



Today's Notes

Unit 1: Number Sense & Quantity

Learning Goal #1.3: Operations & Applications of Decimals

After completion of this unit, you will be able to...

Learning Target #3: Operations with Decimals

- Understand Place Value
- Round and Compare Decimals
- Multiply and Divide by Powers of 10
- Apply Operations Decimals using real world applications

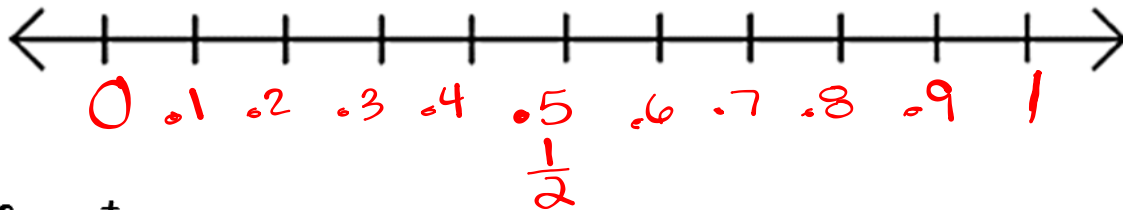
Timeline for Unit 1

Monday	Tuesday	Wednesday	Thursday	Friday
			15 th Day 9 1.2 Assessment; Place Value & Rounding	16 th Day 10 Comparing and Real World Applications with Decimals
19 th Day 11 Multiplying and Dividing by Powers of 10	20 th Day 12 1.3 Assessment; Intro to Percents	21 th Day 13 Percents on a Number Line	22 th Day 14 Percents of a Number EquationS	23 rd Day 15 1.4 Assessment

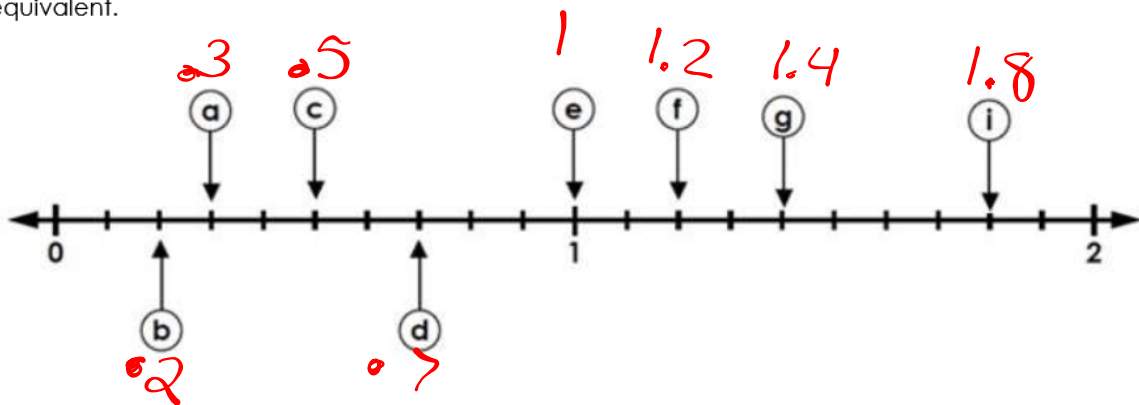
	Monday	Tuesday	Wednesday	Thursday	Friday
AM	NONE	NONE	Mr. Webb 7:45 – 8:15 Room 1205	Mr. Watson 7:45 – 8:15 Room 1208	Mr. Watson 7:45 – 8:15 Room 1208
PM	Mrs. Petersen 3:30 – 4:30 Room 1210	Mr. Webb 3:30 – 4:30 Room 1205	Mrs. Jackson 3:30 – 4:30 Room 1210	Mrs. Jackson 3:30 – 4:30 Room 1210	NONE

Day 10: Place Value

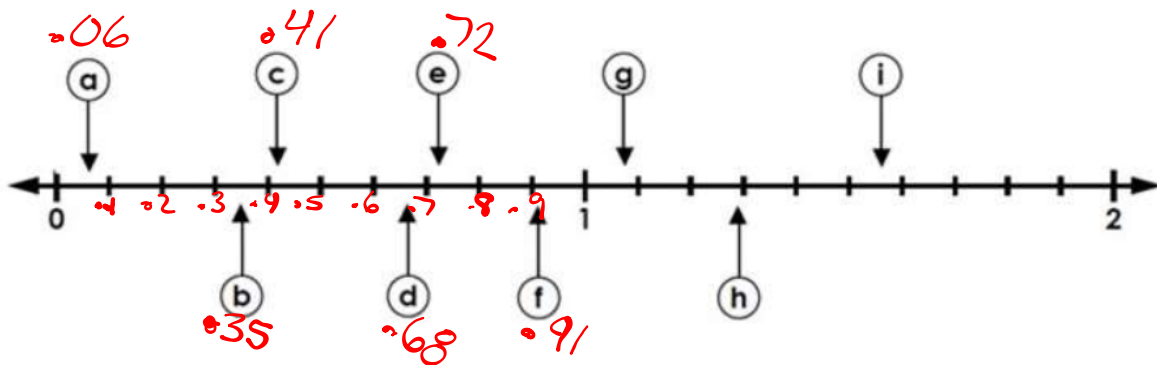
Decimals are one of the ways to show parts of a whole. A **decimal** is a number that is written in a system based on multiples of 10 or a **base 10 system**. The decimal separates the whole amount from the decimal part of a number. Decimals can be derived from fractions!



