

Math Session: Fractions, Decimals & Percent

Welcome to my special Introductory Math Class! This class is designed to provide your child with the tools they need to understand how to use math in every day real life. Our goal is for you to have fun with this class, learn something new, and be able to see how math is used in the real world.

During class, I will provide students with clear, easy steps that demonstrate the basic methods of mathematics in a few areas and form a bridge between real life and the new math skills students will learn.

What we're going to cover today:

- Fractions (addition, subtraction, multiplication)
- Decimals (place value, addition, subtraction, multiplication)
- Percent (converting to fractions and decimals, word problems)
- Practical applications for both fractions & decimals

Write down two things you really want to know about MATH (this can be anything you are curious about):

1. _____

2. _____

IMPORTANT: During class, you can either fill out the worksheet, OR just set it aside and fill it out after class is over so you can enjoy watching the class. **Our goal is for you to have fun with this class, learn something new, and be able to see how math is used in the real world.**

Answer key is found on the bonus math page we'll announce near the end of class, so you won't be tempted to peek at the answers until after you've given this your best shot.

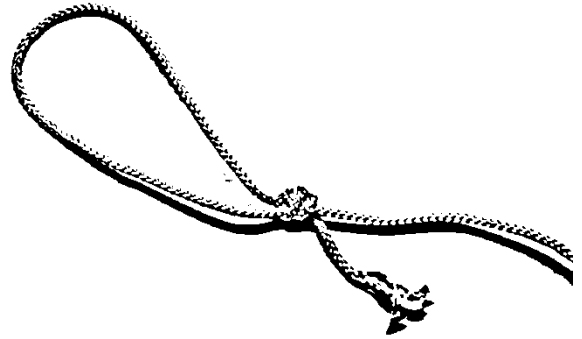
Material List for Class:

We will be working math problems together during class.

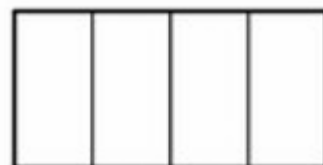
Gather as many of the materials as you can.

(It's fine if you don't have everything.)

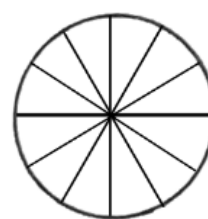
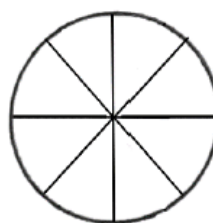
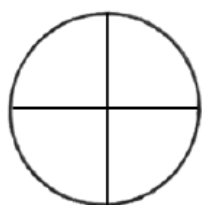
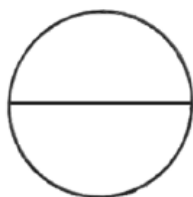
- This packet (print it out)
- Pencil and eraser
- Calculator
- Ruler (inches or cm; we're using the ruler as a straight-edge)
- *Optional:* String, yarn or thin rope:
Cut it to be 3 feet long and make a loop at each end. The loops should be large enough to put their fist through → Students will work in pairs, so you'll need one for each student. If you only have one student, make *two* rope lengths and I'll show you how to do the activity in a special way.



FRACTIONS are numbers that are part of a _____.



$$\frac{3}{4}$$



Multiplying Fractions:

When multiplying fractions, multiply the numbers in the numerator (top) and multiply the numbers in the denominator (bottom):

$$\frac{2}{3} \times \frac{4}{7} = \frac{2 \times 4}{3 \times 7} = \frac{8}{21}$$

Adding and Subtracting Fractions:

When adding or subtracting fractions, the denominators (bottom) *must* match:



$$\frac{1}{3}$$

+



$$\frac{1}{3}$$

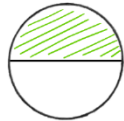
=



$$\frac{2}{3}$$

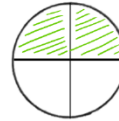
Adding and Subtracting Fractions:

If the denominators do *not* match, scale one (or both) by multiplying the fraction by a form of 1:

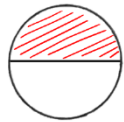


$$\frac{1}{2}$$

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

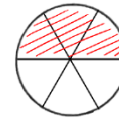


$$\frac{2}{4}$$



$$\frac{1}{2}$$

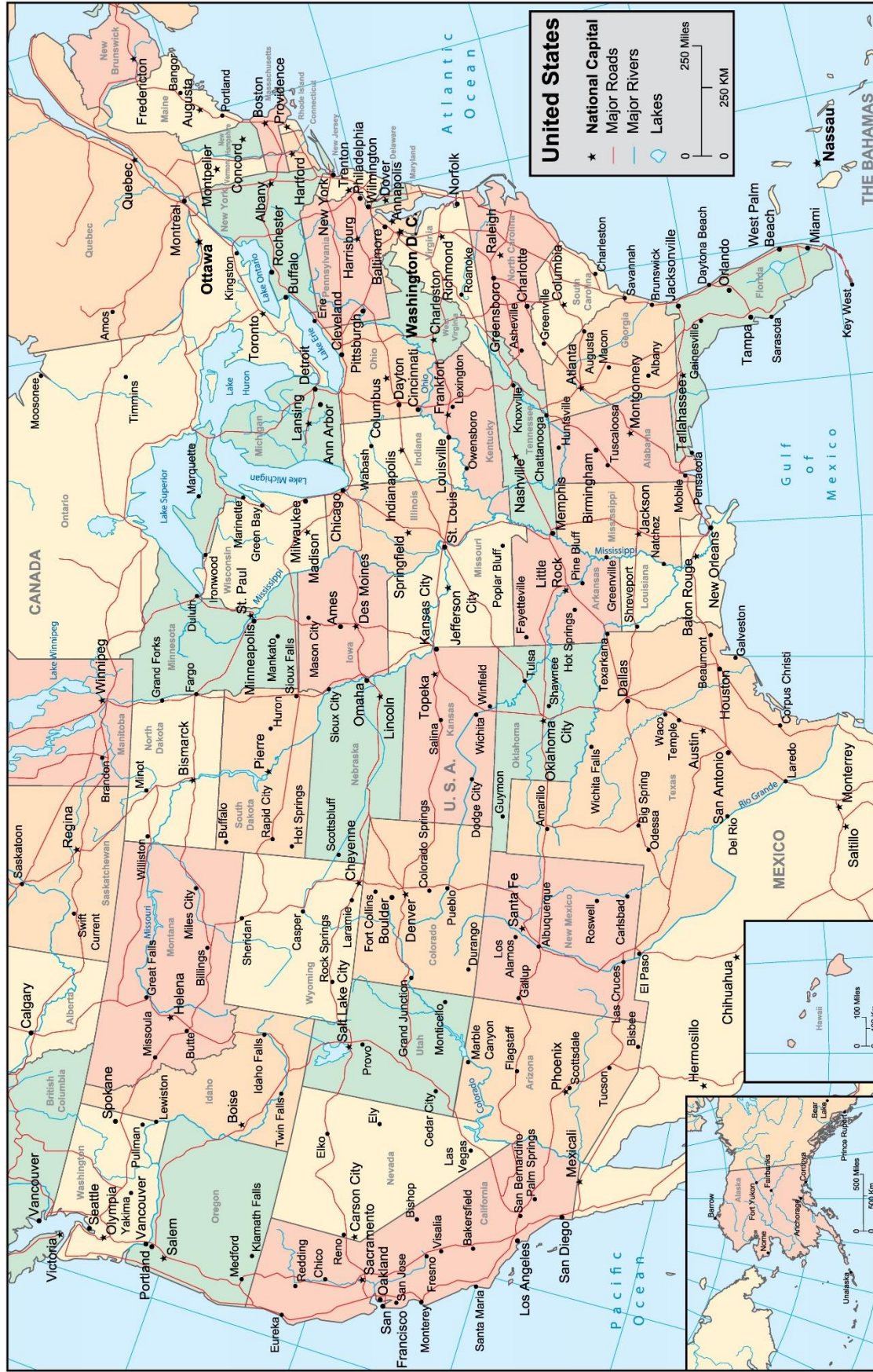
$$= \frac{1 \times 3}{2 \times 3} =$$



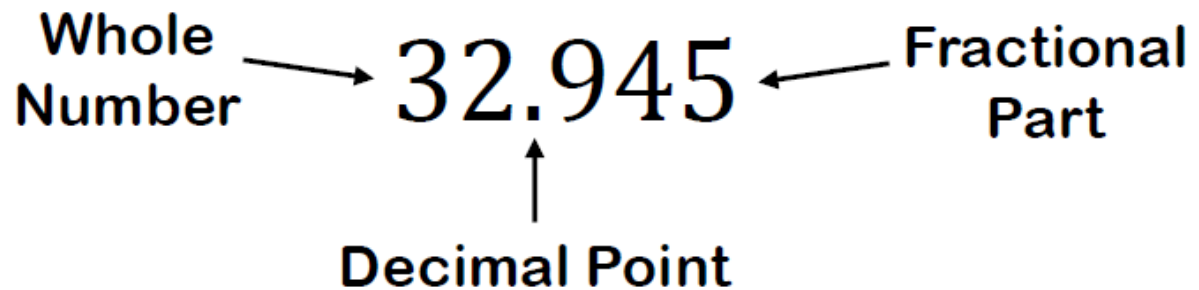
$$\frac{3}{6}$$



When we scale fractions, we are changing the _____ of divisions.



DECIMALS have a whole number part *and* a _____ part separated by a decimal point.



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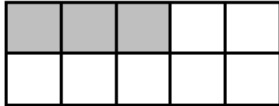
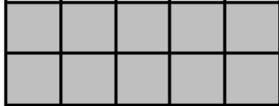





 <p>Here, three tenths ($\frac{3}{10}$) of the shape are shaded.</p>	 <p>In this shape, all ten tenths ($\frac{10}{10}$) are shaded. We can count this shape as <u>one whole</u>.</p>
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Image	Whole	Tenths	Decimal Number
	4	1	4.1
			
			
			
			

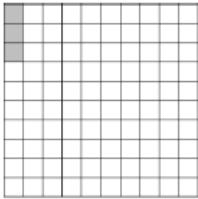
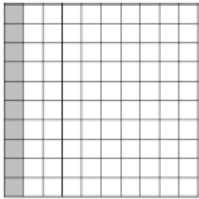
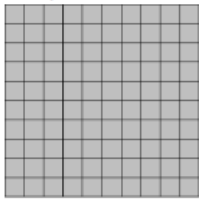
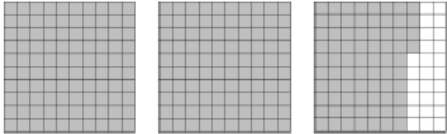
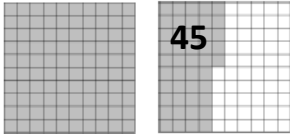
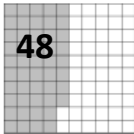
