Howdy!!!!

Coach Watson

FOA

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Jan 5-3:51 PM

Foundations of Algebra
Day 9: Rounding, Plotting, & Comparing Decimals

Unit 1: Number Sense & Quantity

Name: **Key**   Practice
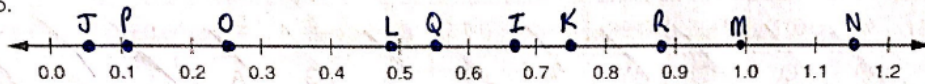
Practice Assignment

0   25   50   75   100

1. Mark the appropriate locations of the decimals and fractions on the number lines below. Rename the fractions as decimals if necessary.

a.

G   A   C H   D   F   B   E

0.0   0.25   0.5   0.75   1   1.25   1.5   1.75   2
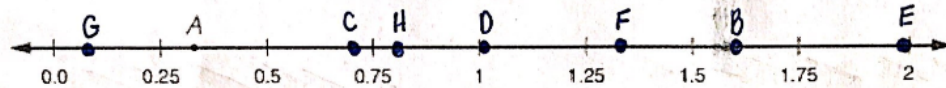
A 0.33   B 1.6   C 0.7   D 1.01

E 1.99   F 1.33   G 0.1   H 0.8

b.

J P   O   L Q   I K   R   M   N

0.0   0.1   0.2   0.3   0.4   0.5   0.6   0.7   0.8   0.9   1.0   1.1   1.2

I 0.67   J 0.05   K $\frac{75}{100}$ = .75   L 0.49   M 0.99

N 1.15   O $\frac{25}{100}$ = .25   P 0.101   Q 0.55   R 0.88

2. Compare the following numbers using <, >, or =:

a. 16.450	<	16.454
b. 0.83	=	$\frac{83}{100}$ = .83
c. $\frac{205}{1000}$ = .205	=	0.205
d. 95.045	<	95.545
e. 419.100	>	419.099
f. Five ones and eight tenths 5.8	>	Fifty-eight tenths .58
g. Thirty-six and nine thousandths 36.009	<	Four tens 40
h. One hundred four and twelve hundredths 104.12	>	One hundred four and two thousandths 104.002
i. One hundred fifty-eight thousandths .158	<	0.580
j. 703.005	<	Seven hundred three and five hundredths 703.050

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Foundations of Algebra   Unit 1: Number Sense & Quantity   Practice

3. Order the decimals in order from least to greatest.

a. 7.35, 9.45, 7.2, 7.94, 9.04, 9.72

   7.2, 7.35, 7.94, 9.04, 9.45, 9.72

b. 0.553, 0.53, 0.053, 0.35, 0.55, 0.035

   0.035, 0.053, 0.35, 0.55, 0.553

c. 2.13, 2.561, 2.098, 2.56, 2.375, 2.36

   2.098, 2.13, 2.36, 2.375, 2.561, 2.56

d. -5.6, -4.2, -5.75, -5.62, -4.02, -4.29

   -5.75, -5.62, -5.6, -4.29, -4.2, -4.

4. What's green on the inside, white on the outsides, and hops? Put the numbers in order from least to greatest to find out.

0.66	1	0.2	1.05	0.90	0.01	0.75	0.35	$\frac{25}{100}$ .25	$\frac{50}{100}$ .50	0.05	0.09	5.5
N	I	O	C	W	A	D	S	G	A	F	R	H

Write your answers in the following table. The first answer is done for you.

0.01	0.05	0.09	0.2	$\frac{25}{100}$	0.35	$\frac{50}{100}$	0.66	0.75	0.90	1	1.05	5.5
A	F	R	O	G	S	A	N	D	W	I	C	H

5. Round the following numbers to the stated place value:

a. 37.823; hundredths

   37.82

b. 89.7267; hundredths

   89.73

c. 724.62; ones

   725

d. 27.93; tens

   30

e. 298.49; tenths

   298.5

f. 893.2785; hundredths

   893.28

g. 2383.982; hundreds

   2400

h. 423.99; tenths

   424

6. A decimal has two digits to the right of its decimal point. If we round to the nearest tenth, the result is 13.7.

   a. What is the maximum possible value of what the original number was? 13.74

   b. What is the minimum possible value of what the original number was? 13.65

7. A root beer factory produces 132,554 cases in 100 days. About how many cases does the factory produce in 1 day? Round your answer to the nearest case.
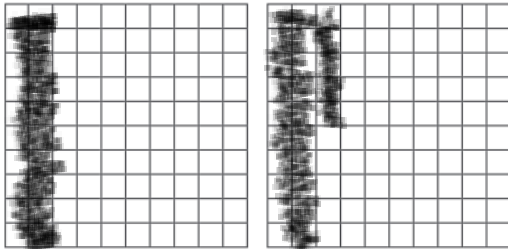
   $\frac{132,544}{100}$ = 1325.44 or 1325 cases

