

Name \_\_\_\_\_

## Customary Units of Weight

**Essential Question** How can you use models to compare customary units of weight?



Measurement and Data—4.MD.A.1  
Also 4.MD.A.2

**MATHEMATICAL PRACTICES**  
MP1, MP6, MP7

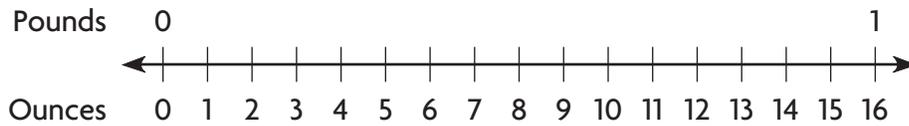
### Unlock the Problem

**Ounces** and **pounds** are customary units of weight. How does the size of a pound compare to the size of an ounce?

### Activity

**Materials** ■ color pencils

The number line below shows the relationship between pounds and ounces.



▲ You can use a spring scale to measure weight.

**STEP 1** Use a color pencil to shade 1 pound on the number line.

**STEP 2** Use a different color pencil to shade 1 ounce on the number line.

**STEP 3** Compare the size of 1 pound to the size of 1 ounce.

You need \_\_\_\_\_ ounces to make \_\_\_\_\_ pound.

So, 1 pound is \_\_\_\_\_ times as heavy as 1 ounce.

**Math Talk**

**MATHEMATICAL PRACTICES 6**

**Attend to Precision** How can you compare the size of 9 pounds to the size of 9 ounces?

- **MATHEMATICAL PRACTICE 6 Explain** how the number line helped you to compare the sizes of the units.

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**Example** Compare measures.

Nancy needs 5 pounds of flour to bake pies for a festival. She has 90 ounces of flour. How can she determine if she has enough flour to bake the pies?



**STEP 1** Make a table that relates pounds and ounces.

Pounds	Ounces
1	16
2	
3	
4	
5	

**Think:**

1 pound  $\times$  16 = 16 ounces

2 pounds  $\times$  16 = \_\_\_\_\_

3 pounds  $\times$  \_\_\_\_\_ = \_\_\_\_\_

4 pounds  $\times$  \_\_\_\_\_ = \_\_\_\_\_

5 pounds  $\times$  \_\_\_\_\_ = \_\_\_\_\_

**STEP 2** Compare 90 ounces and 5 pounds.

90 ounces



\_\_\_\_\_

5 pounds



\_\_\_\_\_

**Think:** Write each measure in ounces and compare using  $<$ ,  $>$ , or  $=$ .



Nancy has 90 ounces of flour. She needs 5 pounds of flour.

90 ounces is \_\_\_\_\_ than 5 pounds.

So, Nancy \_\_\_\_\_ enough flour to make the pies.

**Try This!** There are 2,000 pounds in 1 **ton**.

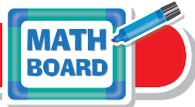
Make a table that relates tons and pounds.

Tons	Pounds
1	2,000
2	
3	

1 ton is \_\_\_\_\_ times as heavy as 1 pound.

Name \_\_\_\_\_

## Share and Show



1. 4 tons = \_\_\_\_\_ pounds

Think:  $4 \text{ tons} \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

Complete.

2. 5 tons = \_\_\_\_\_ pounds

3. 6 pounds = \_\_\_\_\_ ounces

### Customary Units of Weight

1 pound (lb) = 16 ounces (oz)

1 ton (T) = 2,000 pounds

## On Your Own

Complete.

4. 7 pounds = \_\_\_\_\_ ounces

5. 6 tons = \_\_\_\_\_ pounds

### MATHEMATICAL PRACTICE 4

**Use Symbols Algebra** Compare using  $>$ ,  $<$ , or  $=$ .

6. 1 pound  15 ounces

7. 2 tons  2 pounds

Math  
Talk

### MATHEMATICAL PRACTICES 4

**Write an Equation** What equation can you use to solve Exercise 4? Explain.

## Problem Solving • Applications



8. A landscaping company ordered 8 tons of gravel. It sells the gravel in 50-pound bags. How many pounds of gravel did the company order?

\_\_\_\_\_

9. **THINK SMARTER** If you could draw a number line that shows the relationship between tons and pounds, what would it look like? Explain.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



10. **THINK SMARTER** Write the symbol that compares the weights correctly.

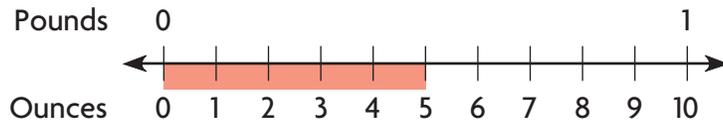


160 ounces \_\_\_\_\_ 10 pounds

600 pounds \_\_\_\_\_ 3 tons

11. **GO DEEPER** Alexis bought  $\frac{1}{2}$  pound of grapes. How many ounces of grapes did she buy?

Dan drew the number line below to solve the problem. He says his model shows that there are 5 ounces in  $\frac{1}{2}$  pound. What is his error?



**Look at the way Dan solved the problem.**  
Find and describe his error.

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**Draw a correct number line and solve the problem.**

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So, Alexis bought \_\_\_\_\_ ounces of grapes.

- MATHEMATICAL PRACTICE 6** Look back at the number line you drew. How many ounces are in  $\frac{1}{4}$  pound? **Explain.**

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Name \_\_\_\_\_

## Customary Units of Weight



**Common Core Standard—4.MD.A.1**  
*Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.*

### Complete.

1. 5 pounds = 80 ounces

Think: 1 pound = 16 ounces, so  
5 pounds =  $5 \times 16$  ounces, or 80 ounces

2. 7 tons = \_\_\_\_\_ pounds

3. 2 pounds = \_\_\_\_\_ ounces

4. 3 tons = \_\_\_\_\_ pounds

5. 10 pounds = \_\_\_\_\_ ounces

### Compare using $<$ , $>$ , or $=$ .

6. 8 pounds  80 ounces

7. 1 ton  100 pounds

8. 3 pounds  50 ounces

9. 5 tons  1,000 pounds

## Problem Solving



10. A company that makes steel girders can produce 6 tons of girders in one day. How many pounds is this?

11. Larry's baby sister weighed 6 pounds at birth. How many ounces did the baby weigh?

\_\_\_\_\_

12. **WRITE** *Math* Write a problem that can be solved by comparing pounds and ounces using a model. Include a solution. Explain why you are changing from a larger unit to a smaller unit.

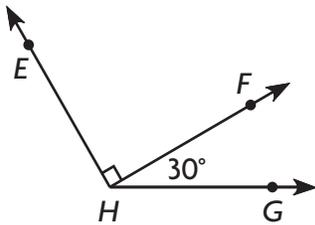
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## Lesson Check (4.MD.A.1)

1. Ann bought 2 pounds of cheese to make lasagna. The recipe gives the amount of cheese needed in ounces. How many ounces of cheese did she buy?
2. A school bus weighs 7 tons. The weight limit for a bridge is given in pounds. What is this weight of the bus in pounds?

## Spiral Review (4.NF.B.4c, 4.MD.A.1, 4.MD.C.7, 4.G.A.3)

3. What is the measure of  $\angle EHG$ ?
4. How many lines of symmetry does the square below have?



5. To make dough, Reba needs  $2\frac{1}{2}$  cups of flour. How much flour does she need to make 5 batches of dough?
6. Judi's father is 6 feet tall. The minimum height to ride a rollercoaster is given in inches. How many inches tall is Judi's father?

