

Grade 5 Module 1

Topic A

Lessons 1-4: Multiplicative Pattern on the Place Value Chart

Lessons 1 and 2

Record the digits of the first factor on the top row of the place value chart. Draw arrows to show how the value of each digit changes when you multiply. Record the product on the second row of the place value chart. The first one has been done for you.

a. $4.582 \times 10 = \underline{45.82}$

			2	5	8	2	
			2	5	8	2	

b. $7.281 \times 100 = \underline{\hspace{2cm}}$

Solve.

a. $54,000 \times 10 = \underline{\hspace{2cm}}$

b. $54,000 \div 10 = \underline{\hspace{2cm}}$

c. $8.7 \times 10 = \underline{\hspace{2cm}}$

d. $8.7 \div 10 = \underline{\hspace{2cm}}$

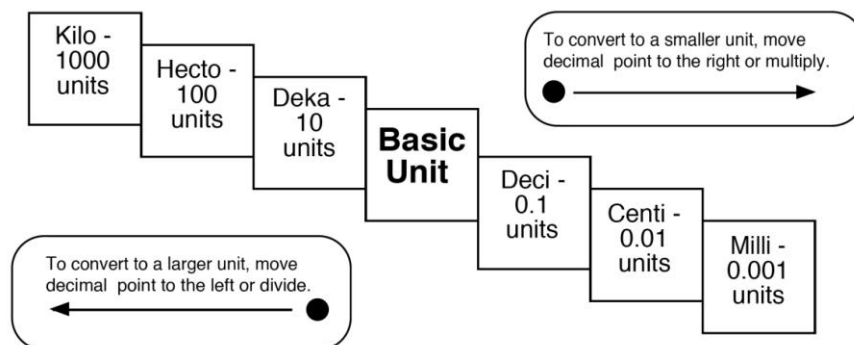
Lessons 3-4

We can use an *exponent* to represent how many times we use 10 as a factor. We can write 10×10 as 10^2 . We say, "Ten to the second power." The 2 is the exponent and it tells us how many times to use 10 as a factor.

How do you express 1000 using exponents? We multiply $10 \times 10 \times 10$, that's three times, so the answer is 10^3 . There are three zeros in 1000, so it's ten to the third power.

1,000,000	100,000	10,000	1000	100	10
$(10 \times 10 \times 10) \times (10 \times 10 \times 10)$	$10 \times 10 \times (10 \times 10 \times 10)$	$10 \times (10 \times 10 \times 10)$	$(10 \times 10 \times 10)$	10×10	10×1
10^6	10^5	10^4	10^3	10^2	10^1

Metric Conversion Chart



Convert:

a. 5 meters to centimeters $5 \text{ m} \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \text{ cm}$

b. 60 centimeters to meters $60 \text{ cm} \div \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \text{ m}$

Topic B

Lessons 5-6: Decimal Fractions and Place Value Patterns

$$\text{One thousandth} = 0.001 = \frac{1}{1000}$$

$$\frac{1}{1000} = 1 \times \left(\frac{1}{1000}\right)$$

$$0.001 = 1 \times 0.001$$

1 thousandth

$$\text{Four hundred four thousandths} = \frac{404}{1000} = 0.404$$

$$\frac{404}{1000} = 4 \times \left(\frac{1}{10}\right) + 4 \times \left(\frac{1}{1000}\right)$$

$$0.404 = 4 \times 0.1 + 4 \times 0.001$$

4 tenths 4 thousandths

$$\text{Four hundred and four thousandths} = 400\frac{4}{1000} =$$

$$400.004 \quad 400\frac{4}{1000} = 4 \times 100 + 4 \times \left(\frac{1}{1000}\right)$$

1. Express as decimal numerals. The first one is done for you.

a. Five thousandths	0.005
b. Thirty-five thousandths	
c. Nine and two hundred thirty-five thousandths	
d. Eight hundred and five thousandths	
e. $\frac{8}{1000}$	
f. $\frac{28}{1000}$	
g. $7\frac{528}{1000}$	
h. $300\frac{502}{1000}$	

Compare $\frac{299}{1000}$ and $\frac{3}{10}$

First, Write 3 tenths in standard form on your place value chart.

Next, Write 299 thousandths in standard form on your place value chart under 3 tenths.

Think to yourself, Which decimal has more tenths? **Yes, 0.3!**

If we traded 3 tenths for thousandths, how many thousandths would we need? **Yes, 300 thousandths!**

Now, name these decimals using unit form and compare.

299 thousandths; 300 thousandths is more, so...

$$0.299 < 0.3$$

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

a. 16.45	<input type="text"/>	16.454
b. 0.83	<input type="text"/>	$\frac{83}{100}$
c. $\frac{205}{1000}$	<input type="text"/>	0.205

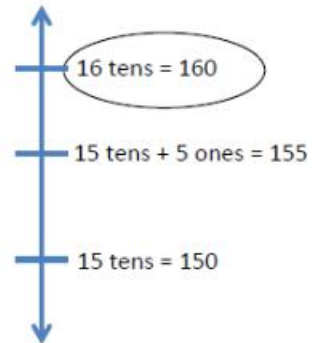
Topic C

Lessons 7-8: Place Value and Rounding Decimal Fractions

Strategically decompose 155 using multiple units to round to the nearest ten and nearest hundred.

: Work with your partner and name 155 using as many hundreds as possible. Then name it using as many tens as possible, and then using as many ones as possible. Record your ideas on your place value chart.

1 hundred	5 tens	5 ones	● ● ●
	15 tens	5 ones	
		155 ones	



Round to the given place value. Label the number lines to show your work. Circle the rounded number. Use a separate sheet to show your decompositions for each one.

1. 4.3

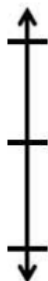
a. hundredths



b. tenths



c. ones



d. tens



Topic D

Lessons 9-10: Adding and Subtracting Decimals

1.8 + 13 tenths

Use your place value chart and disks to show the addends (1.8 + 13 tenths)

Add 1.8 + 13 tenths = 1 and 21 tenths. There are 10 tenths in one whole. I can compose 2 wholes and 11 tenths from 21 tenths, so the answer is 3 and 1 tenth.

Ones	Tenths	Hundredths	Thousandths

1. Solve.

a. 3 tenths + 4 tenths = _____ tenths

b. 12 tenths + 9 tenths = _____ tenths = _____ one(s) _____ tenth(s)

c. 3 hundredths + 4 hundredths = _____ hundredths

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

a. 9 tenths – 3 tenths = _____ tenth

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

Topic E

Lessons 11-12: Multiplying Decimals

$$2 \times 0.43 = 0.86$$

First, write 2×0.43 on chart

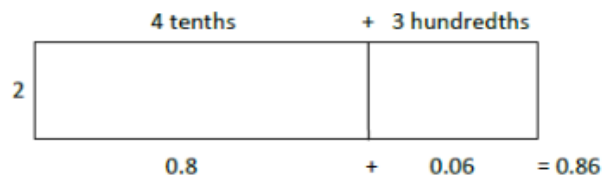
Remember, we make copies of hundredths like we make copies of tenths. □

Hundredths is a different unit, but we can multiply it just like tenths.

Use your place value chart to find the product of 2×0.43 . Complete the sentence, "2 copies of 43 hundredths is _____."

Now, read what your place value chart shows.

So, we have 2 groups of 4 tenths and 2 groups of 3 hundredths. I need to combine tenths with tenths and hundredths with hundredths.



1. Solve by drawing disks on a place value chart. Write an equation and express the product in standard form.

a. 3 copies of 2 tenths

b. 5 groups of 2 hundredths

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

a. 2.1×3

0.63

6.3

63

630

Topic F

Lessons 13-16: Dividing Decimals

Lesson 13: Mental Math

$$0.9 \div 3 = 0.3$$

First, Show 9 tenths with your disks.

Now, Divide 9 tenths into 3 equal groups.

Look, how many tenths are in each group?

Yes, there are 3 tenths in each group!

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

a. 3 groups of _____ tenths is 1.5

$$1.5 \div 3 = \underline{\hspace{2cm}}$$

b. 6 groups of _____ hundredths is 0.24

$$0.24 \div 6 = \underline{\hspace{2cm}}$$

c. 5 groups of _____ thousandths is 0.045

$$0.045 \div 5 = \underline{\hspace{2cm}}$$

Lessons 14 and 15: Dividing Decimals

$$6.72 \div 3 = \underline{\quad}$$

First, show 6.72 on your place value chart using the number disks.

Let's begin with our largest units. We will share 6 ones equally with 3 groups.

There are 2 ones, so draw 2 disks in each group and cross off in the dividend as they are shared.

We gave each group 2 ones, which is 6 ones in all.

Now there are no ones left to share, so let's share our tenths. 7 tenths divided by 3.

There would be 2 tenths in each group. We shared 6 tenths in all, but let's stop here a moment.

We are subtracting the 6 tenths because we have already share them. \rightarrow We distributed the 6 tenths into 3 groups, so we have to subtract it.

However, 1 tenth is left. We can't share that between 3 groups. We can change 1 tenth for 10 hundredths.

We now have 12 hundredths. We can give 4 hundredths to each group. We share 12 hundredths in all. We subtract because those 12 hundredths have been shared. \rightarrow They are divided into the groups now, so we have to subtract 12 hundredths minus 12 hundredths which is equal to 0 hundredths.

Look at the 3 groups you made. We have 2 and 24 hundredths and we don't have other units to share.

