

### DIVISION OF EQUITY AND ACCESS - Curriculum, Instruction, and School Supervision

"Without mathematics, there's nothing you can do. Everything around you is mathematics. Everything around you is numbers." ~ Shakuntala Devi

Work your math muscles in July and August!



## Grade 5

Dear Parent(s)/Guardian,

Please have your child complete 1 – 3 practice assignments per week. Upon completion, please visit our Summer Learning District Website to obtain the answers and check your child's work. In addition to this packet, you will find additional resources for your youngster on our website. Feel free to contact Dr. Pemberton at <a href="mailto:cpemberton@yonkerspublicschools.org">cpemberton@yonkerspublicschools.org</a> with any questions. Happy Numerical Learning!

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# Grade 5 Math concepts covered in this packet

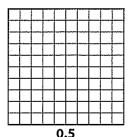
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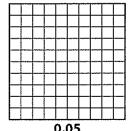
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# Understanding of Place Value

The decimal grid in each model represents 1 whole. Shade each model to show the decimal number below the model.





Complete the comparison statements.

Complete the equations.

$$0.05 \times _{---} = 0.5$$

2 Draw a number line from 0 to 2. Then draw and label points at 2 and 0.2.

**4**----

Use the number line to explain why 2 is 10 times the value of 0.2.

Complete the equations to show the relationship between 2 and 0.2.

3 Which type of model do you like best? Explain why.

## **Understanding Powers of 10**

Name: \_\_\_\_\_

Multiply or divide.

$$36 \div 10^2$$

$$4 0.6 \div 10^2$$

$$6 \div 10^3$$

$$60 \div 10^3$$

$$0.3 \times 10^2$$

9 
$$0.3 \times 10^3$$

10 
$$0.03 \times 10^2$$

11 
$$0.003 \times 10^2$$

12 
$$0.03 \times 10^3$$

14 
$$0.72 \times 10^2$$

15 
$$7,200 \div 10^3$$

16 
$$20 \div 10^2$$

17 
$$0.9 \times 10^3$$

18 
$$0.001 \times 10^2$$

**20** 
$$150 \div 10^3$$

21 
$$0.46 \times 10^3$$

What strategies did you use to solve the problems? Explain.

# Reading a Decimal in Word Form

Name: \_\_\_\_\_\_

What is the word form of each decimal?

1 0.2

2 0.02

3 0.002

4 0.12

5 0.012

6 0.102

7 1.002

8 9.4

9 90.04

10 0.94

11 500.2

**12** 8.008

**13** 700.06

**14** 6.335

15 3,000.001

\_\_\_\_

16 What strategies did you use to help you read the decimals? Explain.

## Writing a Decimal in Standard Form

Name: \_\_\_\_\_\_

### What decimal represents each number?

1 one and six tenths

2 eight and eleven hundredths

3  $6 \times 1 + 5 \times \frac{1}{10}$ 

4 thirteen and thirteen thousandths

5  $2 \times 10 + 7 \times \frac{1}{10} + 3 \times \frac{1}{100}$ 

**6**  $4 \times 1 + 1 \times \frac{1}{100} + 9 \times \frac{1}{1,000}$ 

7 five hundred twelve thousandths

8 8 × 100 + 2 ×  $\frac{1}{10}$  + 8 ×  $\frac{1}{1,000}$ 

9  $2 \times 1 + 4 \times \frac{1}{100}$ 

10 forty-two and forty-one hundredths

11  $7 \times 100 + 2 \times 10 + 3 \times 1 + 6 \times \frac{1}{10}$ 

12 twelve and sixty-eight thousandths

13  $3 \times 1,000 + 6 \times 100 + 3 \times 10 + 7 \times \frac{1}{10} + 2 \times \frac{1}{100} + 8 \times \frac{1}{1,000}$ 

nine hundred fifty-six and four hundred twenty-seven thousandths

How was writing decimals for numbers in word form different from numbers in expanded form?

Write the symbol <, =, or > in each comparison statement.

