

MSP

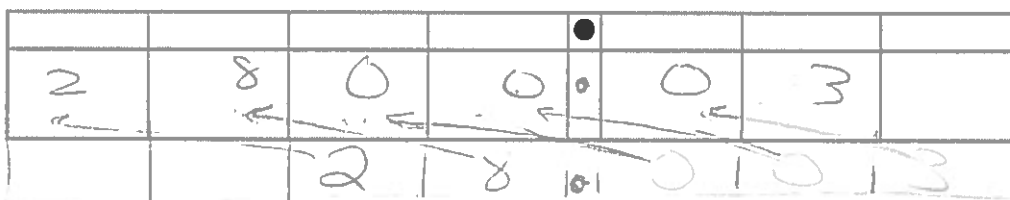
Grade 5 Module 1

Lesson Refreshers

&

Homework Starters

3. Researchers counted 8,912 monarch butterflies on one branch of a tree at a site in Mexico. They estimated that the total number of butterflies at the site was 1,000 times as large. About how many butterflies were at the site in all? Explain your thinking, and include a statement of the solution.
4. 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. Draw a picture of what the place value chart looked like at first.



Explain how you decided what to draw on your place value chart. Be sure to include reasoning about how the value of each digit was affected by the division.

If the answer has been divided by 100 in order to get the original number you need to do the opposite operation, which is multiplication. So the chart will show each digit moving 2 places values to the left because each place value represents the multiple of 10. Moving 1 place value is 10, moving 2 place values is 100.

5. On a map, the perimeter of a park is 0.251 meters. The actual perimeter of the park is 1,000 times as large. What is the actual perimeter of the park? Explain how you know using a place value chart.

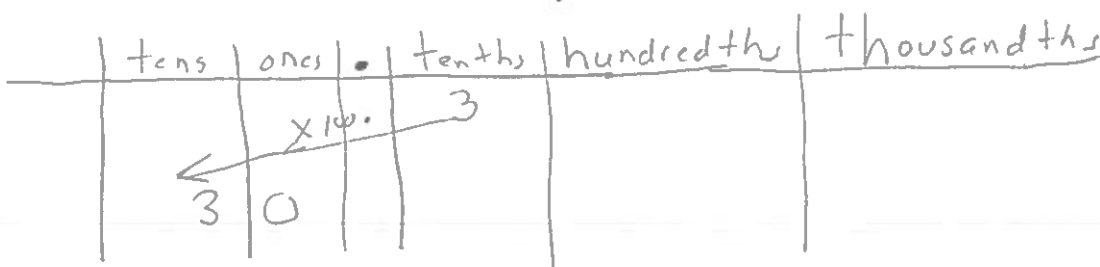
3. Find the quotients.

a. $16.5 \div 10 =$ _____

b. $16.5 \div 100 =$ _____

c. Explain how you decided where to place the decimal in the quotients for (a) and (b).

4. Ted says that 3 tenths multiplied by 100 equals 300 thousandths. Is he correct? Use a place value chart to explain your answer. *no* $.3 \times 100 = 30$



P.K

5. Alaska has a land area of about 1,700,000 square kilometers. Florida has a land area $\frac{1}{10}$ the size of Alaska. What is the land area of Florida? Explain how you found your answer.

Name _____

Date _____

1. Write the following in exponential form and as a multiplication sentence using only 10 as a factor (e.g., $100 = 10^2 = 10 \times 10$).

a. 1,000 = _____ = _____

b. $100 \times 100 =$ _____ = _____

2. Write the following in standard form (e.g., $4 \times 10^2 = 400$).

a. $3 \times 10^2 =$ _____

c. $800 \div 10^3 =$ _____

b. $2.16 \times 10^4 =$ _____

d. $754.2 \div 10^2 =$ _____

a) 3×10^2
 $3 \times \underbrace{10 \times 10}_{2 \text{ zeros}}$
 3×100
300

c) $800 \div 10^3$
 $800 \div \underbrace{10 \times 10 \times 10}_{3 \text{ zeros}}$
 $800 \div 1000$
 ~~$800 \div 1000 = 0.8$~~

b) 2.16×10^4
 $2.16 \times \underbrace{10 \times 10 \times 10 \times 10}_{4 \text{ zeros}}$
 $2.16 \times 10,000$

$8 \div 10 =$

8	÷	10	=	0.8
8		10	=	80
80		10	=	8
80		10	=	8

d) $754.2 \div 10^2$
 $754.2 \div \underbrace{10 \times 10}$
 $754.2 \div 100 =$

$216 \times 10,000,000$
 $216 \times 1,000,000,000$
216,000,000 6 zeros

move to right for multiplication.

move to left for division.