Foundations of Algebra   Unit I: Number Sense & Quantity   Notes
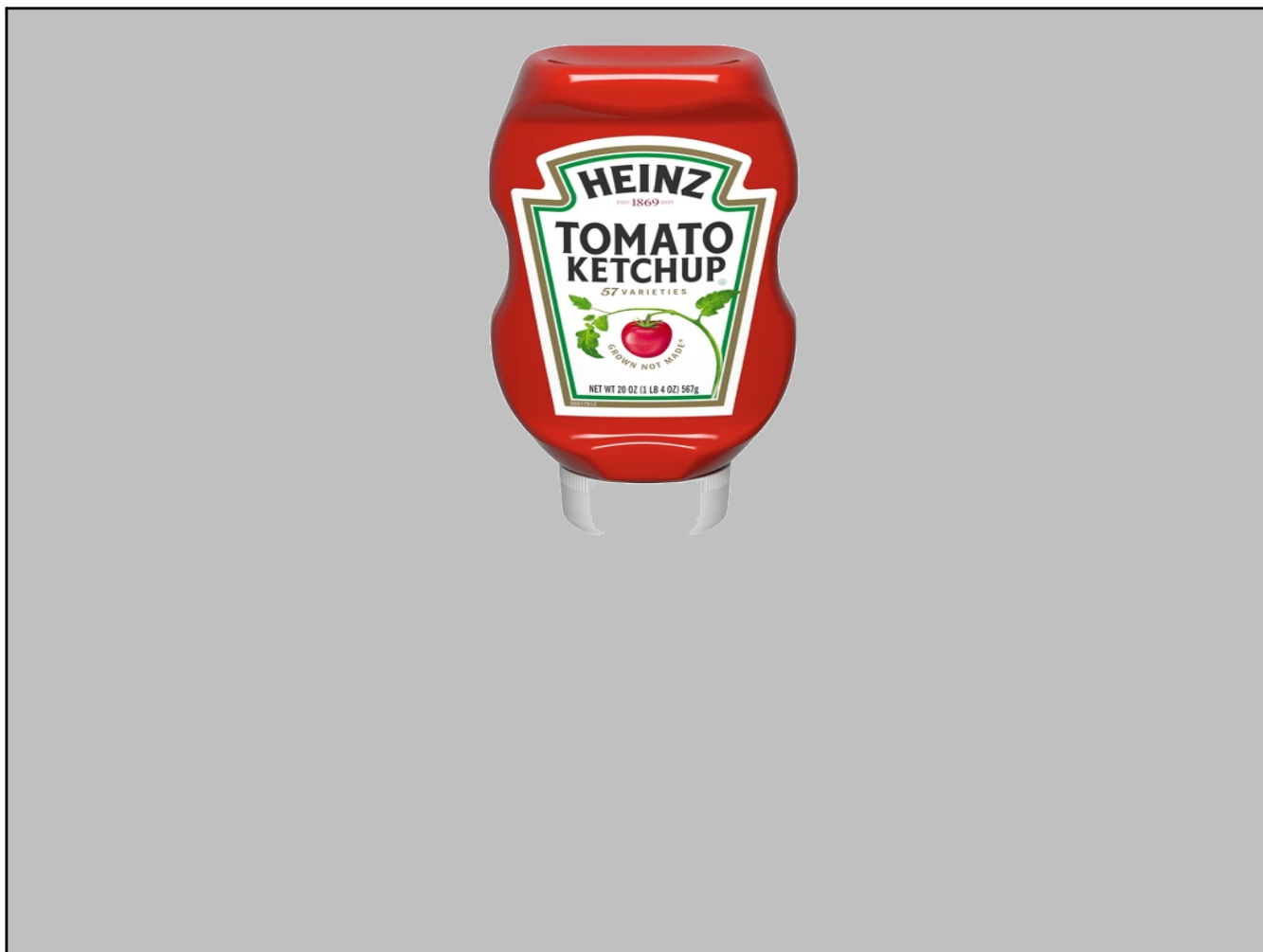
Comparing and Ordering Decimals

You can use your base ten block to help you determine if numbers are <, >, or = to each other.