- 1 0.02 \_\_\_\_\_ 0.002
- 2 0.05 \_\_\_\_\_ 0.5
- 3 0.74 \_\_\_\_\_ 0.84

- 4 0.74 \_\_\_\_\_ 0.084
- 5 1.2 \_\_\_\_\_ 1.25
- 6 5.130 \_\_\_\_\_ 5.13

- **7** 3.201 \_\_\_\_\_ 3.099
- 8 0.159 \_\_\_\_\_ 1.590
- 9 8.269 \_\_\_\_\_ 8.268

- 10 4.60 \_\_\_\_\_ 4.060
- 11 302.026 \_\_\_\_\_ 300.226
- 12 0.237 \_\_\_\_\_ 0.223

- **13** 3.033 \_\_\_\_\_ 3.303
- 14 9.074 \_\_\_\_\_ 9.47
- **15** 6.129 \_\_\_\_\_ 6.19

- **16** 567.45 \_\_\_\_\_ 564.75
- 78.967 \_\_\_\_\_ 78.957
- 18 5.346 \_\_\_\_\_ 5.4

- 19 12.112 \_\_\_\_\_ 12.121
- 20 26.2 \_\_\_\_ 26.200
- 21 100.32 \_\_\_\_\_ 100.232
- 22 What strategies did you use to solve the problems? Explain.

Round each decimal to the nearest tenth.

0.32

2 3.87

3 0.709

4 12.75

**5** 12.745

6 645.059

Round each decimal to the nearest hundredth.

7 1.079

8 0.854

9 0.709

10 12.745

11 645.059

12 50.501

Round each decimal to the nearest whole number.

**13** 1.47

14 12.5

**15** 200.051

Write two different decimals that are the same value when rounded to the nearest tenth. Explain why the rounded values are the same.

Round 1.299 to the nearest tenth and to the nearest hundredth. Explain why the rounded values are equivalent.

## **Multiplying Multi-Digit Whole Numbers**

Name: \_\_\_\_\_

Estimate. Circle all the problems with products between 3,000 and 9,000. Then find the exact products of only the problems you circled.

16 What strategies did you use to solve the problems? Explain.

The answers are mixed up at the bottom of the page. Cross out the answers as you complete the problems.

#### Answers

# Using Estimation and Area Models to Divide

Name: \_\_\_\_\_

Check each answer by multiplying the divisor by the quotient. If the answer is incorrect, cross out the answer and write the correct answer.

Division Problems	Student Answers	
516 ÷ 12	<b>48</b> 43	Check: 12 × 48 = 576
837 ÷ 31	27	
351 ÷ 13	57	
918 ÷ 54	22	
896 ÷ 32	23	
1,482 ÷ 78	14	
1,012 ÷ 11	82	
1,344 ÷ 56	24	

Explain how you could know that the answers to two of the problems are incorrect without multiplying.

Estimate. Circle all the problems that will have quotients greater than 30. Then find the exact quotients of only the problems you circled.

Select a problem you did not circle. Describe two different ways you could use estimation to tell the quotient is not greater than 30.

Circle all the problems with sums less than 5. Then find the exact sums of only the problems you circled.

\_\_\_\_\_

**7** 2.675 + 2.325

10 2.6 + 2.933

**13** 1.83 + 3.1 + 0.1

16 What strategies did you use to solve the problems?

## **Subtracting Decimals to Hundredths**

Name: \_\_\_\_\_

The answers are mixed up at the bottom of the page. Cross out the answers as you complete the problems.

$$4 6.12 - 0.7$$

#### **Answers**

## **Using Estimation with Decimals**

Name:		

#### Solve the problems.

Lori needs at least 12 liters of water to fill a water cooler. She has a container with 4.55 liters of water, a container with 3.25 liters of water, and a container with 4.85 liters of water. Does she have enough water? Use estimation only to decide. Explain why you are confident in your estimate.

2 Nia wants the total weight of her luggage to be no more than 50 kilograms. She has three suitcases that weigh 15.8 kilograms, 17.42 kilograms, and 16.28 kilograms. Is the total weight within the limit? Use only estimation to decide. Explain how you know your estimate gives you the correct answer.

Omar measures one machine part with length 4.392 centimeters and another part with length 6.82 centimeters. What is the difference in length? Use estimation to check your answer for reasonableness.

## **Using Estimation with Decimals** continued

Name: .			

4 Kyle wants to buy a hat for \$5.75, a T-shirt for \$7.65, and a keychain for \$3.15. He has \$16. Does he have enough money? Use estimation only to decide. Explain why you are confident in your estimate.

