Unit Plan OVERVIEW
    Grade level: Seventh
    Subject Area: Math, Holt: Chapter 3 – Applying Rational Numbers
    Dates: 13 Days

Chapter 3's Main Idea:

Chapter Focus

You will add, subtract, multiply, and divide decimals, fractions, and mixed numbers including rational numbers. You will also solve equations involving decimals and fractions.

Chapter at a Glance

COMMON CORE

Lesson		Standards for Mathematical Content
3-1	Adding and Subtracting Decimals	CC.7.NS.1, CC.7.NS.1b, CC.7.NS.1c, CC.7.NS.3
3-2	Multiplying Decimals	CC.7.NS.2, CC.7.NS.3
3-3	Dividing Decimals	CC.7.NS.2, CC.7.NS.3
3-4	Solving Equations Containing Decimals	CC.7.NS.2, CC.7.EE.4
3-5	Adding and Subtracting Fractions	CC.7.NS.1b, CC.7.NS.1c
3-6	Multiplying Fractions and Mixed Numbers	CC.7.NS.2, CC.7.NS.2c, CC.7.NS.3
3-7	Dividing Fractions and Mixed Numbers	CC.7.NS.2, CC.7.NS.2b, CC.7.RP.1
3-8	Solving Equations Containing Fractions	CC.7.NS.2c, CC.7.EE.4
	Problem Solving Connections	
	Performance Task	
	Assessment Readiness	

At the end of the chapter, Students should be able to say the following:

Section 1:
- ✓ I can add decimals
- ✓ I can subtract decimals

- ✓ I can add fractions
- ✓ I can subtract fractions

Section 2:
- ✓ I can multiply decimals
- ✓ I can divide decimals

- ✓ I can multiply fractions
- ✓ I can divide fractions

- ✓ I can multiply mixed numbers
- ✓ I can divide mixed numbers

Section 3:
- ✓ I can solve equations containing decimals
- ✓ I can solve equations containing fractions
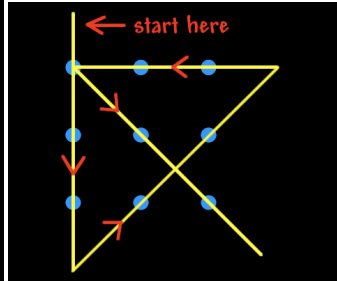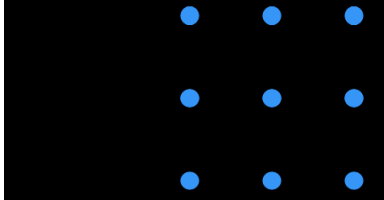

Vocabulary for Chapter 3

- ★ **Rational Number** – A number that can be written in the form *a/b*, where *a* and *b* are integers and *b* does not equal zero.

- ★ **Fraction**- represents a part of a whole.

- ★ **Decimal**- a fraction whose denominator is a power of ten and whose numerator is expressed by figures placed to the right of a decimal point.

- ★ **Mixed Number** - a number consisting of an integer and a fraction.

- ★ **Reciprocal/Multiplicative Inverse** – One of two numbers whose product is 1.

- ★ **Distributive Property** - For all real numbers, *a, b*, and *c*, *a(b + c) = ab + ac* and *a(b - c)= ab - ac*.

- ★ **Equation** - a statement that the values of two mathematical expressions are equal (indicated by the sign =).

Day-to-Day Layout:

Day 1: Open Chapter
- ★ Warm up:

* ★ Vocabulary: LINCing Routine
* ★ Chapter Summary: Explain what the chapter is about.
* ★ "I can" statements: Explain what the "I can" statements are.
* ★ Homework: What do you want to get out of this chapter? Any goals? What are you going to do so you can say all of the "I can" statements??? What "I can" statements are you most interested in learning about? Explain!

Day 2: Add/Subtract Decimals

* ★ Warm up: Would you rather work for 30 days and get paid 5 millions dollars, or work for 30 days and be paid 1 cent the first day, 2 cents the second day, 4 cents the third day, 8 cents the forth day, and so on (it doubles everyday)...?
  Answer: Work for 30 days and start with 1 cent the first day. By the end of 30 days you would have $5,368,709.12, which is bigger than 5 million!
* ★ Clock Partners!
* ★ Discovery Worksheet 1 – What happens when ...
* ★ Together as a class – discuss what we noticed and do a few examples.
* ★ Listen too Jay Sean – Down (first 20 seconds)
* ★ http://www.youtube.com/watch?v=0heWxHeRbkY (start at 1 minute 30 seconds)
* ★ Homework: FUNWORK 1, Prices Around the House
* ★ Additional practice http://www.youtube.com/watch?v=UqwFI7ePTKk

Day 3: Add/Subtract Fractions

* ★ Warm up: In a family with 4 siblings, John is older than Mary, Peter is younger than John, Mary is older than Peter, and Sarah is older than John. Who is the second oldest in the family? Who is the youngest?
  Answer: Sarah, John, Mary, Peter
* ★ Discovery Worksheet 2 – How? Why?
* ★ Together as a class – discuss what we notice and do a few examples.
* ★ Homework: FUNWORK 2

Day 4: Multiply/Divide Decimals
* ★ Warm up: Review Add/Subtract Fractions and Decimals – Partner Check
* ★ Discovery Worksheet 3 –
* ★ Together as a class – discuss what we notice and do a few examples.
* ★ Homework: FUNWORK 3
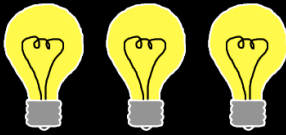
Day 5: Multiply/Divide Fractions