a. 0.2 _____<_____ 0.25
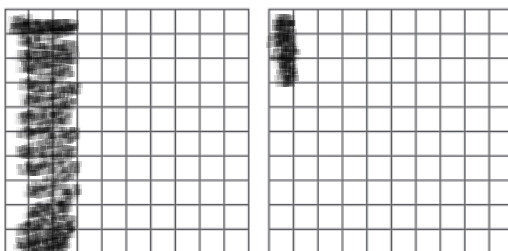
b. 0.3 _____>_____ 0.03

c. 0.3 _____=_____ 0.30

Inequality Signs

< less than

> greater than

= equal

Practice Comparing Decimals

0.32 _____>_____ 0.30

0.999 _____<_____ 1.0

0.6 _____>_____ 0.09

3.48 _____>_____ 3.4

-1.6 _____<_____ -1.45

-0.87 _____<_____ -0.865

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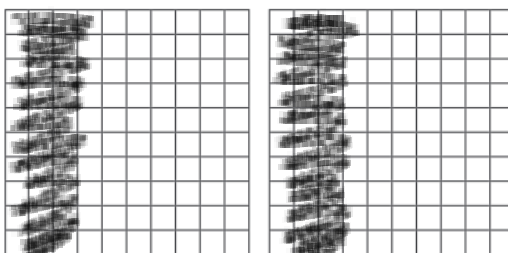
Ordering Integers, Fractions, and Decimals

When ordering integers, fraction, and decimals, it is helpful to use benchmark fractions and decimals, in addition to converting all your numbers so they are in the same form. Some fractions are easily convertible to decimals, some fractions are important fractions that can be memorized, and some fractions you will have to convert to decimals using a calculator. Let's look at the three types:

Decimal Fractions	Important Fractions	Fractions to use with a Calculator
Decimal Fractions are fractions whose denominators are 10, 100, and 1000. Their decimal form is how you say the fraction properly.	Common fractions are fractions that occur frequently through math. The following list are common fractions that if you know their decimal equivalency, it can be extremely beneficial.	Fractions to determine with a calculator are essentially every other type of fraction. To enter them into your calculator, enter the numerator divided by the denominator.

$\frac{7}{10} = .7$

$\frac{56}{100} = .56$

$\frac{173}{1000} = .173$

$\frac{63}{1000} = .063$

$\frac{3}{100} = .03$

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

$\frac{1}{3} = .\overline{33}$ $\frac{2}{3} = .67$

$\frac{1}{4} = .25$ $\frac{3}{4} = .75$

$\frac{1}{5} = .20$ $\frac{2}{5} = .4$ $\frac{3}{5} = .60$ $\frac{4}{5} = .80$

$\frac{7}{8} =$ (crossed out)

$\frac{13}{15} =$ (crossed out)

$\frac{2}{7} =$ (crossed out)

$\frac{5}{18} =$ (crossed out)

Fractions You Can Convert to Decimals by Scaling Up

If the denominator can be scaled up or down to a power of 10 (10, 100, 1000), it makes it easy to convert to a decimal.

a. $\frac{6}{25}$ ×4   b. $\frac{2}{5}$ ×2   c. $\frac{24}{200}$ ÷2   d. $\frac{36}{50}$ ×2   e. $\frac{9}{20}$ ×5

$\frac{24}{100}$ $\frac{4}{10}$ $\frac{12}{100}$ $\frac{72}{100}$ $\frac{45}{100}$

.24   .40   .12   .72   .45

Practice: Order the following numbers in order from least to greatest:

a. $\frac{43}{100}$, $6\frac{2}{5}$, 3.4, $\frac{40}{10}$, -.67, (-4), $1\frac{3}{4}$

.43   6.40   3.4   1.75

−4, −.67, .43, 1.75, 3.38, 3.4, 6.40, 6.45

b. -2.6, -0.7, $\frac{978}{1000}$, $1\frac{7}{20}$, -2.34, $\frac{2}{10}$, $4\frac{3}{5}$, $\frac{3}{20}$

c. $\frac{3}{8}$, $\frac{3}{11}$, $\frac{3}{9}$, $\frac{3}{2}$, $\frac{3}{4}$, $\frac{3}{7}$, $\frac{3}{5}$

$\frac{3}{11}$, $\frac{3}{9}$, $\frac{3}{8}$, $\frac{3}{7}$, $\frac{3}{5}$, $\frac{3}{4}$, $\frac{3}{2}$

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Foundations of Algebra   Unit I: Number Se...   Notes

Real World Scenario: Coach Hubinger asked ... 400 meter dash.