For his hiking club, Ricardo is making a container of trail mix with 3.5 kilograms of nuts. He has 1.78 kilograms of peanuts and 0.625 kilograms of almonds. The rest of the nuts will be cashews. How many kilograms of cashews does he need? Use estimation to check your answer for reasonableness.

6 Suppose you want to be sure that the total cost of three items does not go over a certain amount. How can you use estimation only to solve the problem?

Multiply.

11 
$$21 \times 1.05$$

14 
$$5 \times 0.87$$

16 16 × 6.4

19 How did you know where to put the decimal point in problem 6?

# **Multiplying Decimals Less Than 1**

Name: \_\_\_\_\_

Multiply.

1 
$$0.5 \times 3$$

$$20.5 \times 0.3$$

$$30.5 \times 0.03$$

$$46 \times 0.2$$

5 
$$0.6 \times 0.2$$

6 
$$0.06 \times 0.2$$

8 
$$0.8 \times 0.2$$

12 
$$0.4 \times 0.12$$

....

10  $0.4 \times 0.02$ 

14 
$$0.6 \times 0.4$$

15 
$$0.6 \times 0.8$$

16 0.01 × 0.5

17 
$$0.05 \times 0.5$$

18 
$$0.25 \times 0.5$$

\_\_\_\_

\_\_\_\_

\_\_\_\_

Describe a pattern you noticed when you were completing the problem set.

The answers are mixed up at the bottom of the page. Cross out the answers as you complete the problems.

6 
$$0.02 \times 1.8$$

$$86.6 \times 0.02$$

12 
$$8.4 \times 6.2$$

14 
$$4.25 \times 8.5$$

#### **Answers**

# Dividing a Decimal by a Whole Number

Name: \_\_\_\_\_

Multiply to check if the student's answer is reasonable. If not, cross out the answer and write the correct quotient.

Division Problems	Student Answers	
0.88 ÷ 11	<del>0.8</del> 0.08	Product: 11 × 0.8 = 8.8
5.6 ÷ 8	0.07	
7.2 ÷ 9	0.8	
25.35 ÷ 5	5.7	
21.7 ÷ 7	3.1	
14.4 ÷ 12	0.12	
96.16 ÷ 8	12.2	
60.18 ÷ 2	30.9	
	1	

1 Can an answer be incorrect even if it looks reasonable? Explain.

Divide.

$$3.75 \div 0.25$$

-----

11 
$$0.36 \div 0.06$$

-

\_\_\_\_

.....

Describe a pattern you noticed when you were completing the problem set.

Add.

$$\frac{1}{2} + \frac{1}{4}$$

$$\frac{1}{2} + \frac{3}{8}$$

$$\frac{1}{2} + \frac{1}{3}$$

$$\frac{1}{3} + \frac{1}{4}$$

$$\frac{5}{6} + \frac{1}{12}$$

6 
$$\frac{1}{3} + \frac{2}{5}$$

$$\frac{5}{6} + \frac{2}{3}$$

$$\frac{3}{4} + \frac{5}{6}$$

$$9 \frac{7}{9} + \frac{1}{6}$$

10 
$$\frac{7}{8} + \frac{2}{3}$$

11 
$$\frac{3}{2} + \frac{3}{5}$$

12 
$$\frac{9}{8} + \frac{5}{6}$$

What is a different common denominator you could use in problem 2? Describe how you would add the fractions using this different common denominator. Is the result equivalent to the sum found in problem 2?

Add.

1 
$$4\frac{7}{8} + \frac{1}{8}$$

2 
$$4\frac{7}{8} + \frac{1}{4}$$

3 
$$4\frac{7}{8} + \frac{1}{2}$$

4 
$$2\frac{3}{4} + \frac{1}{3}$$

$$5 \ 2\frac{3}{4} + \frac{2}{3}$$

6 
$$2\frac{3}{4} + \frac{5}{6}$$

7 
$$1\frac{2}{5} + 1\frac{1}{2}$$

8 
$$2\frac{4}{5} + 3\frac{1}{2}$$

9 
$$3\frac{2}{3} + 3\frac{2}{5}$$

10 
$$4\frac{5}{8} + 2\frac{2}{3}$$

11 
$$5\frac{3}{4} + 2\frac{3}{5}$$

12 
$$3\frac{5}{6} + 2\frac{7}{8}$$

13 What strategy did you use to solve problem 3? Describe each step.

Subtract.