★   Warm up: Use only 4 straight lines to cut a pizza into 11 pieces.
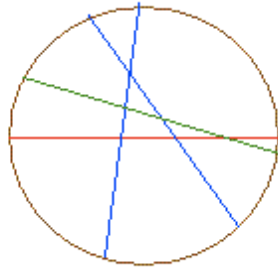
★ Discovery worksheet 4 –
★ Together as a class
★ Homework: FUNWORK 4

Day 6: Multiply/Divide Mixed Numbers
    ★ Warm up:

There are three light switches up in the attic of an old house... They control three light bulbs down in the basement. The problem is that you don't know which switch is connected to which bulb. You can make one trip down to the basement to figure this out.

How are you going to do it?

Turn on TWO of the switches and wait about 15 minutes...

Turn off ONE switch and go down to the basement...

The bulb that is lit matches up to the switch you left on...

The bulb that is off and WARM matches up to the switch that was on, but was turned off...

The bulb that is off and cold matches up to the switch you never touched.

★ Talk about how to turn mixed number into an improper fraction. Then give about 10 minutes for students to figure out why it works. Then discuss, and have students turn in a written assignment on how it works.
★ Review BINGO
★ Homework: Finish any work that needs to be finished or redone.

Day 7: Solve Equations with Decimals
★ Warm up: Review Multiply/Divide Fractions and Decimals, and play a round of BINGO
★ Together: Remind students about solving equations and how to undo equations to get the variable by itself with integers. Then ask students if they think it's the same with decimals. Show a few examples and a word problem.
★ Homework: Have students create a word problem and 4 equations with decimals involving all operations. Then have a paper fight and whatever paper a student ends up with is the one they have to do for funwork.

Day 8: Solve Equations with Fractions
★ Warm up:

In a family photo you see:
1 grandfather
1 grandmother
2 fathers
2 mothers
6 children
4 grandchildren
2 sisters
2 brothers
3 sons
3 daughters
1 father-in-law
1 mother-in-law
1 daughter-in-law
What's the fewest number of people possible that are in the photo?

There are EIGHT people total...

4 kids (2 boys and 2 girls)
Their mom and dad
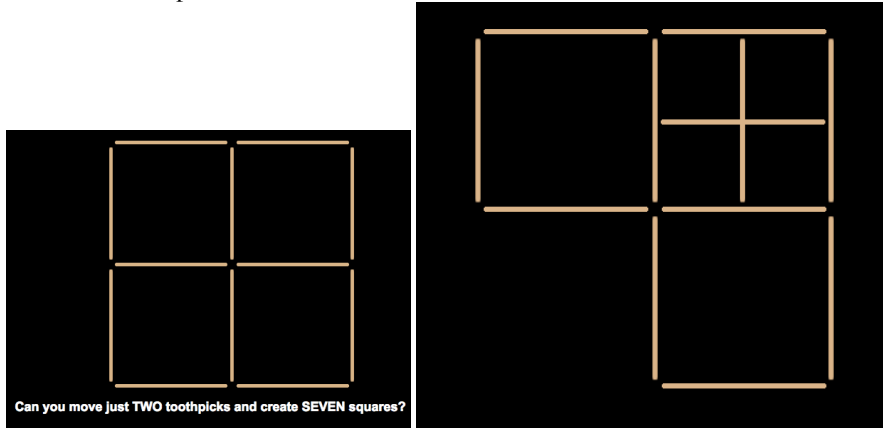And their grandma and grandpa
(This is the dad's parents.)

★ Homework

Day 9: Review
 ★ Warm up: Review Solving Equations with Fractions and Decimals
 ★ Scavenger Hunt (Pairs)
 ★ Homework

Day 10: Chapter Connections
 ★ Warm up:

Can you move just TWO toothpicks and create SEVEN squares?

 ★ Anchor Chart
 ★ Show example
 ★ Present
 ★ Homework: Explain Project and give rubric

Day 11: Project
 ★ Warm up: What is the first memory you remember? Explain.
 ★ Work on project

Day 12: Project
 ★ Warm up: Pick one of the two:
   1. If you could be a superhero what would you be? Why?
   2. If you had $1,000,000 what would you do with it? Why?
 ★ Work on project

Day 13: Present Project/Mini Assessment
 ★ Warm up: The price is right! How much would you bid for this item? DON'T GO OVER!
   Elliptical Trainer - Horizon Fitness

http://www.youtube.com/watch?v=8lAJZMF830s

 ★ 12 question Mini Assessment
 ★ Present Projects

Chapter 3 Project: NAME:

For each one of the three section (1.Add/Subtract, 2.Multiply/Divide, 3.Solving Equations) from your "I can" statements you will provide ONE of the following:

1. Show a real life example
2. Demonstrate your learning with any multiple intelligence
3. Talk through a problem with Ms.Obenauf

You get to decide what section you want to show a real life example in, which section you want to demonstrate your learning with a multiple intelligence, and which section you want to explain a problem to Ms.Obenauf.