Taylor recorded the times in the table as shown. List the runner's times in order from fastest to slowest. Who won the race?

Runner	Time (seconds)
1	53.18
2	53.09
3	53.01
4	54.13
5	52.18
6	53.75
7	51.28
8	53.99
9	52.99
10	56.98

Runner	Time (seconds)
7	
5	
9	
3	
2	
1	
6	
8	
4	
10	

...did you decide which decimal was the fastest? How did you determine the person with the next ...
time?

Real World Scenario: A trip fr... w York to Seattle is 2852.1 m... family wants to make the drive in
10 days, driving the sam... ...er of miles each day. About how many miles will ... ...e each day? Round your answer to t... ...rest mile.

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Todays Notes

Jul 30-4:21 PM

Foundations of Algebra   Unit I: Number Sense & Quantity   Notes

Day 12: Multiplying & Dividing by Powers of 10

Consider the following tables and use them to answer the following questions:

a. $4.582 \times 10 =$ ___45.82___

b. $3.452 \times 100 =$ _____

c. $9.254 \times 1,000 =$ _____

Practice: Multiply the following numbers mentally:

a. $1 \times 10 =$ __10__

b. $3 \times 10 =$ __30__

c. $40 \times 10 =$ __400__

d. $67 \times 10 =$ __670__

e. $5 \times 100 =$ __500__

f. $34 \times 100 =$ __3400__

g. $670 \times 100 =$ __67000__

h. $781 \times 10 =$ __7810__

i. $0.4 \times 10 =$ __4__

j. $8.2 \times 10 =$ __82__

k. $9.8 \times 100 =$ __980__

l. $17.8 \times 10 =$ __178__

m. $45.6 \times 100 =$ __4560__

n. $176.3 \times 10 =$ __1763__

o. $32.5 \times 1000 =$ __32500__
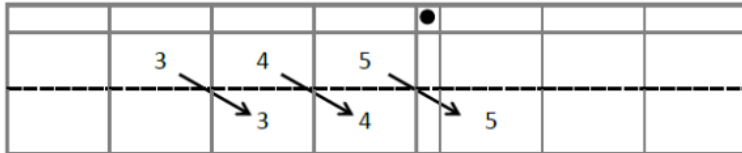
p. $0.2 \times 10 =$ __2__

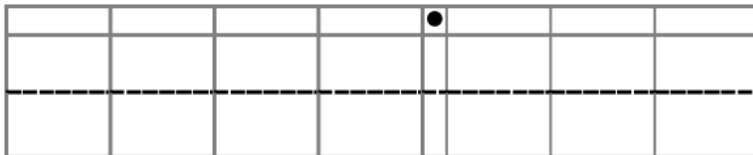Describe a rule for multiplying by a factor of 10:

move decimal to the right by how many zeros there are

Foundations of Algebra   Unit I: Number Sense & Quantity   Notes
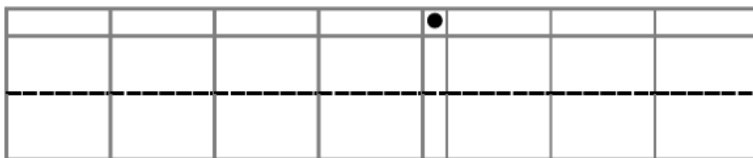
Dividing by Powers of 10

a. $345 \div 10 = \underline{\ 34.5\ }$

b. $678 \div 100 = \underline{\hspace{2cm}}$

c. $345 \div 1{,}000 = \underline{\hspace{2cm}}$

Practice: Divide the following numbers mentally:

a. $1 \div 10 = \underline{.1}$ b. $3 \div 10 = \underline{.3}$ c. $40 \div 10 = \underline{4}$ d. $67 \div 10 = \underline{6.7}$

e. $5 \div 100 = \underline{.05}$ f. $34 \div 100 = \underline{.34}$ g. $670 \div 100 = \underline{6.7}$ h. $781 \div 10 = \underline{78.1}$

i. $0.4 \div 10 = \underline{.04}$ j. $8.2 \div 10 = \underline{.82}$ k. $9.8 \div 100 = \underline{.098}$ l. $17.8 \div 10 = \underline{1.78}$

m. $45.6 \div 100 = \underline{.456}$ n. $176.3 \div 10 = \underline{17.63}$ o. $32.5 \div 1000 = \underline{.0325}$ p. $0.2 \div 10 = \underline{.02}$

