 $-12 \div \frac{1}{3} =$

3 $\left(-\frac{6}{7}\right) \left(\frac{3}{8}\right) =$

13 $2\frac{3}{4} + 2\frac{5}{9} =$

4 $\frac{-9}{10} \div \frac{-6}{15} =$

14 $\frac{5}{8} - 5 =$

5 $1\frac{1}{4} + -3\frac{5}{6} =$

15 $\left(3\frac{5}{9}\right) \left(\frac{-9}{32}\right) =$

6 $-7\frac{3}{10} - -4\frac{4}{5} =$

16 $-3\frac{4}{7} \div -\frac{5}{8} =$

7 $\left(-1\frac{5}{9}\right) \left(-2\frac{1}{7}\right) =$

17 $8\frac{7}{10} + -4\frac{1}{4} =$

8 $5\frac{2}{3} \div -1\frac{2}{15} =$

18 $\left(-\frac{2}{3}\right) \left(1\frac{2}{5}\right) \left(-1\frac{5}{7}\right) =$

9 $-\frac{2}{3} + 6\frac{1}{8} =$

19 $4\frac{3}{11} \div \frac{47}{11} =$

10 $-3\frac{2}{5} - \frac{5}{6} =$

G	O	O	D	M	U	S	I	C	I	S	N	O	T	E	W	O	R	T	H	Y
-5	$-\frac{4\frac{7}{30}}$	$-\frac{1\frac{7}{15}}$	$\frac{5}{7}$	$\frac{7}{5}$	1	$\frac{9}{4\frac{20}}$	$\frac{-9}{28}$	$\frac{5\frac{11}{36}}$	$\frac{4\frac{11}{20}}$	$-2\frac{1}{2}$	$\frac{5\frac{11}{24}}$	-1	$\frac{2}{4}$	$\frac{13}{5}$	$3\frac{1}{11}$	$-\frac{1}{5}$	-36	$-\frac{4\frac{3}{8}}$	$3\frac{1}{3}$	$-\frac{2\frac{7}{12}}$

Why Is a Shooting Star Better Than a Hamburger?

For each set of exercises, there is one extra answer. Write the letter of this answer in the corresponding box at the right.

5	3	8	1	10	6	9	2	4	7
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1 Find the quotient.

- a. $-40 \div 5$ (J) -2
 b. $30 \div (-15)$ (S) -25
 c. $-88 \div (-11)$ (B) -8
 d. $-100 \div (-4)$ (Y) 25
 (P) 8

2 Find the quotient.

- a. $\frac{-54}{9}$ c. $\frac{75}{-25}$ (U) -3
 b. $\frac{-36}{-12}$ d. $\frac{0}{-10}$ (C) -6
 (M) 0
 (L) 3
 (E) 6

3 Find the quotient.

- a. $-48 \div (-3)$ (D) -2
 b. $-36 \div 18$ (H) 2
 c. $180 \div (-10)$ (T) 18
 d. $900 \div 450$ (A) -18
 (F) 16

4 Simplify.

- a. $\frac{150}{-2}$ c. $\frac{-24 + 9}{-8 + 3}$ (K) 6
 b. $\frac{-7500}{-75}$ d. $\frac{-24}{-8} + \frac{9}{3}$ (E) -75
 (N) 3
 (O) -6
 (K) 100

5 Simplify.

- a. $\frac{-13 + 1}{3}$ c. $\frac{-20 - 25}{-15}$ (A) 3
 b. $\frac{(-15)(-4)}{-6}$ d. $\frac{100 - (-20)}{30}$ (I) -3
 (S) 4
 (U) -10
 (O) -4

6 Simplify.

- a. $\frac{-49}{7} + \frac{-64}{8}$ c. $\frac{-26}{-13} + \frac{-60}{5}$ (E) 10
 b. $\frac{150}{-15} + \frac{-13}{-13}$ d. $\frac{-99}{-1} + \frac{0}{-99}$ (G) -9
 (W) 99
 (N) -15
 (B) -10

7 Evaluate if $x = -2$, $y = -6$.

- a. $\frac{xy}{-3}$ c. $\frac{-9x}{y}$ (D) 24
 b. $\frac{8y}{x}$ d. $\frac{144}{-xy}$ (L) -3
 (N) -4
 (R) 15
 (T) -12

8 Evaluate if $k = 3$, $n = -8$.

- a. $\frac{kn}{2}$ c. $\frac{96}{-kn}$ (S) 1
 b. $\frac{k + n}{-5}$ d. $\frac{9n}{4k}$ (A) -6
 (E) 4
 (I) 6
 (U) -12

9 Solve mentally.

- a. $\frac{x}{7} = -6$ c. $\frac{360}{q} = -36$ (D) -10
 b. $\frac{b}{-3} = -14$ d. $\frac{-64}{m} = 4$ (P) -42
 (T) 16
 (S) -16
 (N) 42

10 Solve mentally.

- a. $8y = -56$ (B) 21
 b. $-3p = -63$ (K) 40
 c. $80 \div u = 2$ (N) -40
 d. $80 \div (-v) = 2$ (G) -7
 (M) -21

Name: _____

Date: _____

Club Budget Project

Task: You will create a budget for a school club.