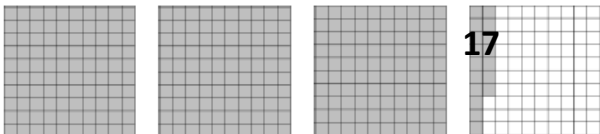
<p>Here, three hundredths ($\frac{3}{100}$) of the shape are shaded.</p> 	<p>When ten hundredths ($\frac{10}{100}$) of the shape are shaded, it is the same as one tenth ($\frac{1}{10}$).</p> 	<p>In this shape, all one hundred hundredths ($\frac{100}{100}$) are shaded. We can count this shape as one whole.</p> 
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Image	Whole	Tenths	Hundredths	Decimal Number
	2	7	4	2.74
				
				
				

Adding Decimals

When adding with decimals, you must line up the decimal points.

$1.2 + 2.4 =$

$$\begin{array}{r} 1.2 \\ + 2.4 \\ \hline 3.6 \end{array}$$

$23.5 + 62.9 =$

$$\begin{array}{r} 23.5 \\ + 62.9 \\ \hline 86.4 \end{array}$$

Adding & Subtracting Decimal Numbers:

You have:

Buy a cookie:

Now you have:

Mom gives you:

Now you have:

Multiplying Decimal Numbers:

$$1.2 \times 3 =$$

$$1.1 \times 5 =$$

$$0.9 \times 2 =$$

$$\begin{array}{r} 36.5 \\ \times 2.4 \\ \hline \end{array}$$

$$\begin{array}{r} 19.8 \\ \times 0.56 \\ \hline \end{array}$$

$$\begin{array}{r} 8.52 \\ \times 4.9 \\ \hline \end{array}$$

Plan a Party!

You earn \$_____ per hour.

You worked _____ hours.

You have \$_____ saved to use.