Describe a rule for dividing by a factor of 10:

move decimal to the left by the # of zeros

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Foundations of Algebra   Unit I: Number Sense & Quantity   Notes

Explore More Patterns with Powers of 10

Directions: Multiply/divide the following numbers:

$3 \times 10 = 30$
$3 \div .1 = 3 \times 10 = 30$

1.   a. 3 x 10 = __30__   b. 3 ÷ 0.1 = __30__

2.   a. 456 ÷ 100 = __4.56__   b. 456 x 0.01 = __4.56__

3.   a. 67 x 100 = __6700__   b. 67 ÷ 0.01 = __6700__

4.   a. 872 x 10 = __8720__   b. 872 ÷ 0.1 = __8720__

5.   a. 34 ÷ 10 = __3.4__   b. 34 x 0.1 = __3.4__

6.   a. 386 ÷ 100 = __3.86__   b. 386 x 0.01 = __3.86__

What did you notice?
they are
the same

Relationships between Multiplying & Dividing by Powers of 10

Multiplying by 1000 = Dividing by _____

Multiplying by 100 = Dividing by _____

Multiplying by 10 = Dividing by _____

Multiplying by 0.1 = Dividing by _____

Multiplying by 0.01 = Dividing by _____

Multiplying by 0.001 = Dividing by _____

Explore Even More Patterns with Powers of 10!

Directions: Fill in the missing blanks and then describe the rule(s):

a. 0.03   0.3   __3__   30   __300__   3000   Rule: __×10__

b. __.075__   7.5   750   75,000   __7,500,000__   Rule: __×100__

c. __94300__   9,430   __943__   94.3   9.43   __.943__   Rule: __÷10__

d. 320   __32__   3.2   __.32__   __.032__   Rule: __÷10__

How did you determine the next numbers in your pattern:

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$$5 \times 10 = 50$$

$$5 \div .1 = 5 \times 10 = 50$$

$$687 \div .01 = 687 \times 100 = 68700$$

$$8.2 \div .01 = 8.2 \times 100 = 820$$

$$9.4 \times .1 = 9.4 \div 10 = .94$$

Additional Practice

Foundations of Algebra   Unit 1: Number Sense & Quantity   Practice
Day 12: Powers of 10   **Name:** _____

Practice Assignment   0   25   50   75   100

1. Use a place value chart and arrows to show how the value of each digit changes:

   a. $6.671 \times 100 =$ _____

				●			

   b. $684 \div 1{,}000 =$ _____

				●			

2. A student used his place value chart to show a number. After the teacher instructed him to multiply his number by 10, the chart showed 3,200.4. What was his original number? Draw a picture of what the place value chart looked like at first (if you need it). Draw a picture of what the place value chart looked like at first. Explain how you determined what the original number was.

				●			

3. A student used his place value chart to show a number. After the teacher instructed him to divide his number by 100, the chart showed 28.003. What was his original number? Draw a picture of what the place value chart looked like at first (if you need it). Explain how you determined what the original number was.

				●			

4. Solve the following problems without a calculator:

   a. $54{,}000 \times 10 =$ _____   b. $2{,}000 \div 100 =$ _____

   c. $0.13 \times 10 =$ _____   d. $8.7 \div 10 =$ _____

   e. $3.12 \times 1{,}000 =$ _____   f. $4{,}031.2 \div 100 =$ _____

Foundations of Algebra   Unit 1: Number Sense & Quantity   Practice

5. Rewrite the following problems so that it is easier to solve mentally. Then solve your new problem mentally.

    a. 451 x 0.1 → _____

    b. 84 ÷ 0.01 → _____

    c. 6,300 ÷ 0.1 → _____

    d. 4.5 ÷ 0.001 → _____

    e. 57.8 x 0.01 → _____

    f. 239.4 x 0.001 → _____

6. Evaluate the following problem. Rewrite if necessary.

    a. 0.873×10^3 = _____

    b. 0.61×10^1 = _____

    c. $12.38 \div 10^2$ = _____

    d. $36 \div 10^3$ = _____

    e. 6.94×10^2 = _____

7. A manufacturer made 7,234 boxes of coffee stirrers. Each box contains 1,000 stirrers. How many stirrers did they make?

8. A microscope has a setting that magnifies an object so that it appears 100 times as large when viewed through the eyepiece. If a tiny insect is 0.095 cm long, how long will the insect appear in centimeters through the microscope?

9. Sarah has 400 pennies and 30 dimes. How much money does she have?