Overview: The members of your group have been selected as the officers for your school's Junior Beta Club. This executive committee is responsible for tracking all money deposited into the club's account as well as all money spent during the year. The committee also needs to create a budget for the remainder of the year. At the beginning of September, the balance in the account was \$253.24. It is currently December.

Vocabulary:

- Budget
- Account
- Balance
- Monthly statement
- Deposit
- Withdrawal
- Writing a check/debit card
- Debit
- Credit

Summary of Club Money Collected and Spent from September-November (Monthly Statements)

	Sept. 1- Sept. 30	Oct. 1- Oct. 31	Nov. 1- Nov. 30
Starting Balance:	\$253.24		
Money Withdrawn:	Induction Ceremony: \$-100.32	Gardening Materials: \$-124.98	Supplies for Thanksgiving baskets: \$-40.43
Money Deposited:	Dues: 25 members at \$5 each = \$ _____	Bake Sale: \$205.50	None
Ending Balance:			

1.

- In September 25 club members each paid dues of \$5. Dues are money paid by club members to cover the cost of events and activities. How much money did the club gain from dues in September? Record your answer on the line in the box above.
- Analyze the information in the chart for September. Explain if the account balance increased or decreased throughout September and why?
- Money deposited is money added to an account. On the number line below, represent the **TOTAL money deposited** to the account **during September, October, and November**. (Hint: You should have 2 jumps on your number line: 1 for dues and 1 for the bake sale).



- Money withdrawn is money taken out of an account. On the number line below, represent the **TOTAL money withdrawn** from the account during September, October, and November. (Hint: You should have 3 jumps on your number line). (Hint: Start at the balance you arrived at from 1c)



- e) How much money is in the account at the end of November? _____
- f) Explain how you determined the balance of the account at the end of November using the number lines or adding and subtracting negative and positive numbers.
- g) Now that it is November, do you have more or less money than what you started with in the beginning of September?

2. This year the club voted to include some fun activities throughout the year and an end-of-year trip to celebrate the club's success. Below is a list of suggested activities and fundraisers.

Fun Activities (Withdrawals)	Fundraisers (Deposits)
Bowling: \$60 per lane (up to 6 people per lane)	Candy sale: \$60 per member
Skating: \$12 per person	Wrapping paper: \$50 per member
Laser tag: \$15 per person	Holiday wreaths: \$65 per member
Water park: \$50 per person	Car wash: \$5 per car
Zoo visit: \$12 per student; \$17.50 per adult	Dress-down day: \$1 per student

- a) Create a monthly budget for the remainder of the year (Dec-May). In your budget, you will propose which fun activities your club should pursue. You will also propose which fundraisers your club should use to raise money. Keep the following in mind:
- The ending balance of December is the starting balance for January, etc.
 - Some activities and some fundraisers will be more productive at specific times of the year. For example, think about during what season is best to have a car wash?
 - You do not want your account balance to drop below \$0.
 - **You need to budget \$75 a month for supplies.**
 - In **May** your club will be attending the North Carolina Beta Club Convention in Raleigh, which will cost a total of **\$1,500**. This includes hotel rooms and transportation.
 - The balance at the end of May needs to be at least **\$250** for the next school year.

	Dec. 1- Dec. 31	Jan. 1- Jan. 31	Feb. 1- Feb. 28	Mar. 1- Mar. 31	Apr. 1- Apr. 30	May 1- May 31
Starting Balance:						
Money Withdrawn: (Debit)						
Money Deposited: (Credit)						
Ending Balance:						

- b) Write a short narrative on a separate sheet of paper explaining the decisions you made when making your budget. Include the following: **(ONE NARRATIVE FROM EVERY STUDENT IN THE GROUP)**
- How did you determine what activities to choose?
 - How did you determine what fundraisers to choose?
 - How did you determine when to do the activities and fundraisers chosen?
 - Explain how you figured out the balance for each month.
 - Explain how much money you will have at the end of year and explain if you think is a good amount to have to begin the next school year with.

Grading Rubric for Club Budget Project

Students will be graded for each of the four categories on a point scale. A student's total points (0-12) will then be converted to a percentage value.

These grades will be considered Project grades!

