Warm-up

$$8 - 4(2 + 5^2) \div 12$$

$$6 \times 8 - (4^2 + 2) + 72 \div 8$$

- Place “Fighter Packets” in red tray
- Keep math book pg on your desk

Multiplying Decimals

PRACTICE AND PROBLEM SOLVING

Add or subtract. Estimate to check whether each answer is reasonable.

28. $-7.238 + 6.9$

29. $4.16 - 9.043$

30. $-2.09 - 15.271$

31. $5.23 - (-9.1)$

32. $-123 - 2.55$

33. $5.29 - 3.37$

34. $32.6 - (-15.86)$

35. $-32.7 + 62.82$

36. $-51 + 81.623$

37. $5.9 - 10 + 2.84$

38. $-4.2 + 2.3 - 0.7$

39. $-8.3 + 5.38 - 0.537$

2-3 Multiplying Decimals

Common Core GPS:

-MCC7.NS.2: Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.

MCC7.NS.2a: Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (–1)(–1) = 1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.

MCC7.NS.3: Solve real-world and mathematical problems involving the four operations with rational numbers.

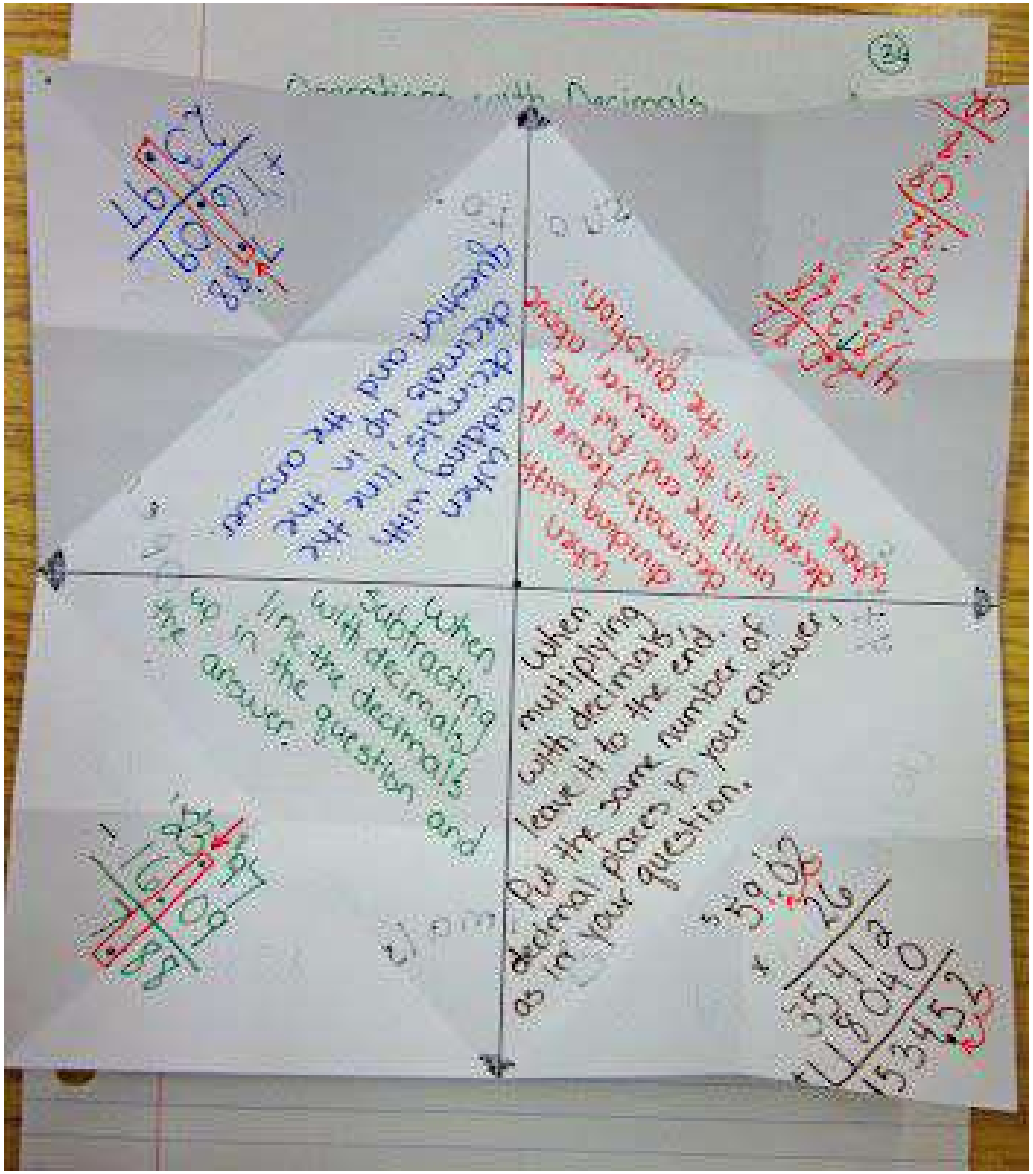
EQ: Learn to multiply decimals.

