

# Focus & Within Grade Coherence

Task Handout, Grades 3-5

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## Major Task: Grade 3

Many problems can be solved in different ways. Decide if the following word problems can be solved using multiplication. Explain your thinking. Then solve each problem.

- a. Liam is cooking potatoes. The recipe says you need 5 minutes for every pound of potatoes you are cooking. How many minutes will it take for Liam to cook 12 pounds of potatoes?
- b. Mel is designing cards. She has 4 different colors of paper and 7 different pictures she can glue on the paper. How many different card designs can she make using one color of paper and one picture?
- c. Nina can practice a song 6 times in an hour. If she wants to practice the song 30 times before the recital, how many hours does she need to practice?
- d. Owen is building a rectangular tile patio that is 4 tiles wide and 6 tiles long. How many tiles does he need?

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## Major Task: Grade 4



Maned wolves are a threatened species that live in South America. People estimate that there are about 24,000 of them living in the wild.



The dhole is an endangered species that lives in Asia. People estimate there are ten times as many maned wolves as dholes living in the wild.

About how many dholes are there living in the wild?

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## Major Task: Grade 5

- a. Kipton has a digital scale. He puts a marshmallow on the scale and it reads 7.2 grams. How much would you expect 10 marshmallows to weigh? Why?
- b. Kipton takes the marshmallows off the scale. He then puts on 10 jellybeans and then scale reads 12.0 grams. How much would you expect 1 jellybean to weigh? Why?
- c. Kipton then takes off the jellybeans and puts on 10 brand-new pink erasers. The scale reads 312.4 grams. How much would you expect 1,000 pink erasers to weigh? Why?

## Supporting Task: Grade 3

Delilah stops under a silver maple tree and collects leaves. At home, she measures the widths of the leaves to the nearest 1/4 inch and records the measurements as shown below.

Widths of Silver Maple Tree Leaves (in Inches)				
$5\frac{3}{4}$	6	$6\frac{1}{4}$	6	$5\frac{3}{4}$
$6\frac{1}{2}$	$6\frac{1}{4}$	$5\frac{1}{2}$	$5\frac{3}{4}$	6
$6\frac{1}{4}$	6	6	$6\frac{1}{2}$	$6\frac{1}{4}$
$6\frac{1}{2}$	$5\frac{3}{4}$	$6\frac{1}{4}$	6	$6\frac{3}{4}$
6	$6\frac{1}{4}$	6	$5\frac{3}{4}$	$6\frac{1}{2}$

- Use the data to create a line plot below.
- Explain the steps you took to create the line plot.
- How many more leaves were 6 inches wide than  $6\frac{1}{2}$  inches wide?
- Find the three most frequent measurements on the line plot. What does this tell you about the typical width of a silver maple tree leaf?

# Supporting Task: Grade 4

1. Convert the measurements.

a.  $1 \text{ km} = \underline{\hspace{2cm}} \text{ m}$

b.  $4 \text{ km} = \underline{\hspace{2cm}} \text{ m}$

c.  $7 \text{ km} = \underline{\hspace{2cm}} \text{ m}$

d.  $\underline{\hspace{2cm}} \text{ km} = 18,000 \text{ m}$

e.  $1 \text{ m} = \underline{\hspace{2cm}} \text{ cm}$

f.  $3 \text{ m} = \underline{\hspace{2cm}} \text{ cm}$

g.  $80 \text{ m} = \underline{\hspace{2cm}} \text{ cm}$

h.  $\underline{\hspace{2cm}} \text{ m} = 12,000 \text{ cm}$

2. Convert the measurements.

a.  $3 \text{ km } 312 \text{ m} = \underline{\hspace{2cm}} \text{ m}$

b.  $13 \text{ km } 27 \text{ m} = \underline{\hspace{2cm}} \text{ m}$

c.  $915 \text{ km } 8 \text{ m} = \underline{\hspace{2cm}} \text{ m}$

d.  $3 \text{ m } 56 \text{ cm} = \underline{\hspace{2cm}} \text{ cm}$

e.  $14 \text{ m } 8 \text{ cm} = \underline{\hspace{2cm}} \text{ cm}$

f.  $120 \text{ m } 46 \text{ cm} = \underline{\hspace{2cm}} \text{ cm}$

# Supporting Task: Grade 5

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

a. 3 meters to centimeters       $3 \text{ m} = 300 \text{ cm}$        $3 \times 10^2 = 300$

b. 105 centimeters to meters       $105 \text{ cm} = \underline{\hspace{2cm}} \text{ m}$       \_\_\_\_\_

c. 1.68 meters to centimeters       $\underline{\hspace{2cm}} \text{ m} = \underline{\hspace{2cm}} \text{ cm}$       \_\_\_\_\_

d. 80 centimeters to meters       $\underline{\hspace{2cm}} \text{ cm} = \underline{\hspace{2cm}} \text{ m}$       \_\_\_\_\_

e. 9.2 meters to centimeters       $\underline{\hspace{2cm}} \text{ m} = \underline{\hspace{2cm}} \text{ cm}$       \_\_\_\_\_

f. 4 centimeters to meters       $\underline{\hspace{2cm}} \text{ cm} = \underline{\hspace{2cm}} \text{ m}$       \_\_\_\_\_

g. In the space below, list the letters of the problems where larger units are converted to smaller units.