Examples:

1. A real life example could be a real life story problem of when you might use that math concept. Another way might be just an example of when in the real world you might see someone else use the math concept or when you have used it before. You can be creative with this, but make sure it pertains to real life! You might want to add a picture or do something creative to demonstrate this.
2. To demonstrate your learning with a multiple intelligence you can do any of the following for ONE section of chapter 3:
    a. Make a poster
    b. Write a song/poem or rap
    c. Create a puzzle or game
    d. Provide a brosure
    e. Role play
    f. Write a letter
    g. Storytelling
    h. Other: If you have a different idea, come talk to Ms.Obenauf and she would love to hear your idea.
3. For the section you pick to discuss a problem with Ms.Obenauf, she will have a problem ready and you will be explaining step by step how you do the problems she provides. This should not be scary, it is just talking your way through the problem so I know you understand what you are doing!

I will be grading you on:

Accuracy- Your real life example, multiple intelligece, and problems should be correct.

Neatness – Please take your time and make this neat. If you have more then one paper to turn in, please make sure they are stapled.

Creativity- I want you to be creative with this and think "outside the box".

Presentation – You only have to show your favorite, or what you're most proud of, section. So you only have to show the class one thing you did. You could show your anchor chart too.

Please try your best on this final project for chapter 3, this should be fun! If you have any questions please ask Ms. Obenauf!!! We will start the presentations on Monday, and the whole project is due by Tuesday (12th).

Mini Assessment: 12 questions on "I can" statements

Clock Partners

12

9   3

6
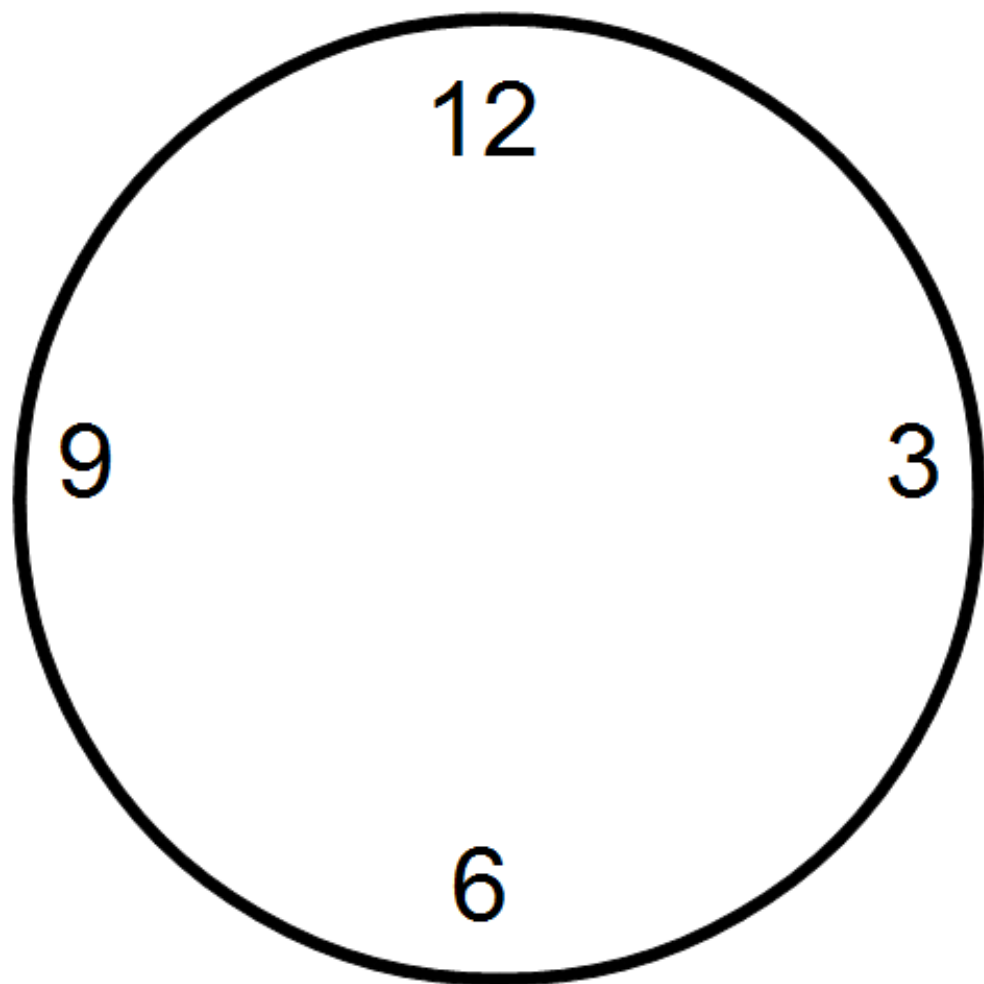
Discovery Worksheet 1 – What happens when…

At the end of today, you and your partner should be able to say both of the following:

I can add decimals!   I can subtract decimals!

What do you and your partner notice about adding decimals? Come up with 3 things!

7	6.0	5.2	4.87	0.897	1.45
+2	+ 3.0	+0.8	+1.34	+5.2	+3.9753076
9	9.0	6.0	6.21	6.097	5.4253076

1.

2.

3.

What do you and your partner notice about subtracting decimals? Come up with 3 things!

7	6.0	5.2	4.87	0.897	1.45
- 2	- 3.0	- 0.8	- 1.34	- 5.2	-3.9753076
5	3.0	4.4	3.56	-5.697	-3.4853076

1.

2.

3.

What similarities between adding and subtracting decimals did you and your partner find?

Next, have your partner make up 2 adding decimal problems, and solve them!