K Sami

Name _____

Date _____

1. Convert and write an equation with an exponent. Use your meter strip when it helps you.

- a. 2 meters to centimeters $2\text{m} = 200\text{ cm}$ $2 \times 10^2 = 200$
- b. 108 centimeters to meters $108\text{ cm} = \underline{10.8}\text{ m}$ $10.8 \div 10^2 = 10.8$
- c. 2.49 meters to centimeters $2.49\text{ m} = 249\text{ cm}$ $2.49 \times 10^2 = 2.49$
- d. 50 centimeters to meters $50\text{ cm} = .50\text{ m}$ $50 \div 10^2 = 500$
- e. 6.3 meters to centimeters $6.3\text{ m} = 630\text{ cm}$ $6.3 \times 10^2 = 6.3$
- f. 7 centimeters to meters $7\text{ cm} = 700\text{ m}$ $7 \times 10^2 = 700$ PK.
- g. In the space below, list the letters of the problems where smaller units are converted to larger units.

2. Convert using an equation with an exponent. Use your meter strip when it helps you.

- a. 4 meters to millimeters _____ m = _____ mm _____
- b. 1.7 meters to millimeters _____ m = _____ mm _____
- c. 1,050 millimeters to meters _____ mm = _____ m _____
- d. 65 millimeters to meters _____ mm = _____ m _____
- e. 4.92 meters to millimeters _____ m = _____ mm _____
- f. 3 millimeters to meters _____ mm = _____ m _____
- g. In the space below, list the letters of the problems where larger units are converted to smaller units.

ones	•	tenths	hundredths	thousandths
0	.	3	6	2

b. 0.362

$$0.362 = (3 \times 0.1) + (6 \times 0.01) + (2 \times 0.001)$$

$$0.362 = \left(3 \times \frac{1}{10}\right) + \left(6 \times \frac{1}{100}\right) + \left(2 \times \frac{1}{1000}\right)$$

tens	ones	•	tenths	hundredths	thousandths
4	9	.	5	6	4

c. 49.564

$$49.564 = 4 \times 10 + 9 \times 1 + 5 \times 0.1 + 6 \times 0.01 + 4 \times 0.004$$

$$49.564 = (4 \times 10) + (9 \times 1) + \left(5 \times \frac{1}{10}\right) + \left(6 \times \frac{1}{100}\right) + \left(4 \times \frac{1}{1000}\right)$$

4. Write a decimal for each of the following. Use a place value chart to help, if necessary.

a. $3 \times 10 + 5 \times 1 + 2 \times \left(\frac{1}{10}\right) + 7 \times \left(\frac{1}{100}\right) + 6 \times \left(\frac{1}{1000}\right)$

b. $9 \times 100 + 2 \times 10 + 3 \times 0.1 + 7 \times 0.001$

c. $5 \times 1000 + 4 \times 100 + 8 \times 1 + 6 \times \left(\frac{1}{100}\right) + 5 \times \left(\frac{1}{1000}\right)$

5. At the beginning of a lesson, a piece of chalk is 4.875 inches long. At the end of the lesson, it is 3.125 inches long. Write the two amounts in expanded form using fractions.

a. At the beginning of the lesson:

b. At the end of the lesson:

6. Mrs. Herman asked the class to write an expanded form for 412.638. Nancy wrote the expanded form using fractions, and Charles wrote the expanded form using decimals. Write their responses.

Name _____

Date _____

1. Use $>$, $<$, or $=$ to compare the following.

a. 16.45	<input type="radio"/>	16.454
b. 0.83 83 hundredths	<input checked="" type="radio"/> =	$\frac{83}{100}$ 83 hundredths
c. $\frac{205}{1000}$	<input type="radio"/>	0.205
d. 95.045	<input type="radio"/>	95.545
e. 419.10	<input type="radio"/>	419.099
f. Five ones and eight tenths	<input type="radio"/>	Fifty-eight tenths
g. Thirty-six and nine thousandths	<input type="radio"/>	Four tens
h. One hundred four and twelve hundredths	<input type="radio"/>	One hundred four and two thousandths
i. One hundred fifty-eight thousandths	<input type="radio"/>	0.58
j. 703.005	<input type="radio"/>	Seven hundred three and five hundredths

* write #'s so they are the same
 fractions = fractions
 decimals = decimals
 * change it to words.

KW

line up the decimals, then look at each individual place value.

8.08
 8.081
 8.09
 8.008

2. Arrange the numbers in increasing order. /

a. 8.08 8.081 8.09 8.008

b. 14.204 14.200 14.240 14.210

3. Arrange the numbers in decreasing order.

a. 8.508 8.58 7.5 7.058

b. 439.216 439.126 439.612 439.261

4. James measured his hand. It was 0.17 meter. Jennifer measured her hand. It was 0.165 meter. Whose hand is bigger? How do you know?

5. In a paper airplane contest, Marcel's plane travels 3.345 meters. Salvador's plane travels 3.35 meters. Jennifer's plane travels 3.3 meters. Based on the measurements, whose plane traveled the farthest distance? Whose plane traveled the shortest distance? Explain your reasoning using a place value chart.

KW

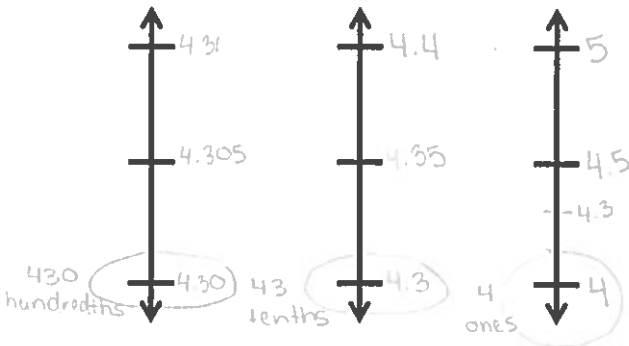
Name _____

Date _____

Fill in the table, and then round to the given place. Label the number lines to show your work. Circle the rounded number.

1. 4.3

- a. Hundredths b. Tenths c. Ones



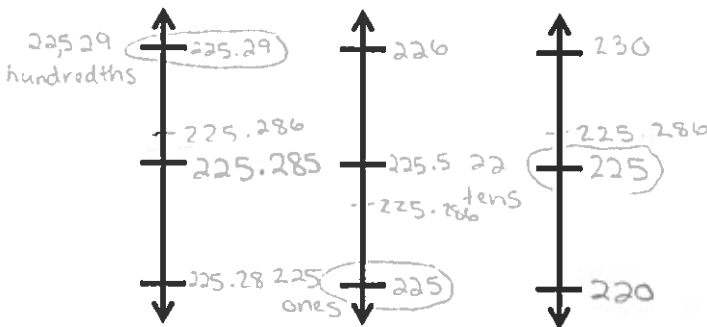
Tens	Ones	Tenths	Hundredths	Thousandths
	4	3		
		43		
			430	

You are decomposing 4.3.
 4.3 is already rounded to nearest hundredth and tenth : $4.3 \approx 43$ tenths
 $4.3 \approx 430$ hundredths

4.3 is less than 4.5 so $4.3 \approx 4$ ones

2. 225.286

- a. Hundredths b. Ones c. Tens



Tens	Ones	Tenths	Hundredths	Thousandths
22	5	2	8	6
	225	2	8	6
		2252	8	6
			22,528	6

You are decomposing 225.286.
 $225.286 \approx 22$ tens (2 tells 225 to stay the same.)
 $225.286 \approx 225$ ones (5 tells 225 to stay the same.)
 $225.286 \approx 225,29$ hundredths (8 tells you to go up one decimal place value.)

Name _____

Date _____

1. Write the decomposition that helps you, and then round to the given place value. Draw number lines to explain your thinking. Circle the rounded value on each number line.

a. 43.586 to the nearest tenth, hundredth, and one.

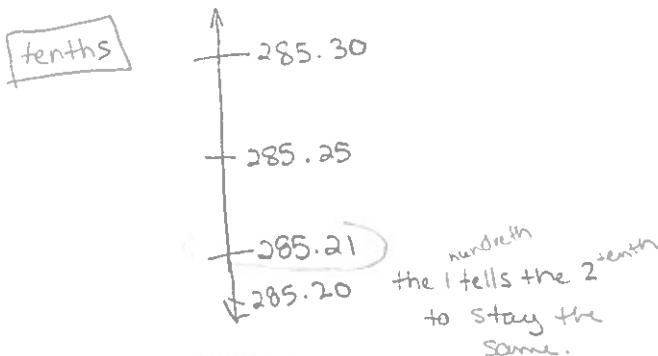
b. 243.875 to nearest tenth, hundredth, ten, and hundred.

2. A trip from New York City to Seattle is 2,852.1 miles. A family wants to make the drive in 10 days, driving the same number of miles each day. About how many miles will they drive each day? Round your answer to the nearest tenth of a mile.

$$2,852.1 \div 10$$

miles days

$$2,852.1 \div 10 = 285.21 \text{ miles driven each day.}$$



I moved the decimal one place to the LEFT because:

- one zero in 10 tells me to move decimal one place value
- \div makes # smaller so I move to left to make # smaller

Name _____

Date _____

1. Solve.

- a. 3 tenths + 4 tenths = _____ tenths
- b. 12 tenths + 9 tenths = _____ tenths = _____ one(s) _____ tenth(s)
- c. 3 hundredths + 4 hundredths = _____ hundredths
- d. 27 hundredths + 7 hundredths = _____ hundredths = _____ tenths _____ hundredths
- e. 4 thousandths + 3 thousandths = _____ thousandths
- f. 39 thousandths + 5 thousandths = _____ thousandths = _____ hundredths _____ thousandths
- g. 5 tenths + 7 thousandths = _____ thousandths
- h. 4 ones 4 tenths + 4 tenths = _____ tenths
- i. 8 thousandths + 6 ones 8 thousandths = _____ thousandths

2. Solve using the standard algorithm.

<p>a. $0.4 + 0.7 = 1.1$</p> $\begin{array}{r} 0.4 \\ +0.7 \\ \hline 1.1 \end{array}$	<p>b. $2.04 + 0.07 = 2.11$</p> $\begin{array}{r} 2.04 \\ +0.07 \\ \hline 2.11 \end{array}$
<p>c. $6.4 + 3.7 = 10.1$</p> $\begin{array}{r} 6.4 \\ +3.7 \\ \hline 10.1 \end{array}$	<p>d. $56.04 + 3.07 =$ _____</p> $\begin{array}{r} 56.04 \\ +3.07 \\ \hline 59.11 \end{array}$

① Rewrite the numbers so that the decimal point lines up. Make sure ones are in the ones column, tenths in the tenths column, and so on.

② Add, starting with the right side, working towards the left.

③ Make sure decimal point is in the sum (answer).

P+

Name _____

Date _____

1. Subtract. You may use a place value chart.

- a. 9 tenths – 3 tenths = _____ tenths
- b. 9 ones 2 thousandths – 3 ones = _____ ones _____ thousandths
- c. 4 hundreds 6 hundredths – 3 hundredths = _____ hundreds _____ hundredths
- d. 56 thousandths – 23 thousandths = _____ thousandths = _____ hundredths _____ thousandths

2. Solve using the standard algorithm.

line up the decimal points then

<p>a. $1.8 - 0.9 = \underline{0.9}$</p> $\begin{array}{r} 1.8 \\ - 0.9 \\ \hline 0.9 \end{array}$	<p>b. $41.84 - 0.9 = \underline{40.94}$</p> $\begin{array}{r} 41.84 \\ - 0.9 \\ \hline 40.94 \end{array}$	<p>c. $341.84 - 21.92 = \underline{319.92}$</p> $\begin{array}{r} 341.84 \\ - 21.92 \\ \hline 319.92 \end{array}$
<p>d. $5.182 - 0.09 = \underline{5.092}$</p> $\begin{array}{r} 5.182 \\ - 0.09 \\ \hline 5.092 \end{array}$	<p>e. $50.416 - 4.25 = \underline{46.166}$</p> $\begin{array}{r} 50.416 \\ - 4.25 \\ \hline 46.166 \end{array}$	<p>f. $741 - 3.91 = \underline{737.09}$</p> $\begin{array}{r} 741.00 \\ - 3.91 \\ \hline 737.09 \end{array}$

subtract

Add 2 zeros. line up decimal pts add 2 zeros as place holders after 741

PK

c. 3 copies of 4.65

d. 4 times as much as 20.075

3. Miles incorrectly gave the product of 7×2.6 as 14.42. Use a place value chart or an area model to help Miles understand his mistake.

4. Mrs. Zamir wants to buy 8 protractors and some erasers for her classroom. She has \$30. If protractors cost \$2.65 each, how much will Mrs. Zamir have left to buy erasers?

DA

$\$30.00$

8 protractors
erasers
?

$\$2.65$

ones	tenths	hundredths
2 2 ones $\times 8$ or 2×8	6 6 tenths $\times 8$ or $.6 \times 8$	5 5 hundredths $\times 8$ or $.05 \times 8$
16 ones or 16	48 tenths or 4.8	40 hundredths or 0.40

$\$30.00$
 -21.20
 $\$8.80$

Mrs. Zamir has \$8.80 left for protractors.

16.
= 4.8
+ 0.40 cost
 $\$21.20$ of protractors

b. 6×7.49

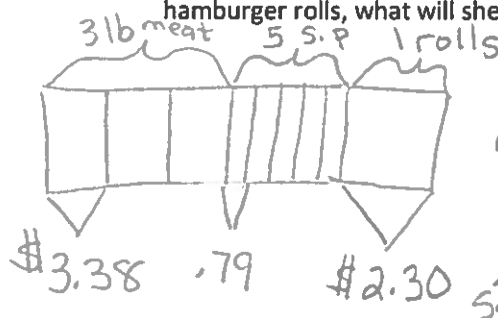
c. 9 copies of 3.65

d. 3 times 20.175

3. Leanne multiplied 8×4.3 and got 32.24. Is Leanne correct? Use an area model to explain your answer.

1. Visualize w/a picture
 2. Use graphic organizer to (place value chart) to multiple each part (partial products)
 3. Add totals of each item to get grand total spent.

4. Anna buys groceries for her family. Hamburger meat is \$3.38 per pound, sweet potatoes are \$0.79 each, and hamburger rolls are \$2.30 a bag. If Anna buys 3 pounds of meat, 5 sweet potatoes, and 1 bag of hamburger rolls, what will she pay in all for the groceries?



	Ones	tenths	hundredths	meat
meat	3	3	8	9.00
	3ones x 3	3tenths x 3	8hun. x 3	0.90
	or 3 x 3	or .3 x 3	or .08 x 3	+ 0.24
	9ones or 9	9tenths or .9	24hun. or .24	10.14
S.P.		7	9	3.50
		7tenths x 5 = 35t	9hun. x 5 = 45hun	0.45
		or 7 x 5 = 35	or 9 x 5 = 45	3.95

Anna spent a total of \$16.39.

\$10.14 meat
3.95 S.Pot
+ 2.30 rolls
<hr/>
\$16.39

Name _____

Date _____

1. Choose the reasonable product for each expression. Explain your thinking in the spaces below using words, pictures, or numbers.

a. 2.1×3 0.63 6.3 63 630

Since $2 \times 3 = 6$, the product has to be a little more than 6, since 2.1 is a little more than 2.

PT

b. 4.27×6 2562 256.2 25.62 2.562

c. 7×6.053 4237.1 423.71 42.371 4.2371

d. 9×4.82 4.338 43.38 433.8 4338

Name _____

Date _____

1. Complete the sentences with the correct number of units, and then complete the equation.

a. 3 groups of _____ tenths is 1.5. $1.5 \div 3 =$ _____

b. 6 groups of _____ hundredths is 0.24. $0.24 \div 6 =$ _____

c. 5 groups of _____ thousandths is 0.045. $0.045 \div 5 =$ _____

2. Complete the number sentence. Express the quotient in units and then in standard form.

a. $9.36 \div 3 =$ 9 ones $\div 3 +$ 36 hundredths $\div 3$
 $=$ 3 ones $+$ 12 hundredths
 $=$ 3.12

Write each number on the line then divide by 3. Write in standard form.

b. $36.012 \div 3 =$ _____ ones $\div 3 +$ _____ thousandths $\div 3$
 $=$ _____ ones $+$ _____ thousandths
 $=$ _____

P.K

c. $3.55 \div 5 =$ _____ tenths $\div 5 +$ _____ hundredths $\div 5$
 $=$ _____
 $=$ _____

d. $3.545 \div 5 =$ _____
 $=$ _____
 $=$ _____

Name _____

Date _____

1. Draw place value disks on the place value chart to solve. Show each step using the standard algorithm.

a. $5.241 \div 3 = \underline{1.747}$

Cross out each disk as you move it below.

Any left over disks gets moved to the column on the right as a group of 10.

Ones	Tenths	Hundredths	Thousandths
●●●●●	●●	●●●●	●
●	●●●●●●	●●●●	●●●●●●
●	●●●●●	●●●●	●●●●●
●	●●●●●	●●●●	●●●●●

$$\begin{array}{r}
 1.747 \\
 3 \overline{) 5.241} \\
 \underline{-3} \\
 22 \\
 \underline{-21} \\
 14 \\
 \underline{-12} \\
 21 \\
 \underline{-21} \\
 0
 \end{array}$$

PT

b. $5.372 \div 4 = \underline{\hspace{2cm}}$

Ones	Tenths	Hundredths	Thousandths

$$4 \overline{) 5.372}$$

Name _____ Date _____

1. Draw place value disks on the place value chart to solve. Show each step in the standard algorithm.

a. $0.7 \div 4 = \underline{0.175}$

Ones	Tenths	Hundredths	Thousandths
	.	.	.
	.	.	.
	.	.	.
	.	.	.

sharins
7 tenths
with
4 groups
equally

$$\begin{array}{r}
 0.175 \\
 4 \overline{) 0.700} \\
 \underline{-0.4} \\
 280 \\
 \underline{-28} \\
 20 \\
 \underline{-20} \\
 0
 \end{array}$$

P.K

b. $8.1 \div 5 = \underline{\hspace{2cm}}$

Ones	Tenths	Hundredths	Thousandths

$$5 \overline{) 8.1}$$

Name _____

Date _____

Solve using tape diagrams.

1. A gardener installed 42.6 meters of fencing in a week. He installed 13.45 meters on Monday and 9.5 meters on Tuesday. He installed the rest of the fence in equal lengths on Wednesday through Friday. How many meters of fencing did he install on each of the last three days?

Handwritten work for problem 1:

Tape diagram showing 42.6 m total, with 13.45 m on Mon., 9.5 m on Tues., and three unknown boxes for Wed., Th., and F.

Calculations:

$$13.45 + 9.50 = 22.95$$

$$42.60 - 22.95 = 19.65$$

$$19.65 \div 3 = 6.55$$

Vertical multiplication: $3 \overline{)19.65}$ showing steps: $3 \times 6 = 18$, remainder 16; $3 \times 5 = 15$, remainder 15; $3 \times 5 = 15$, remainder 0.

The gardener installed 6.55m of fencing on each of the last 3 days.

2. Jenny charges \$9.15 an hour to babysit toddlers and \$7.45 an hour to babysit school-aged children.
- a. If Jenny babysat toddlers for 9 hours and school-aged children for 6 hours, how much money did she earn in all?

- b. Jenny wants to earn \$1,300 by the end of the summer. How much more will she need to earn to meet her goal?