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

a. 3 meters to millimeters       $\underline{\hspace{2cm}} \text{ m} = \underline{\hspace{2cm}} \text{ mm}$       \_\_\_\_\_

b. 1.2 meters to millimeters       $\underline{\hspace{2cm}} \text{ m} = \underline{\hspace{2cm}} \text{ mm}$       \_\_\_\_\_

c. 1,020 millimeters to meters       $\underline{\hspace{2cm}} \text{ mm} = \underline{\hspace{2cm}} \text{ m}$       \_\_\_\_\_

d. 97 millimeters to meters       $\underline{\hspace{2cm}} \text{ mm} = \underline{\hspace{2cm}} \text{ m}$       \_\_\_\_\_

e. 7.28 meters to millimeters       $\underline{\hspace{2cm}} \text{ m} = \underline{\hspace{2cm}} \text{ mm}$       \_\_\_\_\_

f. 4 millimeters to meters       $\underline{\hspace{2cm}} \text{ mm} = \underline{\hspace{2cm}} \text{ m}$       \_\_\_\_\_

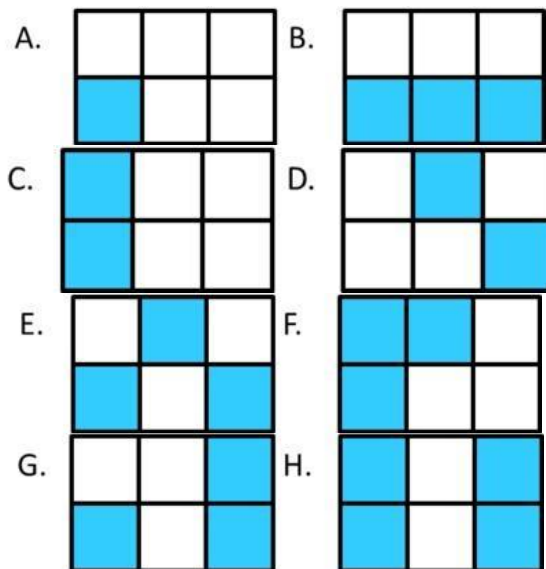
g. In the space below, list the letters of the problems where smaller units are converted to larger units.

# Within Grade Coherence Task: Grade 3

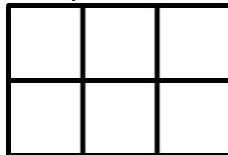
a. A small square is a square unit. What is the area of this rectangle? Explain.



b. What fraction of the area of each rectangle is shaded blue? Name the fraction in as many ways as you can. Explain your answers.



c. Shade  $\frac{1}{2}$  of the area of rectangle in a way that is different from the rectangles above.



d. Shade  $\frac{2}{3}$  of the area of the rectangle in a way that is different from the rectangles above.





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## Within Grade Coherence Task: Grade 4

There are almost 40 thousand fourth graders in Mississippi and almost 400 thousand fourth graders in Texas. There are almost 4 million fourth graders in the United States.

We write 4 million as 4,000,000. How many times more fourth graders are there in Texas than in Mississippi? How many times more fourth graders are there in the United States than in Texas? Use the approximate populations listed above to solve.

There are about 4 thousand fourth graders in Washington, D.C. How many times more fourth graders are there in the United States than in Washington, D.C.?

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## Within Grade Coherence Task: Grade 5

Some of the problems below can be solved by multiplying  $\frac{1}{8} \times \frac{2}{5}$ , while others need a different operation. Select the ones that can be solved by multiplying these two numbers. For the remaining, tell what operation is appropriate. In all cases, solve the problem (if possible) and include appropriate units in the answer.

- a. Two-fifths of the students in Anya's fifth grade class are girls. One-eighth of the girls wear glasses. What fraction of Anya's class consists of girls who wear glasses?
- b. A farm is in the shape of a rectangle  $\frac{1}{8}$  of a mile long and  $\frac{2}{5}$  of a mile wide. What is the area of the farm?
- c. There is  $\frac{2}{5}$  of a pizza left. If Jamie eats another  $\frac{1}{8}$  of the original whole pizza, what fraction of the original pizza is left over?
- d. In Sam's fifth grade class,  $\frac{1}{8}$  of the students are boys. Of those boys,  $\frac{2}{5}$  have red hair. What fraction of the class is red-haired boys?
- e. Only  $\frac{1}{20}$  of the guests at the party wore both red and green. If  $\frac{1}{8}$  of the guests wore red, what fraction of the guests who wore red also wore green?
- f. Alex was planting a garden. He planted  $\frac{2}{5}$  of the garden with potatoes and  $\frac{1}{8}$  of the garden with lettuce. What fraction of the garden is planted with potatoes or lettuce?
- g. At the start of the trip, the gas tank on the car was  $\frac{2}{5}$  full. If the trip used  $\frac{1}{8}$  of the remaining gas, what fraction of a tank of gas is left at the end of the trip?
- h. On Monday,  $\frac{1}{8}$  of the students in Mr. Brown's class were absent from school. The nurse told Mr. Brown that  $\frac{2}{5}$  of those students who were absent had the flu. What fraction of the absent students had the flu?
- i. Of the children at Molly's daycare,  $\frac{1}{8}$  are boys and  $\frac{2}{5}$  of the boys are under 1 year old. How many boys at the daycare are under one year old?
- j. The track at school is  $\frac{2}{5}$  of a mile long. If Jason has run  $\frac{1}{8}$  of the way around the track, what fraction of a mile has he run?