Write them here:

+ _____   + _____

Next, have your partner make up 2 subtracting decimal problems, and solve them!

Write them here:

                              - _____   - _____

When you and your partner are done, come and see Ms.Obenauf!

FUNWORK 1 – Prices Around the House

At the end of this FUNWORK, you should be able to say both of the following:

I can add decimals.   I can subtract decimals.

Start by looking around your house for 2 items that have a price on them. This could be food, bathroom products, anything with a price. I found almost all chip bags have a price on them. If you are having trouble finding prices ask your parent what an item around your house might cost, and write that down. List the item and the prices below:

Item 1:   Price: $

Item 2:   Price: $

Next lets add the prices!
What is….

Item 1's price
+ Item 2's price   →→→   +_____
Total price

Next lets find the difference between the prices!
What is…

Item 1's price
- Item 2's price   →→→   -_____
Total difference

Please choose **2 adding** and **2 subtracting** problems for you to try.

7.34 + (-0.75) =   9.7 – 0.3 =

(-5.36) + 9.1 =   5.92 – (-0.11) =

0.38 + 4.51 =   0.98 - 0.24 =

1.23 + 2.3 =   (-4.56) – 3.4 =

Next, I would like you to please write about why we might need to know the skill of adding and subtracting decimals. What are some real life examples where we would use these skills? Why is this important?

Check or circle the "I can" statement if you can do them! If you cannot do the following statements, what questions do you have about adding and subtracting decimals? Write your questions under the statements. If you need more practice do the other problems on the first page.

I can add decimals.   I can subtract decimals.

CHALLENGE PROBLEM (optional):
1.13 + 4.311 - 0.98 - 0.1485 + 0.37 + 4.57 - (-3.30) + 9.1896 =

Vocabulary for Chapter 3

Rational Number – A number that can be written in the form a/b, where a and b are integers and b does not equal zero.

Fraction- represents a part of a whole.

Decimal- a fraction whose denominator is a power of ten and whose numerator is expressed by figures placed to the right of a decimal point.

Mixed Number - a number consisting of an integer and a fraction.

Reciprocal/Multiplicative Inverse – One of two numbers whose product is 1.

Distributive Property - For all real numbers, a, b, and c,
$a(b + c) = ab + ac$ and $a(b - c)= ab - ac$.

Equation - a statement that the values of two mathematical expressions are equal (indicated by the sign =).

LINCS

Vocabulary	LINCing Story	LINCing Picture	Definition
Reminding Word			

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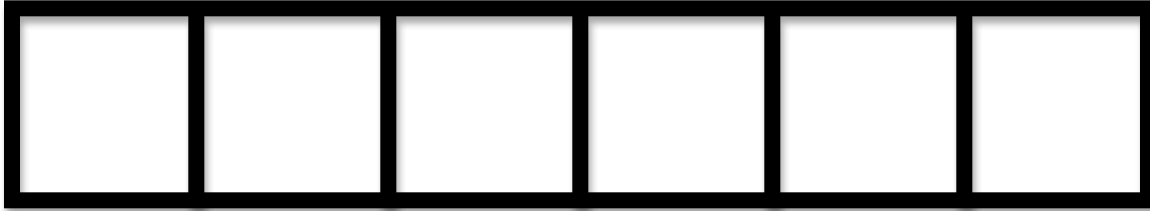| Vocabulary	LINCing Story	LINCing Picture	Definition
Reminding Word			

Discovery Worksheet 2 – How? Why?

At the end of today, you and your partner should be able to say both of the following:

I can add fractions!   I can subtract fractions!

In the long rectangle below, please shade as many squares as you would like.

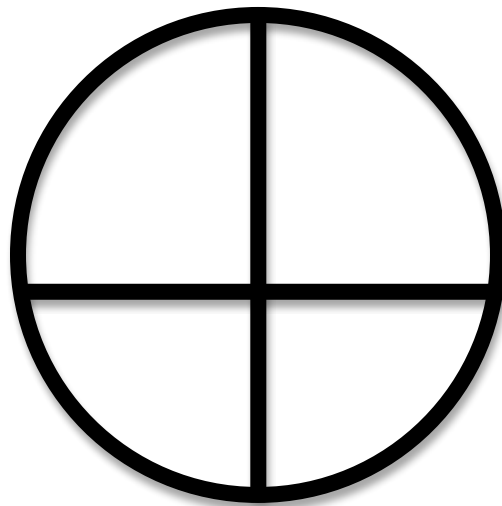How many did you shade?   Out of how many?

How do we write what you did as a fraction?

Why do we write fractions the way that we do? What do you think both the numerator and the denominator represent? Explain your reasoning!

Next, in the circle below, please shade as many parts of the circle as you wish.

What fraction did you just create?

How do you know?

If we want to add the first fraction you created to the second fraction you created, how could we draw that? What does it look like?

If we want to subtract the first fraction you created from the second fraction you created, how could we draw that? What does it look like?

What do we have to do in order to add/subtract the fractions? Why? (This is a tough question!)

What are you and your partner's conclusion(s) about adding and subtracting fractions? How is this different then adding and subtracting decimals?

Please choose **2 adding** and **2 subtracting** problems for you to try. Have your partner check your work!

$$\frac{2}{6} + \frac{1}{5} =$$

$$\frac{5}{5} - \frac{4}{6} =$$

$$\frac{6}{9} + \frac{3}{8} =$$

$$\frac{3}{4} - \frac{2}{8} =$$

$$\frac{4}{4} + \frac{2}{5} =$$

$$\frac{3}{7} - \frac{2}{9} =$$

When you and your partner have this done come and see Ms.Obenauf!