Student Name: _____

	3 pts	2 pts	1 pt	0 pts
Are both number lines used appropriately?	Used completely and accurately.	Partially used.	Minimum usage.	Not used at all.
Usage of monthly statement table?	Completely filled in.	Mostly filled in.	Partially filled in.	Not used at all.
Accuracy of computation.	No mistakes made.	Few mistakes made (1-2)	Many mistakes made (3 or more)	No attempt at computation.
Summarization (Are all bullets addressed and sufficiently answered?)	All bullets are addressed sufficiently.	3-4 bullets are addressed sufficiently.	2 or less bullets are addressed sufficiently.	None of the summarizing bullets were addressed.

Total points earned: _____

Final grade: _____

Assignment

Evaluate each expression.

1) $3\frac{4}{5} - \frac{11}{6}$

2) $\frac{2}{3} - \left(-\frac{15}{8}\right)$

3) $\frac{1}{2} - \frac{2}{7}$

4) $\left(-1\frac{2}{5}\right) - \frac{3}{4}$

5) $(-1.4) + (-1.7)$

6) $2.3 + (-1.4)$

7) $7.7 - (-7.25)$

8) $0.5 - 4.4$

Find each quotient.

9) $3.6 \div -4.4$

10) $3.2 \div -4.784$

11) $-6.1 \div 3$

12) $3 \div -1.7$

13) $-1 \div 3\frac{1}{5}$

14) $-1\frac{3}{4} \div \frac{-5}{8}$

$$15) \frac{-2}{3} \div -2$$

$$16) \frac{-1}{8} \div 5$$

Find each product.

$$17) (-4.7)(8.9)$$

$$18) (4)(-3.5)$$

$$19) (9.3)(-6.2)$$

$$20) (1.6)(-3.2)$$

$$21) -\frac{1}{7} \cdot -\frac{3}{4}$$

$$22) 3\frac{7}{8} \cdot -\frac{3}{7}$$

$$23) 1\frac{3}{4} \cdot -\frac{2}{5}$$

$$24) 4\frac{6}{7} \cdot -\frac{3}{4}$$

How Could Goldilocks and The Big Bad Wolf Be in the Same House?

Find each answer in the answer columns. Write the letter of the answer in the box containing the problem number.



Simplify.

1. $\frac{3}{5} + \frac{-1}{3}$

2. $\frac{-1}{4} + \frac{-2}{3}$

3. $\frac{1}{2} - \frac{7}{10}$

4. $-\frac{3}{4} - \frac{1}{8}$

5. $\frac{5}{6} + \frac{4}{5}$

6. $-\frac{1}{3} + \frac{11}{15}$

7. $-\frac{5}{6} + \frac{-8}{9}$

8. $\frac{7}{8} - \frac{2}{3}$

9. $\frac{3}{10} + \frac{-47}{100}$

10. $-\frac{7}{9} + \frac{3}{4}$

11. $-\frac{5}{12} - \frac{5}{6}$

12. $\frac{2}{5} + \frac{7}{8}$

13. $\frac{1}{3} - \frac{9}{11}$

14. $\frac{1}{2} + \frac{2}{3} - \frac{5}{12}$

15. $1 - \frac{1}{16}$

Solve.

16. A triangular course for a canoe race is marked with buoys. The first leg is $\frac{3}{10}$ mi, the second leg is $\frac{1}{2}$ mi, and the third leg is $\frac{2}{5}$ mi. How long is the race?
17. Janis jogs around a rectangular park that is $\frac{3}{5}$ mi long and $\frac{1}{4}$ mi wide. How far is it around the park?
18. Rimshot bought two equal-sized pizzas. He cut the first one into 8 equal pieces and ate three of them. Then he cut the other pizza into 6 equal pieces and ate one of them. What fraction of a whole pizza did he eat altogether?
19. Karina bought a pizza that was cut into 8 equal pieces. She ate half of one piece. What fraction of the whole pizza did she eat?

answers 1-9		answers 10-19	
A	$-1\frac{13}{18}$	W	$1\frac{7}{10}$ mi
U	$-\frac{1}{10}$	S	$-\frac{1}{36}$
Y	$-\frac{7}{8}$	E	$1\frac{3}{10}$ mi
B	$1\frac{13}{30}$	O	$-\frac{16}{33}$
T	$\frac{4}{15}$	T	$\frac{1}{16}$
E	$\frac{2}{5}$	S	$\frac{7}{12}$
O	$-\frac{17}{100}$	U	$\frac{15}{16}$
P	$-1\frac{7}{18}$	H	$1\frac{11}{40}$
O	$-\frac{11}{12}$	S	$1\frac{1}{5}$ mi
N	$\frac{7}{24}$	I	$-\frac{13}{33}$
W	$1\frac{19}{30}$	R	$\frac{13}{24}$
T	$\frac{5}{24}$	A	$-1\frac{1}{4}$
S	$-\frac{1}{5}$	I	$\frac{3}{4}$

14	8	17	11	3	7	19	5	13	16	1	9	18	4	12	2	15	10	6
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MAZE PHRASE page 1

Do the problems below and on page 2. Find your answers in the maze on page 2. SHADE IN each room containing a correct answer.