Cake: _____

Balloons & Streamers: _____

Pizza: _____

Soda: _____

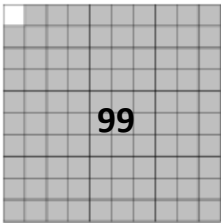
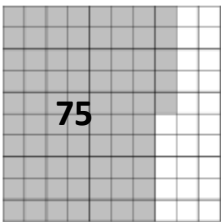
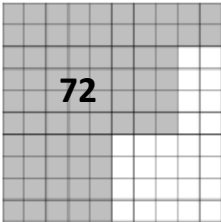
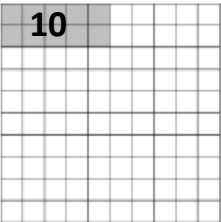
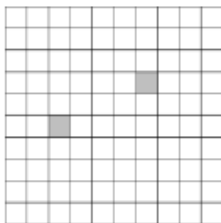
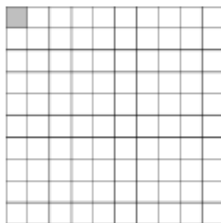
Entertainment:

- Magician: \$150, any size party
- Skate Park: Free, any size party
- Soccer game: \$40 for a coach, up to 20 kids for 90 minutes
- Bounce House: \$250, up to 12 kids
- Laser Tag Rental: \$300, up to 8 people for 60 minutes



Party Planning:

A PERCENTAGE is another way of writing a fraction where the denominator is 100.

 <p style="margin-top: 10px;"> Fraction: $\frac{99}{100}$ Decimal: .99 Percent: 99% </p>	 <p style="margin-top: 10px;"> Fraction: Decimal: Percent: </p>
 <p style="margin-top: 10px;"> Fraction: Decimal: Percent: </p>	 <p style="margin-top: 10px;"> Fraction: Decimal: Percent: </p>
 <p style="margin-top: 10px;"> Fraction: Decimal: Percent: </p>	 <p style="margin-top: 10px;"> Fraction: Decimal: Percent: </p>



What is _____ of _____ ?



What is _____ of _____ ?



What is _____ of _____ ?

Math Resource Recommendations

Math is everywhere, all around us! in the kitchen when you count and measure things for baking cookies. It's in the road trip that you take; the gas you use, the miles you travel, the time it takes to get there. It's having enough money to pay for the things you want and need, and making sure you have enough until your next paycheck. Math is the driving force behind business decisions; how much to charge customers, how much to spend on staff and marketing, how much inventory you can keep and how long you can expect it to stay on the shelves.

After our class ends, you might enjoy some of these resources that I've put together in a list for you. The first thing you'll notice is the list below of mathematicians that really made a contribution. To be honest, there are hundreds (probably thousands) of mathematicians that could be listed here. Instead of overwhelming you with options, I will provide you with a few well-known mathematicians as well as some which may be new to you.

Take this list with you to your local library and see if you can find books, either biographical or historical, and enjoy reading and learning. Also see if you can find an autobiography, because you learn so much more about the person when they share their thoughts and personal story.

I also recommend skimming the bibliography or "suggested reading" list (usually listed near the back of a book). I've read some amazing books this way that I would never have found on my own. It's like following an unknown path through a forest on your nature walk!

List of Mathematicians:

- | | | |
|-----------------|-------------------|-------------------------|
| 1. Archimedes | 6. Blaise Pascal | 11. Alan Turing |
| 2. Eratosthenes | 7. Leonhard Euler | 12. Hypatia |
| 3. Ada Lovelace | 8. Fibonacci | 13. Emmy Noether |
| 4. Carl Gauss | 9. Pythagoras | 14. Srinivasa Ramanujan |
| 5. Euclid | 10. Isaac Newton | 15. Sofia Kovalevskaya |

Book & Resource Recommendations:

1. [Math Dictionary](#) by Judith de Klerk
2. [65 Short Mysteries in Math](#) by Eric Yoder
3. [Dr Wright's Kitchen Table Math](#) by Christ Wright
4. [Codes, Ciphers & Secret Writing](#) by Martin Gardner
5. [Sideways Arithmetic at Wayside School](#) by Louis Sachar
6. [Secrets of Mental Math](#) by Arthur Benjamin
7. [Go Figure!](#) by Johnny Ball
8. [Turing Tumble Binary Marble Computer](#) by Upper Story