$$\frac{1}{2} - \frac{1}{4}$$

$$\frac{1}{2} - \frac{3}{8}$$

$$\frac{1}{2} - \frac{1}{3}$$

$$\frac{1}{3} - \frac{1}{4}$$

$$\frac{5}{6} - \frac{5}{12}$$

6 
$$\frac{3}{4} - \frac{1}{6}$$

$$7 \frac{7}{8} - \frac{3}{4}$$

$$\frac{1}{2} - \frac{2}{5}$$

$$9 \ \frac{3}{4} - \frac{3}{5}$$

$$\frac{2}{3} - \frac{3}{5}$$

$$\frac{5}{6} - \frac{3}{8}$$

12 
$$\frac{7}{8} - \frac{2}{3}$$

13 How could you check your work in problem 4? Describe each step.

# **Subtracting with Mixed Numbers**

Subtract.

1 
$$2\frac{1}{8} - \frac{1}{4}$$

$$2 2\frac{1}{8} - \frac{1}{2}$$

3 
$$2\frac{1}{8} - \frac{3}{4}$$

4 
$$2\frac{1}{2} - \frac{2}{3}$$

$$5 \ 2\frac{1}{4} - 1\frac{1}{3}$$

6 
$$3\frac{1}{6} - 1\frac{3}{4}$$

$$7\frac{2}{5} - 3\frac{1}{2}$$

8 
$$5\frac{3}{8} - 4\frac{1}{6}$$

9 
$$8\frac{2}{3} - 3\frac{4}{5}$$

10 
$$6\frac{2}{5} - 3\frac{3}{4}$$

11 
$$9\frac{3}{8} - 3\frac{2}{3}$$

12 
$$14\frac{1}{8} - 9\frac{5}{6}$$

13 What pattern did you notice in problems 1 through 3? Explain how this helped you subtract.

# **Estimating in Word Problems** with Fractions

Name:	_
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Solve the problems. Estimate to tell if your solution is reasonable. Show your work.

Jim mails one package that weighs  $\frac{3}{8}$  pound and another that weighs  $\frac{2}{3}$  pound. What is the total weight of both packages?

Rosa needs  $5\frac{1}{4}$  yards of ribbon for a crafts project. She already has  $2\frac{7}{8}$  yards of ribbon. How many more yards of ribbon does she need to buy?

To make fruit punch, Tyrone needs  $3\frac{3}{8}$  quarts of orange juice and  $3\frac{3}{4}$  quarts of cranberry juice. How many quarts of juice does he need in all?

# Estimating in Word Problems with Fractions continued

Name:		

4	Lin spent $\frac{5}{6}$ hour on math homework and $1\frac{3}{4}$ hours on science homework. How many hours in
	all did she spend on homework for both subjects?

Sandra rode her bike  $9\frac{1}{3}$  miles on Monday and  $6\frac{4}{5}$  miles on Tuesday. How many more miles did she ride on Monday than on Tuesday?

6 How can you make a high estimate for the sum of two fractions in a word problem?

### Fractions as Division

### Solve each problem.

- Roger has 4 gallons of orange juice. He puts the same amount of juice into each of 5 pitchers. How many gallons of orange juice are in 1 pitcher?
- 2 Marta has 8 cubic feet of potting soil and 3 flower pots. She wants to put the same amount of soil in each pot. How many cubic feet of soil will she put in each flower pot?

- Greg made 27 ounces of potato salad to serve to 10 guests at a picnic. If each serving is the same size, how much potato salad will each guest receive?
- 4 Chandra spends 15 minutes doing 4 math problems. She spends the same amount of time on each problem. How many minutes does she spend on each problem?

- Taylor has 5 yards of gold ribbon to decorate 8 costumes for the school play. She plans to use the same amount of ribbon for each costume. How many yards of ribbon will she use for each costume?
- DeShawn is using 7 yards of wire fencing to make a play area for his puppy. He wants to cut the fencing into 6 pieces of equal length. How long will each piece of fencing be?

