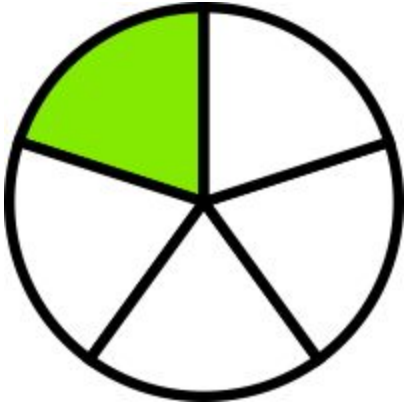


4th Grade Math Week 6 Monday: Fractions and Decimals Through Money	
Date:	Monday, 5/18
Subject:	Relating Fractions and Decimals
Image	



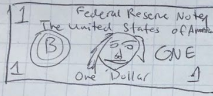
Reading Component

Understanding Fractions Through Coins

What is the relationship between "a quarter" and "twenty-five cents".

They are the same thing, and we can learn about fractions, equivalents, and decimals through them.

For this activity, \$1 will equal 100%, or $\frac{1}{1}$, or 1.0

First, draw a circle and shade it in, representing one dollar.



Next, draw a circle and shade in a quarter of it, representing one quarter.



Now, let's work with fractions. Show why a quarter dollar is 25 cents, since one dollar is 100 cents.

$\frac{1}{4}$ is "one-fourth" or "one-quarter." How many cents is that? Here, you can practice your skills finding equivalent fractions by finding common denominators.

$\frac{1}{4} = \frac{?}{100}$ How do we get from 4 to 100?
 $4 \times 25 = 100$

So we multiply the denominator of $\frac{1}{4}$ by 25 and whatever we do to the denominator, we must also do to the numerator, if we are looking for an equivalent.

$\frac{1}{4} \times \frac{25}{25} = \frac{25}{100}$ So $\frac{1}{4} = \frac{25}{100}$. That equals 0.25 which is 25%.

Now, let's do the same for pennies, nickles, and dimes. Pg 2



$$\frac{1}{100} = 1\%$$

$$= 0.01$$

one penny is one cent, which is one-one hundredth, $\frac{1}{100}$, of a dollar. I won't make you draw a circle, divide it into 100 parts, and shade it in. Nor is there any calculation to do, since 100 is our common denominator.

It is important to remember that in decimal-form, one penny is 0.01 of a dollar.



$$\frac{5}{100} = 5\%$$

$$= 0.05$$

$$= \frac{1}{20}$$

Now, let's do nickles, 5-cent coins. What is a nickle compared to a dollar? It is $\frac{5}{100}$, "five-one hundredths", or "five-hundredths" for short.

5 divided by 100 doesn't have a more simplified equivalent. oh, wait, yes it does!

with a quarter, we went from $\frac{1}{4}$ to $\frac{25}{100}$.

Now, let's go from $\frac{5}{100}$ to something with a lower denominator.

$$\frac{5}{100} = \frac{?}{?} \quad \text{I think we can divide both top and bottom by 5.} \quad \frac{5 \div 5}{100 \div 5} = \frac{?}{?}$$

$$0.05$$

$$=$$

$$1/20$$

That is a good math fact to know!

Again, $\frac{5}{5} = 1$, which is good, because when searching for equivalents, we always want to multiply or divide our fractions by something that equals 1.

$$\frac{5 \div 5}{100 \div 5} = \frac{1}{20}$$

100 divided by 5 equals 20.

Therefore, a nickle is one-twentieth, $\frac{1}{20}$, of a dollar.

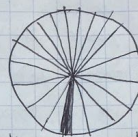
To finish with nickles, let's draw a circle and shade in $\frac{1}{20}$, one-twentieth. (pg 3)



Whoops, that won't work. Those are eighths. How can I draw twentieths?

Let me start with fifths, then

cut my fifths in half to get tenths, and then cut my tenths in half to get twentieths.



I shade in one of those slices to get $0.05 =$

$5\% = \frac{1}{20} = \frac{5}{100}$, which represents a nickle compared to a dollar.

Next, lets do dimes

Compare dimes and nickles for a second. Dimes are double nickles in value.

Two nickles equal one dime.

This means that $\frac{1}{20} \times \frac{2}{1} = \frac{2}{20} = \frac{1}{10}$

0.05

$$\begin{array}{r} 0.05 \\ \times 2 \\ \hline 0.10 \end{array} \quad \text{so } 0.05 \times 2 = 0.1$$

Let's play with equivalents

again; $\frac{1}{10} = \frac{?}{100}$

You can see that $10 \times 10 = 100$. Do the same top as to bottom: $\frac{1}{10} \times \frac{10}{10} = \frac{10}{100}$.