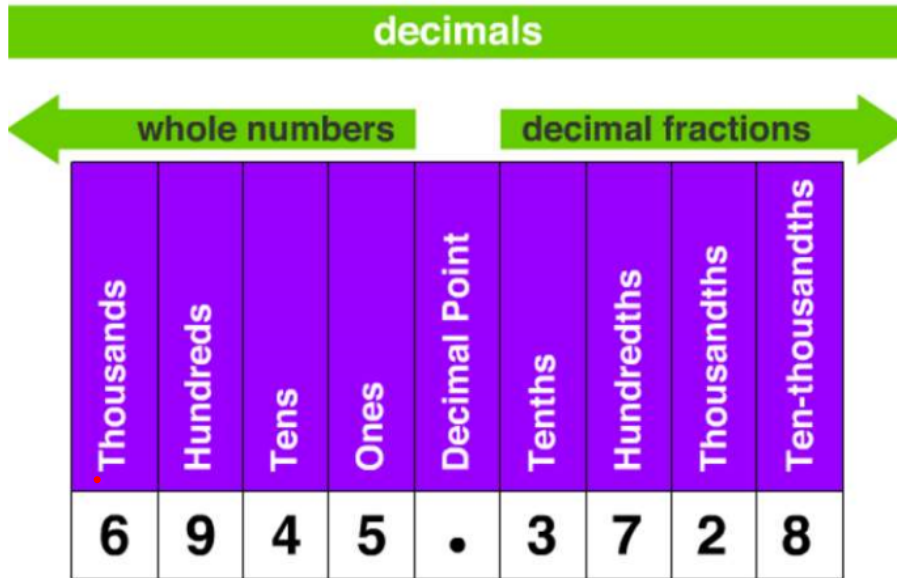
Connect: Name the following decimals on the given number line. Then give their fraction equivalent.



Connect: Estimate the following decimals on the given number line.



Our Base 10 System



Each place is 10 times larger than the place to its right.

© Jenny Eather 2014

Thousands	Hundreds	Tens	Ones	Decimal Point	Tenths	Hundredths	Thousandths
When I multiply by factors of 10 , the decimal moves <u>Right</u>							
1000	100	10	1	.	0.1	0.01	0.001
1000	100	10	1	.	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$
When I divide by factors of 10 , the decimal moves <u>Left</u>							

Foundations of Algebra

Unit 1: Number Sense & Quantity

Notes

Use the place value chart to answer the following questions. Express the value of the digit in unit form.

hundreds	tens	ones	.	tenths	hundredths
4	1	6		8	3

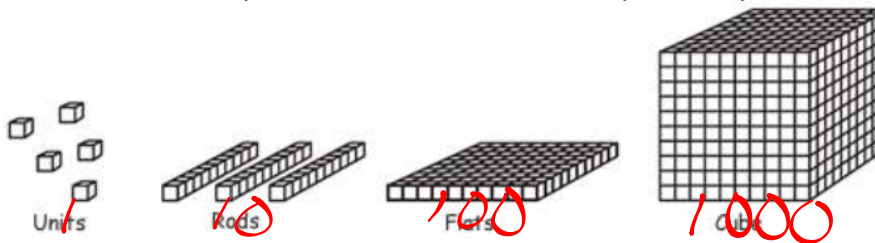
- a. The digit 8 is in the hundreds place. It has a value of 0.8.
- b. The digit 3 is in the tens place. It has a value of 0.03.
- c. The digit _____ is in the tenths place. It has a value of _____.
- d. The digit _____ is in the hundredths place. It has a value of _____.

hundreds	tens	ones	.	tenths	hundredths
5	3	2		1	6

- e. The digit 1 is in the hundreds place. It has a value of 0.1.
- f. The digit 6 is in the tens place. It has a value of 0.06.
- g. The digit _____ is in the tenths place. It has a value of _____.
- h. The digit _____ is in the hundredths place. It has a value of _____.