To multiply decimals, multiply as you would with integers. To place the decimal point in the product, count the number of decimal places in each factor. The product should have the same number of decimal places in the factors.

7	0.7	*1 decimal place*
× 8	× 0.8	+ *1 decimal place*
56	0.56	*2 decimal places*

Same digits

Multiplying Decimals



Multiplying Decimals

When multiplying with decimals, leave it to the end. Put the same number of decimal places in your answer, as in your questions.

59.02 + 26

Pre Req.

Multiply.

1. 842×76 63,992

2. $1{,}240 \times 83$ 102,920

Practice

Integer rules are still the same!!!!!!!!
-Same sign = Positive
-Different signs = Negative

Multiply.

A. $7 \cdot 0.1$

$$\begin{array}{r} 7 \\ \times\ 0.1 \\ \hline 0.7 \end{array}$$

0 decimal places
1 decimal place
0 + 1 = 1 decimal place

B. $-3 \cdot 0.03$

$$\begin{array}{r} -3 \\ \times\ 0.03 \\ \hline -\ 0.09 \end{array}$$

0 decimal places
2 decimal places
0 + 2 = 2 decimal places. Use zero as a place holder.

Additional Example 1: Multiplying Integers by Decimals

Multiply.

C. -2.45 · -35

$$
\begin{array}{r}
2.45 \\
\times\ 35 \\
\hline
12\ 25 \\
+\ 73\ 50 \\
\hline
85.75
\end{array}
$$

2 decimal places

0 decimal places

2 + 0 = 2 decimal places

Additional Example 3: *Application*

To find your weight on another planet, multiply the relative gravitational pull of the planet and your weight. The relative gravitational pull on Mars is 0.38. What would a person who weighs 85 pounds on Earth weigh on Mars?

0.38	*2 decimal places*
× 85	*0 decimal places*
1 90	
+ 30 40	
32.30	*2 + 0 = 2 decimal places*

Multiplying Decimals

Workbook pg. 53

13-25

Choose 5

Workbook Pg. 54

Choose 3

2-4 Dividing Decimals

Common Core GPS:

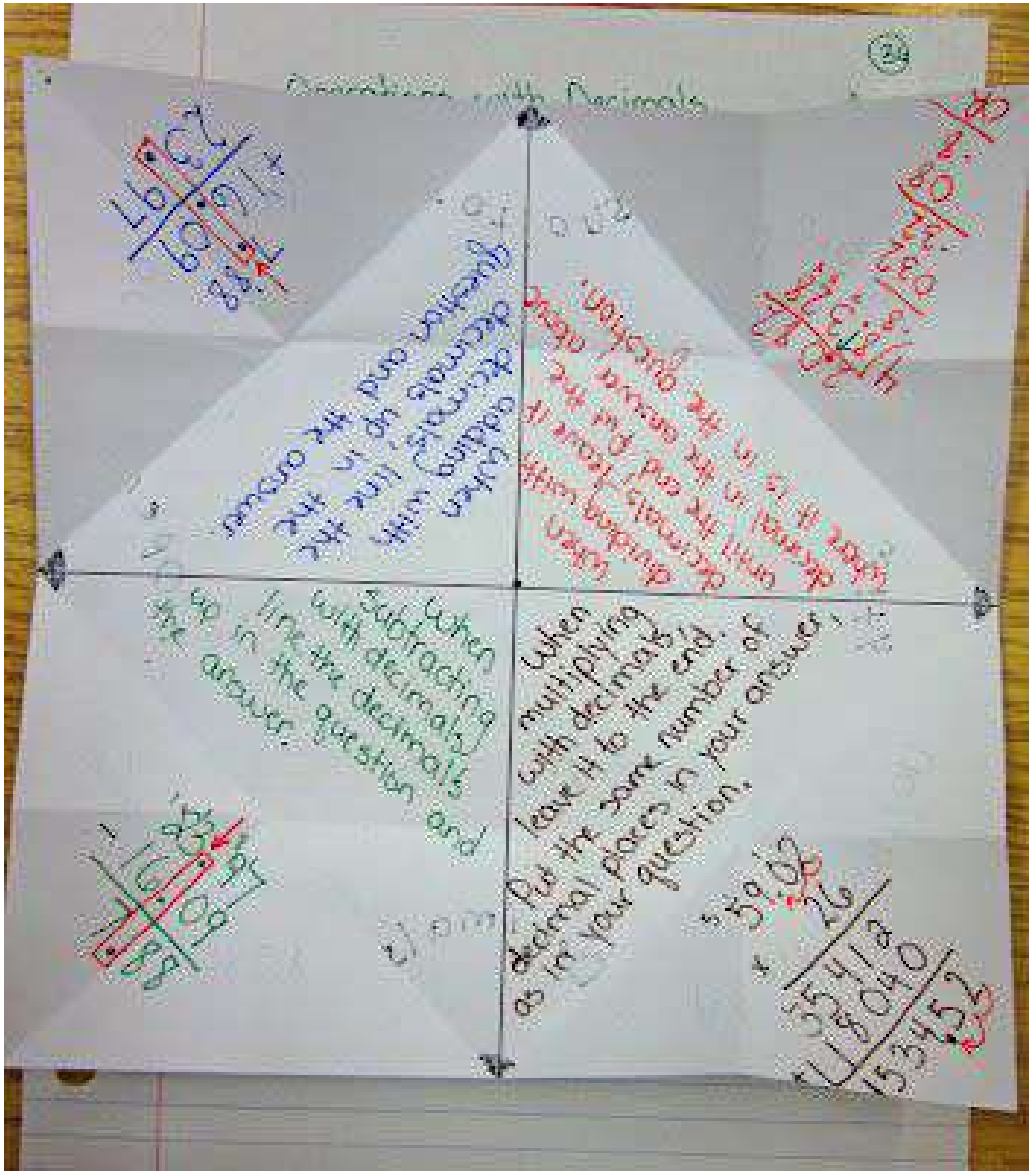
-MCC7.NS.2: Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.

