Name _____

Customary Units of Weight

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

Unlock the Problem *Real World*

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.

Pounds   0   1

Ounces   0   1   2   3   4   5   6   7   8   9   10   11   12   13   14   15   16

▲ 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.

_____

_____

_____

_____

🔔 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 × 16 = 16 ounces

2 pounds × 16 = _____

3 pounds × _____ = _____

4 pounds × _____ = _____

5 pounds × _____ = _____

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 MATH BOARD

1. 4 tons = _____ pounds

Customary Units of Weight
1 pound (lb) = 16 ounces (oz)
1 ton (T) = 2,000 pounds

Think: 4 tons × _____ = _____

Complete.

✓ **2.** 5 tons = _____ pounds

3. 6 pounds = _____ ounces

Math Talk MATHEMATICAL PRACTICES ④

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

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

Problem Solving • Applications Real World

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.
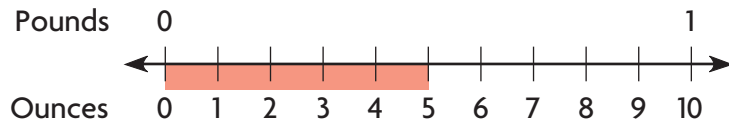
| < | = | > |

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?

Pounds   0   1

Ounces   0 1 2 3 4 5 6 7 8 9 10

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

Draw a correct number line and solve the problem.

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.**

Customary Units of Weight

Complete.

1. 5 pounds = _____**80**_____ ounces

Think: 1 pound = 16 ounces, so
5 pounds = 5 × 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 Real World

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?
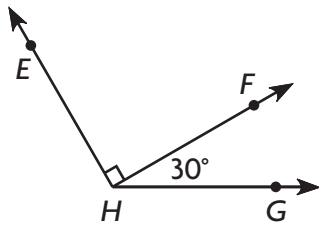
5. To make dough, Reba needs $2\frac{1}{2}$ cups of flour. How much flour does she need to make 5 batches of dough?

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?

FOR MORE PRACTICE GO TO THE Personal Math Trainer