At the end of this FUNWORK, you should be able to say both of the following:

I can add fractions.   I can subtract fractions.

What do we need to find in order to add or subtract fractions?

Why do we need to find what you said above?

Using what you know above, we are going to find fractions around your house and add/subtract them! To find fractions: for example, if I have 6 drawers in my dresser and I open 1 drawer, then I have an example of the fraction 1/6. Another example is if I have 7 pairs of socks and 2 of them are white, then I made the fraction 2/7.
BE CREATIVE!

Draw the first fraction you created!

What is your fraction?

Draw the second fraction you created!

What is your fraction?

Add the two fractions you created below!

Explain how you added the two fractions?

Subtract the two fractions you created below!

Explain how you subtracted the two fractions?

Please draw a picture, write a short story, **or** create a comic strip of an example of when you could use adding or subtracting fractions in real life! Have fun with this!

Check or circle the "I can" statement if you can do them! If you cannot do the following statements, what questions do you have about adding and subtracting fractions? Write your questions under the statements. If you need more practice come up with more fractions and just try adding and subtracting them.

I can add fractions.   I can subtract fractions.

CHALLENGE PROBLEM (optional):
3/4 + 2/5 − 6/8 + 8/9 − -15/21

Partner 1:

Please, pick any 2 of the problems to solve from each section of 3! After you're done with each section have your partner place a checkmark by each problem after they check your work and answer.

1) $\dfrac{2}{4}+\dfrac{1}{5}=$ **2)** $\dfrac{9}{9}+\dfrac{3}{4}=$ **3)** $\dfrac{3}{8}+\dfrac{2}{5}=$

1) $\begin{array}{r} 7\,3\,.\,5\,9\,2 \\ +\,9\,4\,.\,9\,3\,5 \\ \hline \end{array}$ **2)** $\begin{array}{r} 1\,5\,.\,3 \\ +\,6\,0\,.\,8\,4\,4 \\ \hline \end{array}$ **3)** $\begin{array}{r} 2\,6\,.\,8\,4\,9 \\ +\,2\,9\,.\,7\,0\,6 \\ \hline \end{array}$

1) $\dfrac{5}{5}-\dfrac{1}{4}=$ **2)** $\dfrac{4}{4}-\dfrac{2}{4}=$ **3)** $\dfrac{5}{6}-\dfrac{1}{6}=$

1) $\begin{array}{r} 8\,0\,.\,4 \\ -\,4\,8\,.\,4\,3 \\ \hline \end{array}$ **2)** $\begin{array}{r} 1\,9\,.\,2\,9 \\ -\,\;\;2\,.\,2 \\ \hline \end{array}$ **3)** $\begin{array}{r} 6\,0\,.\,8\,6 \\ -\,1\,5\,.\,8 \\ \hline \end{array}$

Partner 2:

Please, pick any 2 of the problems to solve from each section of 3! After you're done with each section have your partner place a checkmark each problem after they check your work and answer.

4) $\dfrac{3}{5} + \dfrac{1}{6} =$

5) $\dfrac{4}{5} + \dfrac{3}{6} =$

6) $\dfrac{5}{9} + \dfrac{4}{4} =$

4)
$$
\begin{array}{r}
4\;9\;.\;9\;4 \\
+\;1\;0\;.\;2\;8\;2 \\
\hline
\end{array}
$$

5)
$$
\begin{array}{r}
7\;.\;2\;1\;6 \\
+\;1\;7\;.\;3\;0\;7 \\
\hline
\end{array}
$$

6)
$$
\begin{array}{r}
6\;.\;1\;2\;5 \\
+\;6\;1\;.\;1\;9\;5 \\
\hline
\end{array}
$$

4) $\dfrac{4}{4} - \dfrac{3}{4} =$

5) $\dfrac{4}{4} - \dfrac{2}{5} =$

6) $\dfrac{4}{8} - \dfrac{1}{5} =$

4)
$$
\begin{array}{r}
1\;1\;.\;8\;5 \\
-\;\;\;9\;.\;2\;4 \\
\hline
\end{array}
$$

5)
$$
\begin{array}{r}
3\;5\;.\;2 \\
-\;2\;3\;.\;1\;7 \\
\hline
\end{array}
$$

6)
$$
\begin{array}{r}
8\;1\;.\;4 \\
-\;5\;8\;.\;1 \\
\hline
\end{array}
$$

Discovery Worksheet 3 – What's going on?

At the end of today, you and your partner should be able to say both of the following:

I can multiply decimals!   I can divide decimals!

What patterns do you notice about each example? Write 3 things you discovered!

$$
\begin{array}{r}
\overset{2}{3}.14 \\
\times\ 7.6 \\
\hline
18\,8\,4 \\
21\,9\,8\,0 \\
\hline
23.8\,6\,4
\end{array}
$$

$$
\begin{array}{r}
8.76 \quad \text{2 places} \\
\times\ 7.23 \quad \text{2 places} \\
\hline
2628 \\
1752 \\
6132 \\
\hline
63.3348 \quad \text{4 places}
\end{array}
$$

$$
\begin{array}{r}
\overset{1}{4}.5 \\
\times\ 1.2 \\
\hline
.90 \\
45 \\
\hline
54.0
\end{array}
$$

1.

2.

3.

When we multiply what are we doing?

Make up a multiplication story with decimals & draw a picture:

What patterns do you notice about each example? Give me 3 things you discovered!

$$
\begin{array}{r}
0.38 \\
9 \overline{\smash{)}\ 3.42} \\
-27\downarrow \\
\hline
72 \\
-72 \\
\hline
0
\end{array}
$$

$$
\begin{array}{r}
2.57 \\
6\,4 \overline{\smash{)}\ 1\,6\,4\,4\,8} \\
128 \\
\hline
3\,6\,4 \\
3\,2\,0 \\
\hline
4\,4\,8 \\
4\,4\,8 \\
\hline
0
\end{array}
$$

$$
\begin{array}{r}
2 \\
13 \overline{\smash{)}\ 315.9} \\
-26 \\
\hline
55
\end{array}
$$

1.

2.

3.

When we divide what are we doing?

Please provide a story & picture of when we might divide decimals:

For this section have your partner do 3 problems and you do 3 problems as well. Then check each others answers! Circle the ones you picked.

1)
$$\begin{array}{r} 0.1 \\ \times \quad 6 \\ \hline \end{array}$$

2)
$$\begin{array}{r} 0.44 \\ \times \quad 61 \\ \hline \end{array}$$

3)
$$\begin{array}{r} 0.916 \\ \times \quad 376 \\ \hline \end{array}$$

4)
$$\begin{array}{r} 0.62 \\ \times \quad 9 \\ \hline \end{array}$$

5)
$$\begin{array}{r} 0.202 \\ \times \quad 57 \\ \hline \end{array}$$

6)
$$\begin{array}{r} 0.145 \\ \times \quad 4 \\ \hline \end{array}$$

For this section have your partner do 3 problems and you do 3 problems as well. Then check each others answers! Circle the ones you picked.

1)

$$3.5\,\overline{)\,3\ 3\ 8.1}$$

2)

$$.6\ 9\,\overline{)\,5\ 9\ 3.2}$$

3)

$$.5\ 1\,\overline{)\,2\ 8\ 6.9}$$

4)

$$9.7\,\overline{)\,3\ 2.2\ 5}$$

5)

$$.8\ 5\,\overline{)\,6\ 3\ 0.4}$$

6)

$$2.6\,\overline{)\,3\ 7.1\ 6}$$

At the end of this FUNWORK, you should be able to say both of the following:

I can multiply decimals.   I can divide decimals.

Choose any one to do:

7)
$$\begin{array}{r} 0.5 \\ \times \quad 1 \\ \hline \end{array}$$

8)
$$\begin{array}{r} 0.05 \\ \times \quad 22 \\ \hline \end{array}$$

9)
$$\begin{array}{r} 0.214 \\ \times \quad 835 \\ \hline \end{array}$$

Choose any one to do:

1)

$$.5\ 8\ \overline{\smash{\big)}\ 3\ 5.6\ 1}$$

2)

$$.9\ 4\ \overline{\smash{\big)}\ 8\ 8\ 9.7}$$

3)

$$.6\ 7\ \overline{\smash{\big)}\ 8\ 8\ 5.6}$$

Next, I would like for you to explain step by step how to multiply a decimal. Make one up or use an above example if you need too. Just walk me through EXACTLY what you did.

Next, I would like for you to explain step by step how to divide a decimal. Make one up or use an above example if you need too. Just walk me through EXACTLY what you did.

Next, lets teach someone! Pick either one, multiplying decimals or dividing decimals and teach someone in your household! Have them sign below after you taught them how to do one:

Check or circle the "I can" statement if you can do them! If you cannot do the following statements, what questions do you have about multiplying and dividing decimals? Write your questions under the statements. If you need more practice try the ones you did not do on the front page.

I can multiply decimals.   I can divide decimals.

CHALLENGE PROBLEM (optional):
4.32   X   -5.921   X   6.2   /   1.3

At the end of today, you and your partner should be able to say both of the following:

I can multiply fractions!   I can divide fractions!

If you were to explain to someone what multiplication means, how would you describe it? Can you draw a picture of it? Maybe use an example, like 6 times 3.

How I think of multiplication, using 6 times 3, is 6 groups of 3. Which might look like:

Group 1   Group 2   Group 3   Group 4   Group 5   Group 6
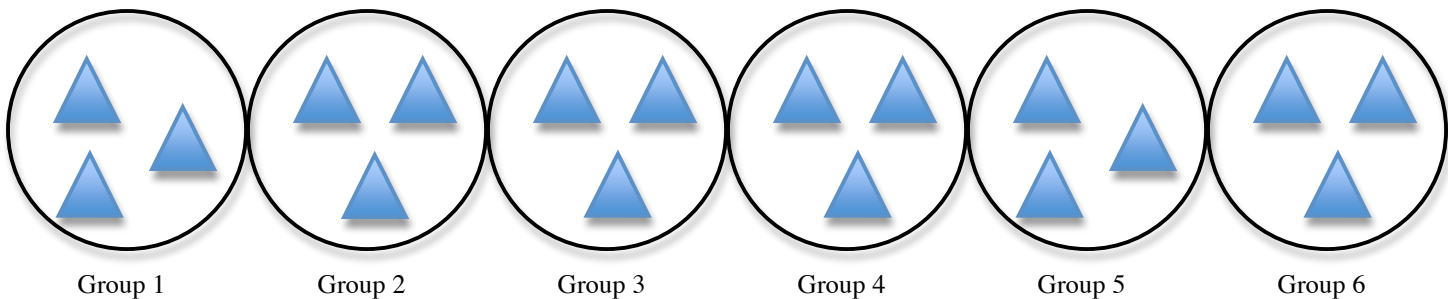
Knowing this, how do we multiply fractions? If we were to do ½ times ¼ we could look at it as a half of a group of one forth. Here is an example of this:

Here is 1/4

We have ¼, but now we need half of that. What is ½ of ¼? Draw what that looks like in the rectangle to the left!

How do we write that as a fraction?

Check with Ms.Obenauf and make sure you got the correct answer!

Since $\dfrac{1}{4} \times \dfrac{1}{2} = \dfrac{1}{8}$, what pattern do you notice about multiplying fractions? Check with Ms. Obenauf!

If that pattern continues what might 1/3 times 2/3 look like?

Next, please choose any 3 of these examples to try, using the pattern you and your partner noticed!

1) $\dfrac{5}{6} \times \dfrac{2}{2} =$ **2)** $\dfrac{4}{5} \times \dfrac{2}{9} =$ **3)** $\dfrac{6}{8} \times \dfrac{4}{9} =$
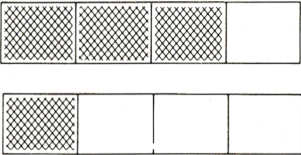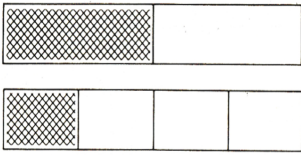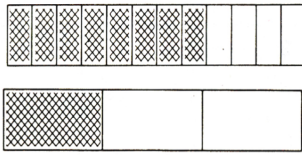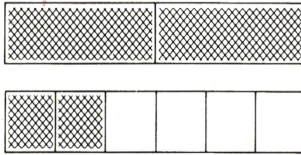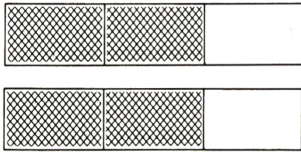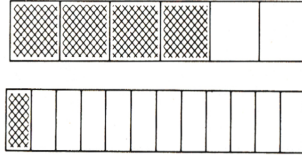
4) $\dfrac{6}{9} \times \dfrac{3}{4} =$ **5)** $\dfrac{7}{9} \times \dfrac{8}{8} =$ **6)** $\dfrac{9}{9} \times \dfrac{7}{8} =$

Next, lets talk about dividing fractions. This is a lot harder to understand, but I know you can do it! What patterns do you notice below? Come up with 3 ideas!

1.

2.

3.

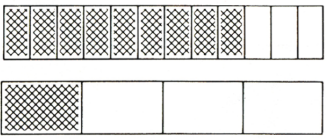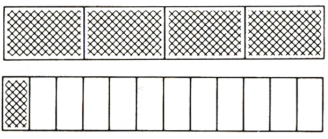| 1.	2.	3.
$\dfrac{3}{4} \div \dfrac{1}{4} =$	$\dfrac{1}{2} \div \underline{\quad} =$	$\dfrac{8}{12} \div \underline{\quad} =$
4.	**5.**	**6.**
$1 \div \underline{\quad} =$	$\dfrac{2}{3} \div \underline{\quad} =$	$\dfrac{4}{6} \div \underline{\quad} =$
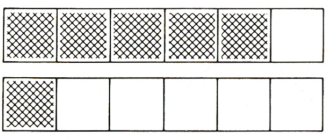
Next look at 1-6 above and fill in the answers. Once you are finish I would like you to try a challenge question! This question is, do you and your partner notice a shortcut about dividing fractions? Is there an easier way to do this? This patterns is harder to see then just multiplying fractions. Good luck! Once you think you got it come and see Ms.Obenauf. Please get a different paper to brainstorm your ideas and staple it to the back!

At the end of this FUNWORK, you should be able to say both of the following:

I can multiply fractions.   I can divide fractions.

I would like you to choose 2 of the dividing fractions to do, and 3 of the multiplying fractions to do. So you should choose a total of 5!

7.	8.	9.
— ÷ — =	1 ÷ — =	— ÷ — =

7) $\dfrac{1}{2} \times \dfrac{1}{8} =$

8) $\dfrac{8}{8} \times \dfrac{6}{7} =$

9) $\dfrac{7}{8} \times \dfrac{8}{9} =$

10) $\dfrac{7}{9} \times \dfrac{4}{9} =$

11) $\dfrac{4}{8} \times \dfrac{5}{6} =$

12) $\dfrac{4}{4} \times \dfrac{9}{9} =$

Next, on the back of this paper I would like you to write a well written explanation of what it means to multiply fractions, and another on what it means to dividing fractions. I don't want you to write out your steps, I want you to explain what it means to multiply two fractions and what it mean to divide two fractions. Then I would like you to read your explanation to someone in your household and have them initial below! Good work!!!

Check or circle the "I can" statement if you can do them! If you cannot do the following statements, what questions do you have about multiplying and dividing fractions? Write your questions under the statements. If you need more practice try the remaining problems.

I can multiply fractions.   I can divide fractions.