Using Base 10 Blocks

We can also use base ten blocks to represent decimals. The value of the base ten blocks depends on what you consider the whole amount (whole = 1)



Foundations of Algebra



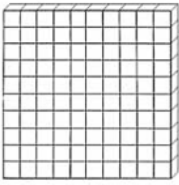
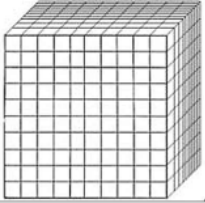


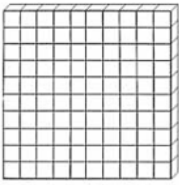
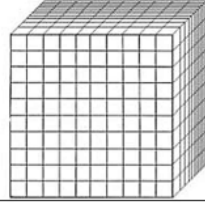
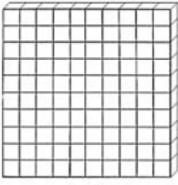


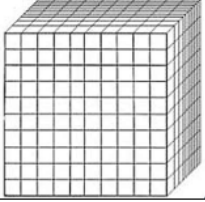
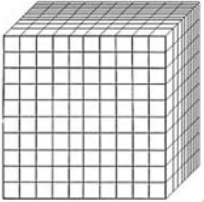
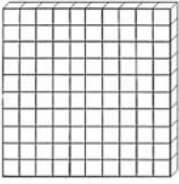


Unit I: Number Sense & Quantity

Notes

Practice: Determine what number makes the following statements equivalent using base ten blocks:

- a. 1 ten = 10 ones
- b. 1 hundred = 10 tens
- c. 1 thousand = 10 hundreds
- d. 4 tens = 40 ones
- e. 6 hundreds = 60 tens
- f. 3 thousands = 30 hundreds
- g. 4 hundreds = 400 ones
- h. 2 thousands = 2000 ones
- i. 5 ones = .5 tens
- j. 5 tens = .5 hundreds
- k. 5 hundreds = .5 thousands
500 / 1000
- l. 4 ones = .4 tens
4 / 10
- m. 8 ones = .8 tens
- n. 7 tens = .007 thousands
- o. 9 ones = .009 thousands

Stretch Your Brain

If the whole is...	Then	Then	Then
 = 1	 = <u>10</u>	 = <u>100</u>	 = <u>1000</u>
 = 1	 = <u>.1</u>	 = <u>10</u>	 = <u>100</u>
 = 1	 = <u>.1</u>	 = <u>.01</u>	 = <u>10</u>
 = 1	 = <u>.1</u>	 = <u>.01</u>	 = <u>.001</u>

Additional Practice

Foundations of Algebra
Day 8: Place Value
Practice Assignment

Unit 1: Number Sense & Quantity

Practice

Name: _____

0 25 50 75 100

1. Use the place value chart to answer the following questions. Express the value of the digit in unit (fraction) form.

hundreds	tens	ones	.	tenths	hundredths
8	2	7		6	4

- a. The digit _____ is in the hundreds place. It has a value of _____.
- b. The digit _____ is in the tens place. It has a value of _____.
- c. The digit _____ is in the tenths place. It has a value of _____.
- d. The digit _____ is in the hundredths place. It has a value of _____.

hundreds	tens	ones	.	tenths	hundredths
3	4	5		1	9

- e. The digit _____ is in the hundreds place. It has a value of _____.
- f. The digit _____ is in the tens place. It has a value of _____.
- g. The digit _____ is in the tenths place. It has a value of _____.
- h. The digit _____ is in the hundredths place. It has a value of _____.

2. Fill in the blank to make the sentence true for both fraction form and decimal form.

- a. $\frac{8}{10}$ cm + _____ cm = 1 cm 0.8 cm + _____ cm = 1.0 cm
- b. $\frac{2}{10}$ cm + _____ cm = 1 cm 0.2 cm + _____ cm = 1.0 cm
- c. $\frac{6}{10}$ cm + _____ cm = 1 cm 0.6 cm + _____ cm = 1.0 cm

3. Write the following decimals in fraction form:

a. 2.6

b. 3.7

c. 4.23

d. 5.67

e. 0.33

Foundations of Algebra

Unit 1: Number Sense & Quantity

Practice

4. Write the following fractions in decimal form:

a. $\frac{4}{10}$

b. $\frac{43}{100}$

c. $\frac{45}{10}$

d. $\frac{84}{100}$

e. $\frac{75}{10}$

5. Give the total amount of money in decimal form:

a. 3 dimes and 8 pennies

b. 8 dimes and 23 pennies

c. 3 quarters, 3 dimes, & 5 pennies

6. Emmanuel has 6 dimes and 2 pennies. Emilio has 1 dollar, 3 dimes, and 5 pennies. Ryan has 5 dollars and 7 pennies. They want to put their money together to buy a game that costs \$8.00. Do they have enough money to buy the game? If not, how much more do they need?

7. Taylyn has 7 dollars and 32 cents. Aaliyah has 3 dollars and 4 cents. How much money does Taylyn need to give to Aaliyah so they each have the same amount of money?

8. A pen costs \$2.25. A binder costs three times as much. How much does the pen and binder cost in total?

9. **Review** - Classify the following numbers using the most specific classification possible.

a. -6

b. 0

c. 5.67

d. $-\frac{1}{4}$ e. $\sqrt{12}$

f. 4.5201...

g. 10