Then find a path to the Treasure that goes only through rooms you have NOT shaded in. The words in those rooms will form an a-mazing message!

1

The temperature at 6:00 P.M. in Frostfrozen, Antarctica was -37°C . If the temperature dropped $8\frac{1}{2}^{\circ}\text{C}$ during the next hour, what was the temperature at 7:00 P.M.?

2

Cash Orcheck had a balance of \$867 in his checking account on January 1. During January, Cash wrote checks for the following amounts: \$98, \$456, \$29, and \$381. What was his balance at the end of January?

3

Joe Terrific gained 986 yards during football season. Ziggy Fumble lost 118 yards during the season. What was the difference in their yardage gains?

4

The net profit for 4 months of Calculess Company is shown in the table: What was the net profit for the 4 month period?

Month	Net Profit
Jan.	\$34,500
Feb.	15,600
Mar.	-5,800
Apr.	-20,000

5

A submarine was cruising at -132 meters. It then climbed to $-64\frac{1}{2}$ meters. What was the difference between its original altitude and its later altitude?

6

An elevator traveled in this way: up 18 floors, down 6 floors, down 14 floors, up 19 floors, down 25 floors. What was the net change in position of the elevator?

7

Astronauts Milky and Way boarded their spacecraft $4\frac{1}{2}$ hours before launch. They ate lunch $2\frac{1}{3}$ hours after launch. How many hours passed between boarding time and lunch time?

8

The Buzzards football team made the following gains on four plays: 9 yards, -11 yards, $-2\frac{2}{3}$ yards, $6\frac{1}{3}$ yards. What was the net change in position of the Buzzards as a result of the four plays?

9

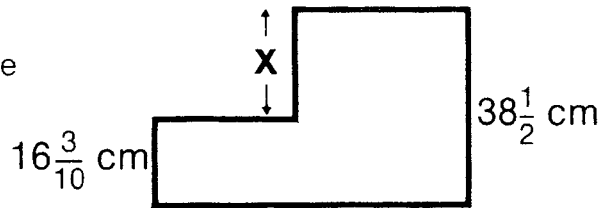
On Monday, the temperature in Iceberg, North Pole was -19°C . On Tuesday, it rose $26\frac{1}{2}^{\circ}\text{C}$. On Wednesday, it dropped $33\frac{1}{2}^{\circ}\text{C}$. What was the temperature on Wednesday?

10

During a week, the stock of M.A.T.H. Corporation had the following daily changes in price: Monday, up 4 points; Tuesday, down 6 points; Wednesday, up $3\frac{1}{2}$ points; Thursday, up $1\frac{1}{4}$ points; Friday, down $\frac{5}{8}$ of a point. What was the net change in price of the stock for the week?

11

What is the distance x in the figure at the right?



12

A cross-country skier started skiing at the 2000 meter level of a mountain. His altitude changed during the next four hours as follows: 1st hour, up 47 meters; 2nd hour, down 269 meters; 3rd hour, down 109 meters; 4th hour, up 54 meters. What was his altitude after the 4th hour?

13

One of two brothers was scuba diving at $-9\frac{1}{2}$ meters. The other brother was flying in a helicopter at 298 meters. What was the difference in the two brothers' altitudes?

\$24,300 ENOUGH	★	TREASURE	★	$-45\frac{1}{2}^{\circ}\text{C}$ OFTEN
-8 KNOW	-\$86 IT	$22\frac{1}{5}$ cm IS	$1\frac{2}{3}$ yd ABOUT	$+2\frac{7}{8}$ pt PIE
1206 yd NEVER	$-1\frac{1}{3}$ yd SAW	-\$97 THAT	$304\frac{1}{2}$ m THINK	$67\frac{1}{2}$ m EAT
-4 THEY	$+2\frac{1}{8}$ pt CAN	$-47\frac{1}{2}^{\circ}\text{C}$ BELIEVE	1634 m NOT	\$23,600 DO
-22°C BECAUSE	$69\frac{1}{2}$ m STONE	$2\frac{1}{3}$ yd IN	1723 m STATUES	$7\frac{1}{3}$ hr TEACHERS
1104 yd FIGHT	$307\frac{1}{2}$ m MONSTERS	-26°C WORKING	$309\frac{1}{2}$ m MANY	$2\frac{2}{3}$ hr SHOP
$21\frac{7}{10}$ cm FIREMEN				$6\frac{5}{6}$ hr A

← ↑ →
ENTER

WRITE THE MESSAGE HERE: