

Name \_\_\_\_\_

# Divide Decimals by Powers of Ten

## Lesson 14

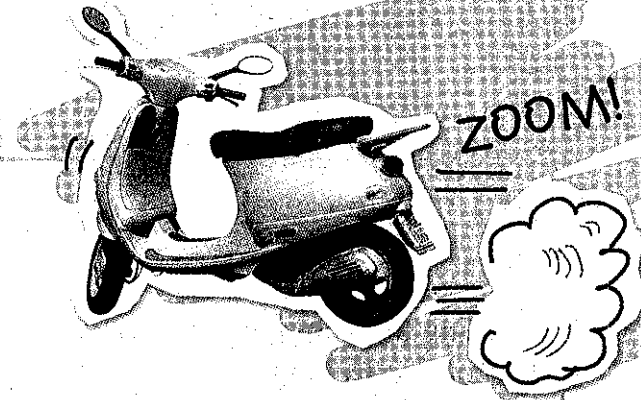
### ESSENTIAL QUESTION ?

How is multiplying and dividing decimals similar to multiplying and dividing whole numbers?

You can divide decimals by powers of ten, such as 10, 100, and 1,000. Powers of ten can be written with exponents.



## Math in My World



### Example 1

Laura needs to make 10 payments to pay for her new motorized scooter. How much will each payment be if the scooter costs \$219.50?

#### One Way Divide.

Find  $\$219.50 \div 10$ .

$$\begin{array}{r} 21.95 \\ 10 \overline{)219.50} \\ \underline{-20} \phantom{0} \\ 19 \phantom{0} \\ \underline{-10} \phantom{0} \\ 95 \\ \underline{-90} \\ 50 \\ \underline{-50} \\ 0 \end{array}$$

The non-zero digits are the same. The decimal point in the quotient moved one place to the left.

#### Another Way Move the decimal point.

Dividing a decimal by 10 moves the decimal point one place to the left.

$$219.5 \rightarrow 21.95$$

So, each payment will be \_\_\_\_\_.

**Check** Use multiplication.  $21.95 \times 10 = 219.5$

To divide a decimal by a power of ten, move the decimal point to the left same number of zeros in the power of ten. This is also the same number as the exponent on 10.



## Example 2

In the past  $10^2$  years, scientists measured the movement of the continents to be 190.5 centimeters. If the continents moved the same amount each year, how much did the continents move in one year?

Since  $10^2 = 100$ , find  $190.5 \div 100$ .

$$\begin{array}{r} 1.905 \\ 100 \overline{) 190.500} \\ \underline{- 100} \phantom{00} \\ 905 \phantom{0} \\ \underline{- 900} \phantom{0} \\ 50 \phantom{0} \\ \underline{- 0} \phantom{0} \\ 500 \phantom{0} \\ \underline{- 500} \phantom{0} \\ 0 \end{array}$$

The non-zero digits are the same. The decimal point in the quotient moved two places to the left.

Dividing a decimal by 100 moved the decimal point two places to the left.

$$190.5 \rightarrow 1.905$$

So,  $190.5 \div 10^2 = \underline{\hspace{2cm}}$ . The continents moved \_\_\_\_\_ centimeters in one year.

**Check** Use multiplication.  $1.905 \times 100 = 190.5$

## Talk MATH

Use the number of zeros in the number 10 to explain why  $4.5 \div 10 = 0.45$ .

## Guided Practice



Divide. Check your answer using multiplication.

1.  $7.2 \div 10 = \underline{\hspace{2cm}}$

2.  $21.5 \div 10^2 = \underline{\hspace{2cm}}$

3.  $19.2 \div 10^3 = \underline{\hspace{2cm}}$



Name \_\_\_\_\_

## Independent Practice

Divide. Check your answer using multiplication.

4.  $5.62 \div 100 =$  \_\_\_\_\_

5.  $18.7 \div 100 =$  \_\_\_\_\_

6.  $6.3 \div 10^3 =$  \_\_\_\_\_

7.  $0.05 \div 1 =$  \_\_\_\_\_

8.  $0.012 \div 10^2 =$  \_\_\_\_\_

9.  $2.46 \div 10^1 =$  \_\_\_\_\_

10.  $8.72 \div 100 =$  \_\_\_\_\_

11.  $98.6 \div 10^2 =$  \_\_\_\_\_

12.  $5.71 \div 1 =$  \_\_\_\_\_

13.  $437 \div 1,000 =$  \_\_\_\_\_



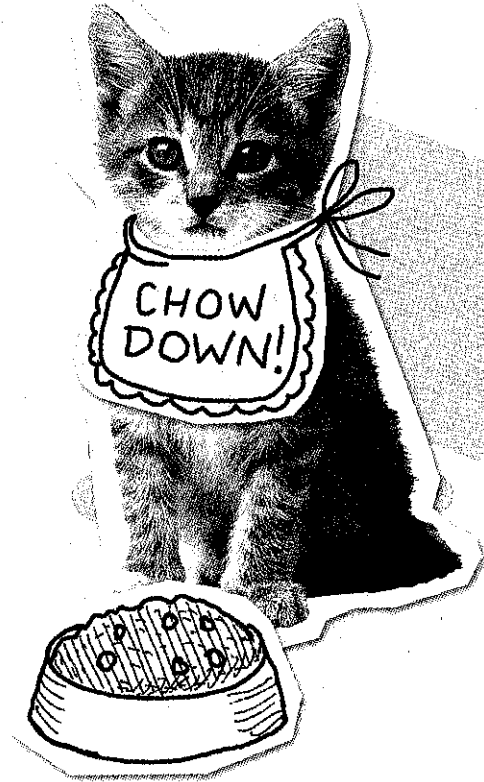
# Problem Solving

14. Herbert bought red beans to make chili to sell at a fundraiser. The total price of the red beans was \$13.90. How much did it cost for each can?

Items Purchased	
Item	Quantity
Red beans	10
Shredded cheese	6

- Mathematical PRACTICE 4 Model Math** Sarah was trying to decide what kind of cat food to buy at the store. Smiley Cat costs \$7.90 for 10 pounds. Purr Plus costs \$0.85 per pound. Which brand is the better buy? Explain your reasoning.

16. In Alaska, scientists are studying the melting of glaciers. They found that in the past 10 years, the glaciers receded about 59.05 feet. If the glaciers receded at the same rate each year, how much did they recede in one year?



## HOT Problems

- Mathematical PRACTICE 3 Which One Doesn't Belong?** Circle the expression that does not belong with the other three. Explain your reasoning.

$6.7 \div 10$

$4 \div 1,000$

$0.2 \div 1$

$52.1 \div 100$

18. **? Building on the Essential Question** Describe the relationship between the number of places a decimal point is moved to the left and the change in the value of the number.

Name .....

# My Homework

## Lesson 14

### Divide Decimals by Powers of Ten

## Homework Helper



Need help? [connectED.mcgraw-hill.com](http://connectED.mcgraw-hill.com)

Find  $36.4 \div 100$ .

One Way Divide.

$$\begin{array}{r} 0.364 \\ 100 \overline{) 36.4} \\ \underline{- 300} \phantom{0} \\ 640 \\ \underline{- 600} \\ 400 \\ \underline{- 400} \\ 0 \end{array}$$

The non-zero digits are the same. The decimal point in the quotient moved two places to the left.

Another Way Move the decimal point.

Dividing a decimal by 100 moves the decimal point two places to the left.

$$36.4 \rightarrow 0.364$$

So,  $36.4 \div 100 = 0.364$ .

Check Use multiplication.  $0.364 \times 100 = 36.4$

## Practice

Divide. Check your answer using multiplication.

1.  $8.3 \div 100 =$  .....

2.  $208 \div 10^2 =$  .....

3.  $0.07 \div 1 =$  .....

4.  $32.7 \div 1,000 =$  .....



# Problem Solving


Use the table to answer Exercises 5–7.

5. Each row of the grocery store parking lot has 10 parking spots of equal width. What is the width for each spot?

Location	Number of Parking Spots per Row	Combined Width (m)
Grocery Store	10	31.92
Hardware Store	10	31.96
Mall	10	31.30

6. How much space is given for each parking spot at the Mall parking lot if each spot has an equal width?

7. Which location gives the greatest space for each parking spot?

- Mathematical**  **8. PRACTICE** **Model Math** Christy purchased 6.75 pounds of licorice. How much licorice does she need to put in each bag if she divides the total amount into 10 equal-sized bags?

- Mathematical**  **9. PRACTICE** **Explain to a Friend** Tell what number you must divide 180 by to get 1.8.

## Test Practice

10. Tomas buys a trumpet for \$108.90. He will make 10 equal payments to pay for the trumpet. What is the amount of each payment that Tomas will make?
- (A) \$1.09                      (C) \$19.90  
(B) \$10.89                     (D) \$108.90

Mountain Language Homework

1 sea world

8 to be indignant  
sorry happily angry

14 Bees pollinate flowers.

2 calf

9 The train is moving quickly

15 course governor trial

3 there will

10 trapeze trauma  
traveler triap trash

16 they  
slam  
play  
meal

17 sword  
armor  
rifle  
cannon

4 Representative Moto

11 apple is to skin as  
nut is to \_\_\_\_\_

18 snare  
sneer  
snarl  
sneak

19 obey  
follow  
conform  
obey

5 headset

6 unwritten

12 hesitate

7 the track  
of Duke

13 did you here  
freakies a short poem

20 things found in a desert

Mountain Language Homework

**Monday**

1. Is the noun a common noun or a proper noun? \_\_\_\_\_ if a proper noun, write it correctly. \_\_\_\_\_
2. Write the singular or plural form of the word. \_\_\_\_\_
3. Write the contraction or the two words that make the contraction. \_\_\_\_\_
4. Write the abbreviation. \_\_\_\_\_
5. Write the two words that make the compound word. \_\_\_\_\_

**Tuesday**

6. Write the prefix. \_\_\_\_\_ Write the suffix. \_\_\_\_\_ Write the base or root word. \_\_\_\_\_
7. Show the possession of the subject. \_\_\_\_\_
8. Choose the Synonym. \_\_\_\_\_
9. Choose the subject. \_\_\_\_\_ Choose the predicate. \_\_\_\_\_
10. Choose the word that would be found between the guide words. \_\_\_\_\_

**Wednesday**

11. Write the correct word. \_\_\_\_\_
12. Divide the word into syllables. \_\_\_\_\_
13. Proofread and write the sentence correctly.  
\_\_\_\_\_
14. Is the statement a fact or an opinion? \_\_\_\_\_
15. Choose the misspelled word and write it correctly. \_\_\_\_\_

**Thursday**

16. Choose the word that has the same sound as the underlined letter(s). \_\_\_\_\_
17. Which word does not belong? \_\_\_\_\_
18. Put the words in ABC order. \_\_\_\_\_
19. Write the antonym. \_\_\_\_\_
20. List as many items as you can that fit in the category. \_\_\_\_\_

Name \_\_\_\_\_

Date \_\_\_\_\_

## Finding the Main Idea

Directions: After reading the paragraph, write a sentence stating the main idea.

### Paragraph 1

It has been said that to feel well, you must eat well. That is true, but you also need to get adequate amounts of exercise. The combination of a nutritious diet and an exercise program is the best thing you can do for yourself and those that love you. With a proper diet, you will more easily maintain the proper weight and get the nutrients your body needs to function properly. Add exercise to the mix, and maintaining the proper weight becomes easier. A proper diet consists of fresh foods that are low in fat and sugar, high in fiber, and includes plenty of fresh fruits and vegetables. This type of diet will help you ward off diabetes, high blood pressure, high cholesterol, and many forms of cancer. By adding exercise, you are keeping your heart healthy and your joints functioning properly, which also helps ward off the same diseases as well as arthritis. Recent studies have also shown that proper diet and exercise helps keep people mentally fit also by lowering the risk of a stroke and even lowering your risk for developing Alzheimer's or other forms of dementia. So as you can see, proper diet and adequate exercise may just be the key to helping you live longer and healthier.

The main idea of the paragraph is: \_\_\_\_\_

### Paragraph 2

The history of surgery is fascinating. When we think of surgeons today, we think of highly educated doctors who have trained for years in their specialty area. Surgeons of today are very skilled and have a very high success rate. They operate in sterile conditions and with the aid of imaging such as x-ray, CT scans, or MRIs. But this wasn't always the case. In fact, in the Middle Ages, the barbers in a community were also the surgeons. Can you imagine that? Going to the same place for surgery that you would to get your hair cut. Seems strange to us today, but it was the common practice in those days. They also knew nothing about sterile techniques and even operated without gloves. They also used rudimentary tools such as saws and piters. The worst part, there was no anesthesia. Sadly, most surgery patients died from infection. They also didn't understand the way the body worked at that time. They would drill holes in people's head to let the demons out and cut off a leg with a rusty saw. It is a wonder that anybody survived a surgery during those times. Over the years, surgical techniques improved and eventually evolved into the highly trained field it is today. We are lucky to live in a time in which medical advancements abound.

The main idea of the paragraph is: \_\_\_\_\_

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Name \_\_\_\_\_

Date \_\_\_\_\_

## Main Idea

Read each paragraph and choose the main idea.

Sandy sings in the church choir. She sings a solo every week. Everyone looks forward to hearing her sing. Last Sunday Mrs. Smith said, "Sandy has the voice of an angel." We all agreed with her. I think she will be famous one day.

The main idea of the paragraph is:  
a. The church has a choir.  
b. Sandy goes to church.  
c. Sandy is a great singer.  
d. Sandy sang a solo each week.

Tommy ran down the street chasing his dog, "Bobby! Bobby!" he yelled. He knew he should have checked the gate before letting Bobby into the back yard. His mother has told him a hundred times. How had he forgotten? If he had closed it, Bobby would still be in the back yard.

The main idea of the paragraph is:  
a. Bobby ran away.  
b. Tommy forgot to make sure the gate was closed.  
c. Tommy was forgetful.  
d. Tommy's mother was bossy.

Joy sat on the bench at the baseball field and waited. She didn't like waiting alone. All of the other kids had been picked up by their parents. Where was her mother? Suddenly, her mother came running to her. "Oh Joy, I'm so sorry. Next time I will make myself a note."

The main idea of the paragraph is:  
a. Joy's mother forgot to pick her up.  
b. Joy hated sitting alone.  
c. Joy plays baseball.  
d. Joy's mother writes notes.

I went to the ice cream shop and ate a huge sundae. When I got home, supper was ready. Mom had cooked my favorite meal. No matter how I tried, I couldn't make myself eat.

The main idea of the paragraph is:  
a. I like ice cream.  
b. Mom is a good cook.  
c. I was too full to eat supper.  
d. I was sick.

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Name: \_\_\_\_\_ Period: \_\_\_\_\_ Due Date For Project: November 3, 2017

## Cell Analogy Project Worksheet

For my analogy, I will compare my cell to \_\_\_\_\_

Choose either a Plant or Animal cell to use for your analogy, and check off each organelle as you add it to the chart below:

<b>Plant Cell</b> <input type="checkbox"/> Nucleus <input type="checkbox"/> Cell wall <input type="checkbox"/> Chloroplast <input type="checkbox"/> Cytoplasm <input type="checkbox"/> Cell membrane	Other plant cell parts: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<b>Animal Cell</b> <input type="checkbox"/> Nucleus <input type="checkbox"/> Cytoplasm <input type="checkbox"/> Cell membrane	Other animal cell parts: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
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A. Cell Structure	B. Function	C. Analogy Part	D. Function
<b>A. Cell Structure</b>	<b>B. Function</b>	<b>C. Analogy Part</b>	<b>D. Function</b>

Name: \_\_\_\_\_ Period: \_\_\_\_\_ Due Date For Project: \_\_\_\_\_

## Cell Analogy Project

Now that you have learned about the structures in a cell, you will create an analogy that compares the cell and its organelles to something of your choice. Choose an analogy that focuses on the cell as a whole made up of many parts working together. Examples include the cell as a...

city  
hospital  
house  
car  
sailing ship

football stadium  
school  
mall  
vacation spot  
amusement park



You will create a poster, powerpoint, or a model that illustrates your analogy. Posters must be in color and at least 11" x 17" big; models must be at least the size of a shoebox. All organelles must be labeled clearly with the appropriate names. The first part of this assignment is to complete the Cell Analogy Project Worksheet (attached). You may also want to sketch a rough draft of your poster or model, as you will be graded for neatness as well as accuracy.

### Grading Guidelines :

All cell parts/analogy are labeled correctly with the correct function (70 points)

#### Project Size

- Posters at least 11 x 17 inches
- models at least shoe box-sized
- slide show must include pictures, descriptions

#### Neatness and Organization (15 points)

- Project has a title
- Organelles are labeled neatly
- Project is well-organized and illustrations or model pieces are neat

#### Creativity (15 points)

- Project is in full color
- Project is unique and creative!
- Project displays a high level of effort

Fifth Grade Science Homework B. Stephens & Ohene  
Science Homework for October 30-November 3, 2017

\*Cell Analogy Project – Due: Friday, November 3, 2017

Continue work on Cells Science Padlet:

<https://padlet.com/stephensb11/cells>