Dimes are

$\frac{1}{10}$, one-tenth

of a dollar, or

10%, or 0.1

so $\frac{1}{10} = \frac{10}{100} = 0.1$

Draw the circle representing

Try to make your circle more



precis than mine

Once you've done this work and reflected on it, you will be ready for tomorrow's lesson, when we will use coins to practice finding common denominators and equivalent fractions so that we can add things like $\frac{9}{50} + \frac{125}{500}$ and then simplify to $\frac{?}{100}$, to an answer with 100 ~~as~~ as denominator. This will make your math more nimble, flexible, and adept. For extra credit, tell your parents or your day-school teacher who is on each of the six US coins, including the \$1 coin and why each of those people is important.

Worksheet

Try the problems in the reading component on your own before looking at my answers. Then, Write the Answer to One Quarter plus One Dime as a Fraction. Then do one quarter plus one dime plus one nickel plus one penny. Lastly, try the math problem and the bonus research on page 4.

Extra Practice (video)

<https://www.youtube.com/watch?v=pZwilbnLIXM>

4th Grade Math Week 6 Tuesday: Adding Fractions, Adding Decimals, Adding Money

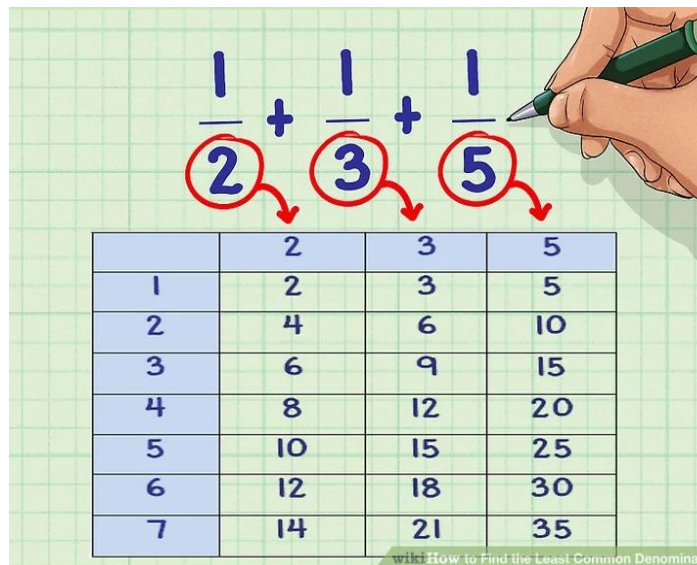
Date:

Tuesday, 5/19

Subject:

Relating Fractions and Decimals

Image:



**Reading
Component:**

① I know what you are thinking. "Why am I adding cents and dollars? That's chump-change compared to the money I'm going to be making."

That's not the point. This is not about money. We are just using money to learn about fractions and decimals. Our world has been damaged, many people have been hurt, and we need your math expertise to help us rebuild. When digging a mine, building a bridge, a tunnel, or a rail line, designing a ship that will float, a plane or space-ship that will fly, or a shoe that will support someone's foot, the most precise measurements, down to the smallest fractions, matter a lot. Here is more practice with fractions. There is practice with decimals on the attached worksheets. Have fun! For the fractions, solve them anyway you know how.

$$\frac{1}{2} + \frac{2}{8} =$$

$$\frac{1}{3} + \frac{66}{100} =$$

$$\frac{1}{1} + \frac{1}{4} =$$

$$\frac{2}{4} + \frac{4}{16} =$$

$$\frac{3}{10} + \frac{1}{4} =$$

$$0.25 = \frac{?}{100} = \frac{?}{8}$$

$$\frac{1}{2} - \frac{1}{4} =$$

$$\frac{3}{4} - \frac{70}{100} =$$

Answer each ?

$$\frac{1}{2} = \frac{?}{100}$$

$$\frac{1}{8} + \frac{1}{4} =$$

$$\frac{9}{20} - \frac{44}{100} =$$

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

$$\frac{7}{32} + \frac{1}{4} =$$

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

$$1 = \frac{?}{2}$$

$$1 - \frac{1}{4} =$$

$$\frac{5}{8} + \frac{6}{16} =$$

$$\frac{1}{4} \times \frac{1}{1} =$$

$$\frac{1}{2} \cdot \frac{50}{50} =$$

$$50\% = \frac{?}{2}$$

$$\frac{1}{2} \times \frac{2}{5} =$$

$$0.99 = \text{what percentage?}$$

$$\frac{2}{3} \times 5 =$$

$$\frac{1}{4} \cdot \frac{25}{25} =$$

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

$$\frac{1}{20} +$$

The dot is the same as "X"; it means "multiply" or "times". We instead of X's because we start using X's for the unknown algebra.

$$\frac{1}{2} \div 3 =$$

$$\frac{9}{50} + \frac{125}{500} =$$

$$\frac{13}{100} + \frac{1}{4} =$$

$$\frac{43}{100} + \frac{14}{200} =$$

$$0.05 + 0.5 =$$

$$\frac{1}{20} + \frac{1}{100} + \frac{1}{10} + \frac{1}{4} =$$

Bonus: Now, can you represent each of these problems with US coins?