7 What is a division word problem that can be represented by  $\frac{4}{3}$ ?

# Understanding of Multiplying by a Fraction

1 Draw a number line model to represent each multiplication problem. Then solve the problem.

$$\frac{2}{3} \times \frac{1}{2}$$

$$\frac{2}{3} \times \frac{1}{2} =$$



$$\frac{5}{6} \times \frac{3}{4}$$

- $\frac{5}{6} \times \frac{3}{4} =$
- 2 Draw an area model to represent each multiplication problem. Then solve the problem.

$$\frac{4}{5} \times \frac{2}{3}$$

$$\frac{4}{5} \times \frac{2}{3} =$$

$$\frac{3}{4} \times \frac{1}{6}$$

$$\frac{3}{4} \times \frac{1}{6} =$$

3 What type of model do you like best? Explain why.

## **Multiplying Unit Fractions to Find Area**

Each multiplication problem is used to find the area of a rectangle. Write the missing digits in the boxes to make each multiplication problem true.

- 1 length:  $\frac{1}{2}$  unit width:  $\frac{1}{8}$  unit
- 2 length:  $\frac{1}{3}$  unit width:  $\frac{1}{4}$  unit
- $\blacksquare$  length:  $\frac{1}{2}$  unit width:  $\frac{1}{3}$  unit  $\frac{1}{2} \times \frac{1}{8} =$  square unit  $\frac{1}{3} \times \frac{1}{4} =$  square unit  $\frac{1}{2} \times \frac{1}{3} =$  square unit
- 4 length:  $\frac{1}{2}$  unit width:  $\frac{1}{5}$  unit
- 5 length:  $\frac{1}{4}$  unit width:  $\frac{1}{4}$  unit  $\frac{1}{2} \times \frac{1}{5} =$  square unit  $\frac{1}{4} \times \frac{1}{4} =$
- 6 length:  $\frac{1}{3}$  unit width:  $\frac{1}{8}$  unit  $\frac{1}{3} \times \frac{1}{8} = \boxed{\phantom{0}}$

- 7 length:  $\frac{1}{2}$  unit width:  $\frac{1}{7}$  unit  $\frac{1}{2} \times \frac{1}{7} = \frac{1}{1}$
- 8 length:  $\frac{1}{3}$  unit width:  $\frac{1}{10}$  unit
- 9 length:  $\frac{1}{5}$  unit width:  $\frac{1}{6}$  unit  $\frac{1}{3} \times \frac{1}{10} =$  square unit  $\frac{1}{6} \times \frac{1}{5} =$  square unit
- Write missing digits in the boxes to make two different multiplication problems that are both true.

$$\frac{1}{\square} \times \frac{1}{4} = \frac{1}{\square}$$

$$\frac{1}{2}$$
  $\times \frac{1}{4} = \frac{1}{2}$ 

## Each multiplication problem is used to find the area of a rectangle. Write each product.

1 length:  $\frac{1}{2}$  unit width:  $\frac{1}{3}$  unit

$$\frac{1}{2} \times \frac{1}{3}$$

\_\_\_\_\_ square unit

2 length:  $\frac{2}{3}$  unit width:  $\frac{1}{2}$  unit

$$\frac{2}{3} \times \frac{1}{2}$$

\_\_\_\_\_ square unit

3 length:  $\frac{3}{2}$  unit width:  $\frac{2}{3}$  unit

$$\frac{3}{2} \times \frac{2}{3}$$

\_\_\_\_\_ square unit

4 length:  $\frac{1}{3}$  unit width:  $\frac{1}{4}$  unit

$$\frac{1}{3} \times \frac{1}{4}$$

\_\_\_\_\_ square unit

5 length:  $\frac{3}{4}$  unit width:  $\frac{1}{3}$  unit

$$\frac{3}{4} \times \frac{1}{3}$$

\_\_\_\_\_ square unit

6 length:  $\frac{5}{3}$  unit width:  $\frac{3}{4}$  unit

$$\frac{5}{3} \times \frac{3}{4}$$

square unit

7 length:  $\frac{3}{5}$  unit width:  $\frac{1}{2}$  unit

$$\frac{3}{5} \times \frac{1}{2}$$

\_\_\_\_\_ square unit

8 length:  $\frac{3}{2}$  unit width:  $\frac{3}{5}$  unit

$$\frac{3}{2} \times \frac{3}{5}$$

\_\_\_\_\_ square unit

9 length:  $\frac{3}{2}$  unit width:  $\frac{6}{5}$  unit

$$\frac{3}{2} \times \frac{6}{5}$$

\_\_\_\_\_ square unit

Describe how you could modify one tiling diagram to solve problems 1 through 3.