CHALLENGE PROBLEM (optional):
$\dfrac{1}{4} \times \dfrac{7}{31} \times \dfrac{8}{9} \div \dfrac{5}{7}$

B	I	N	G	O
		FREE SPACE		

FUNWORK - I can solve equations with decimals!   NAME:

Choose any 6 problems to convince me you know how to solve equations with decimals!

1) $2.7 + x = 2.9$

7) $9.78 = 5.6 + x$

2) $5.82 = x - 3.11$

8) $1.1 + x = 3$

3) $-3.43x = 27.44$

9) $x = \dfrac{0.12}{3}$

4) $\dfrac{x}{1.22} = 4.1$

10) $8.1 = \dfrac{x}{-5}$

5) $3.34 + x = 2.1$

11) $5.7x = -35.34$

6) $\dfrac{x}{0.9} = 8.02$

12) $x - 0.531 = 7.03$

Check or circle the "I can" statement if you can do it! If you cannot do the following statement, what questions do you have about solving equations with decimals? Write your questions under or next to the statement. If you need more practice try the rest of the problems above.

I can solve equations with decimals!

CHALLENGE PROBLEM (optional): $2.3x + 3.1 = \dfrac{x}{-6.4} - 2.5$

FUNWORK - I can solve equations with fractions!   NAME:

Choose any 6 problems to convince me you know how to solve equations with fractions!

1. $\dfrac{m}{4} = -3$

2. $\dfrac{1}{4}x = 5$

3. $\dfrac{t}{-3} = 6$

4. $-6 = \dfrac{3x}{5}$

5. $\dfrac{-2}{7}x = 6$

6. $-5 = \dfrac{-x}{6}$

7. $\dfrac{-m}{8} = -5$

8. $\dfrac{-m}{3} = 2$

9. $\dfrac{3}{4}t = \dfrac{2}{3}$

10. $\dfrac{2}{3} = -\dfrac{3}{5}t$

11. $\dfrac{-5}{6}x = \dfrac{3}{4}$

12. $\dfrac{3}{4}x = \dfrac{1}{2}$

Next, I would like you to think about story problems. Try and make up a story problem that would involve setting up and equation with a variable. This is tricky, so just give it a try and write your story problem on the back. If you want to also draw a picture of your story problem that would be awesome!

Check or circle the "I can" statement if you can do it! If you cannot do the following statement, what questions do you have about solving equations with decimals? Write your questions under or next to the statement. If you need more practice try the rest of the problems above.

I can solve equations with fractions!

CHALLENGE PROBLEM (optional): $\dfrac{2x}{3} - 3 = -12x + 7$

Section 1:

- ✓ I can add decimals : When adding decimals I...

    7.89 + 2.563 =

- ✓ I can subtract decimals : When subtracting decimals I...

    45.564 - 0.90384 =

- ✓ I can add fractions : When adding fractions I...

    $\dfrac{3}{5} + \dfrac{7}{25} =$

- ✓ I can subtract fractions : When subtracting fractions I...

    $\dfrac{12}{11} - \dfrac{2}{7} =$

Section 2:

- ✓ **I can multiply decimals : When multiplying decimals I...**

    4.54 X 3.2 =

- ✓ **I can divide decimals : When dividing decimals I...**

    9.88 ÷ 3.11

- ✓ **I can multiply fractions : When multiplying fractions I...**

    $\dfrac{3}{4} \bullet \dfrac{10}{2} =$

- ✓ **I can divide fractions : When dividing fractions I...**

    $\dfrac{1}{2} \div \dfrac{3}{8} =$

✓ **I can multiply mixed numbers : When multiplying mixed numbers I...**

$$3\frac{1}{4} \bullet 6\frac{3}{5} =$$

✓ **I can divide mixed numbers : When dividing mixed numbers I...**

$$1\frac{5}{6} \div 4\frac{2}{7} =$$

Section 3:

✓ I can solve equations containing decimals : When solving equations with decimals I...

$$x - 3.57 = 17.241$$

✓ I can solve equations containing fractions :When solving equations with fractions I...

$$\frac{4}{5} = -\frac{3}{4}x$$

1. When adding and subtracting **decimals** what do we need to do with them before we start adding or subtracting?

    5.87 - 1.49 =

2. When adding and subtracting **fractions** we first have to make sure we have a common denominator. Why do we have to do this before we add or subtract fractions?

    $\dfrac{4}{5} - \dfrac{3}{4} =$

3. Explain how you would multiply the decimals 3.6 and 4.12 together.

4. When dividing decimals, what do we need to be sure we do before we start dividing?

$6.44 \div 1.359$

5. My friend Jonny is super confused about multiplying fractions. He doesn't understand why we can just multiply the numerators together and the denominators together to get a new fraction. Will you please explain to him why we mutiply across when we mutiply fractions?

6. Explain what this student did wrong when they divided fractions, and what they should have done to get the correct answer.

$$\frac{1}{7} \div \frac{4}{8} = \frac{1}{7} \bullet \frac{4}{8} = \frac{4}{56} = \frac{2}{28} = \frac{1}{19}$$

7. Please show me how to do the following:
$$2\frac{3}{4} \div 6\frac{9}{10} =$$

8. Explain to me step by step how you would solve this problem:

$5.97 + x = 7.235$

9. When solving equations with fractions, why does it sometimes work to multiply by the reciprical instead of dividing?

$$\frac{1}{7}t = -3\frac{2}{5}$$

10. Please give me one thing you enjoyed, and one thing you would change when learning about this chapter.

11. Tell me about one main idea that you learned this chapter!