Worksheet:

<https://www.math-salamanders.com/image-files/free-math-addition-worksheets-column-money-3-digits-1.gif>
<https://www.math-salamanders.com/image-files/free-math-work-sheets-column-addition-money-3-digits-2.gif>

Extra Practice (video):

<https://www.youtube.com/watch?v=pZwilbnLlXM>

4th Grade Math Week 6 Wednesday: Finding Common Denominators and Doing Algebra at the Same Time

Date:

Wednesday, 5/20

Subject:

Fraction Equivalents, 4th grade algebra

Image

Equivalent Fractions

Rule 1: **Multiplying** the numerator and denominator by the same number.

Rule 2: **Dividing** " " " " " " " "

Write each fraction with a denominator of 24:

$$\frac{3}{4} \cdot \frac{6}{6} = \frac{18}{24} \quad \frac{5}{6} \cdot \frac{4}{4} = \frac{20}{24} \quad \frac{1}{2} = ? \quad \frac{1}{8} = ?$$

Write each fraction with a denominator of 60:

$$\frac{3}{5} \div \frac{12}{12} = \frac{36}{60} \quad \frac{54}{120} \div \frac{2}{2} = \frac{27}{60} \quad \frac{27}{180} \div \frac{3}{3} = \frac{9}{60} \quad \frac{81}{540} = ?$$

**Reading
Component**

$\frac{13}{26} = \frac{?}{2}$ $? = a$ a could be x or y instead. the letter is arbitrary
 Explain each step in video

~~$13 \cdot 2 = 26a$~~
 Yes $13 \cdot 2 = 26a$
 because $a = 1$ but I didn't know that until two steps later.

$\frac{13}{26} = \frac{a}{2}$

$\frac{26}{26} = a$

$\frac{13}{26} = \frac{26/26}{2}$

$\frac{13}{26} = \frac{1}{2}$

Ⓢ This is different from the attached video; both offer food for thought on how to approach the

Worksheet

<https://www.worksheetfun.com/2013/03/08/equivalent-fractions-worksheet/>

**Extra Practice
(video)**

<https://www.youtube.com/watch?v=Eb72wb4dYI8>

4th Grade

Date: Thursday

Subject: Math-(Comparing Fractions)

Image

Comparing Fractions

All fractions have value. You can compare two or more fractions using the following symbols.

Greater Than $>$	Less Than $<$	Equal To $=$
----------------------------	-------------------------	------------------------

Remember these rules when comparing fractions!

Same Numerator	Same Denominator
$\frac{3}{4} > \frac{3}{6}$ The smaller denominator is the greater fraction.	$\frac{3}{5} < \frac{4}{5}$ The larger numerator is the greater fraction.

Different Numerators and Denominators

If you are comparing two fractions with different numerators and denominators, find equivalent fractions with the same denominator.

$$\frac{12}{20} = \frac{4}{5} \times \frac{3}{5} > \frac{2}{4} \times \frac{5}{5} = \frac{10}{20}$$

$\frac{3}{5}$ is greater than $\frac{2}{4}$ because when you multiply to get the common denominator of 20, 12 is greater than 10.

You can also use the butterfly method. Cross multiply and then compare the products. The larger product is the side of the greater fraction.

$$3 \times 4 = 12 \quad \frac{3}{5} > \frac{2}{4} \quad 5 \times 2 = 10$$

12 is greater than 10 so $\frac{3}{5}$ is greater than $\frac{2}{4}$.

Reading Component

https://www.helpingwithmath.com/by_subject/fractions/fra_comparing.htm

Worksheet

<https://docs.google.com/document/d/1RqZ0Tex7NUB6l0Gxo-9VriMLpsyWh3uFnUZ8DYe8QoE/edit?usp=sharing>

Extra Practice (video)

<https://www.youtube.com/watch?v=6PIZ9P5aRWo>

4th Grade	
Date:	Friday
Subject:	Math-(Adding Mixed Numbers)
Image	The diagram illustrates the process of adding mixed numbers. It starts with the expression $1\frac{3}{5} + 2\frac{1}{2}$. An arrow labeled 'convert mixed numbers to fractions' points to the next step, $\frac{8}{5} + \frac{5}{2}$. From there, an arrow labeled 'find LCD and add' points to the equation $\frac{8}{5} + \frac{5}{2} = \frac{16}{10} + \frac{25}{10} = \frac{41}{10}$. Finally, an arrow labeled 'convert back to a mixed number' points to the result $4\frac{1}{10}$.
Reading Component	https://www.splashlearn.com/math-vocabulary/algebra/mixed-number
Worksheet	https://docs.google.com/document/d/1OVEGebzsNsL4M9Rbyj2i9bAno2OHJREFXNcESstYDeQ/edit?usp=sharing
Extra Practice (video)	https://www.youtube.com/watch?v=pxX07gUbIQQ