MCC7.NS.2a: Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (–1)(–1) = 1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.

MCC7.NS.3: Solve real-world and mathematical problems involving the four operations with rational numbers.

Essential Question: How do you divide decimals?

Video



Dividing Decimals

When dividing with decimals, leave it until the end. Bring the decimal straight up. If a decimal is on the outside of the house, move it to make a whole number. Move it inside the hose the same number of spaces, then bring it straight up.

8.328 ÷ 4

4.32 ÷ 3.6

Additional Example 1A: Dividing Decimals by Decimals

Divide.

8.28 ÷ 4.6

$8.28 \div 4.6 = 82.8 \div 46$

Multiply both numbers by 10 to make the divisor an integer.

$$
\begin{array}{r}
1.8 \\
46\overline{)\,82.8} \\
-\,46 \\
\hline
36\ 8 \\
-36\ 8 \\
\hline
0
\end{array}
$$

Divide as with whole numbers.

Helpful Hint

Multiply both numbers by the least power of ten that will make the divisor an integer.

Integer rules are still the same!!!
Same sign = Positive
Different sign = Negative

Additional Example 1B: Dividing Decimals by Decimals

Divide.

18.48 ÷ (–1.75)

$18.48 \div (-1.75) = 1848 \div 175$ *Multiply both numbers by 100 to make the divisor an integer.*

```
        10.56
175 ) 1848.00
    -175
      98 0
     -87 5
      10 50
     -10 50
          0
```

Use zeros as placeholders

Divide as with whole numbers.

$18.48 \div (-1.75) = -10.56$ *The signs are different.*

Check It Out: Example 1A

Divide.

-6.45 ÷ -0.5

$6.45 \div 0.5 = 64.5 \div 5$

Multiply both numbers by 10 to make the divisor an integer.

$$
\begin{array}{r}
12.9 \\
5\overline{)\,64.5} \\
-5 \\
\hline
14 \\
-10 \\
\hline
4\,5 \\
-4\,5 \\
\hline
0
\end{array}
$$

Divide as with whole numbers.

Check It Out: Example 1B

Divide.

16.48 ÷ (–2.06)

$16.48 \div (-2.06) = 1648 \div (206)$

Multiply both numbers by 100 to make the divisor an integer.

$$
\begin{array}{r}
8 \\
206\overline{)1{,}648} \\
-1\,648 \\
\hline
0
\end{array}
$$

Divide as with whole numbers.

$16.48 \div (-2.06) = -8$

The signs are different.

Additional Example 2B: Dividing Integers by Decimals

Divide. Estimate to check whether each answer is Reasonable.

–24 ÷ (–2.5)

$-24.0 \div (-2.5) = -240 \div (-25)$ *Multiply both numbers by 10.*

$$
\begin{array}{r}
9.6 \\
25\overline{)\,240.0} \\
-\,225 \\
\hline
150 \\
-\,150 \\
\hline
0
\end{array}
$$

Divide as with whole numbers.

Estimate

$-24 \div (-3) = 8$ *The answer is reasonable.*

Additional Example 3: *Transportation Application*

Eric paid $229.25 to rent a car. The fee to rent the car was $32.75 per day. For how long did Eric rent the car?

$229.25 \div 32.75 = 22{,}925 \div 3{,}275$

Multiply both numbers by 100.

$$
\begin{array}{r}
7 \\
3{,}275\overline{)\,22{,}975} \\
-22{,}975 \\
\hline
0
\end{array}
$$

Divide as with whole numbers.

Eric rented the car for 7 days.

HW:

- Workbook pg. 59
  - Choose 5