

Name _____

Hands On

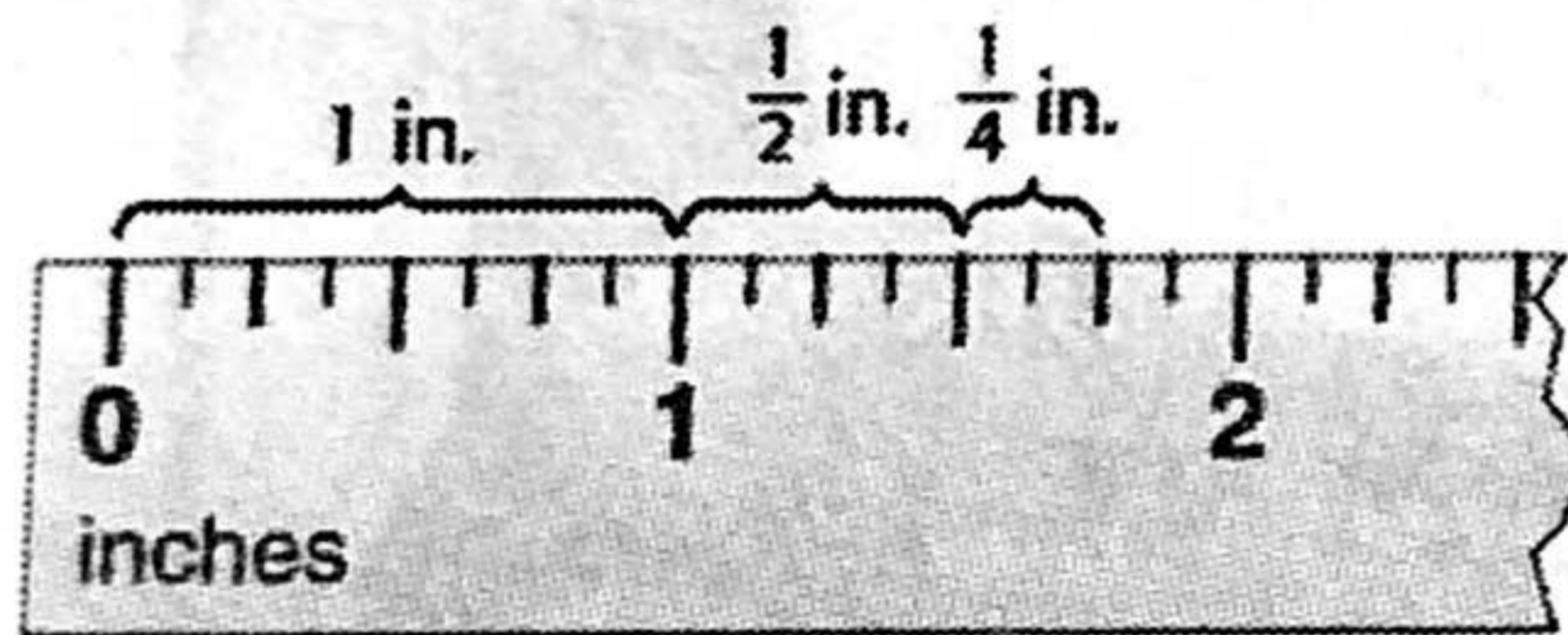
Measure with a Ruler

Lesson 1

ESSENTIAL QUESTION ?

How can I use measurement conversions to solve real-world problems?

Length is the measurement of distance between two points. You can use a ruler to measure the length of objects to the nearest half inch or quarter inch.



An **inch** is a unit of measurement of length.

If you measure an object to a smaller unit of measure, you get a more precise or accurate measurement.

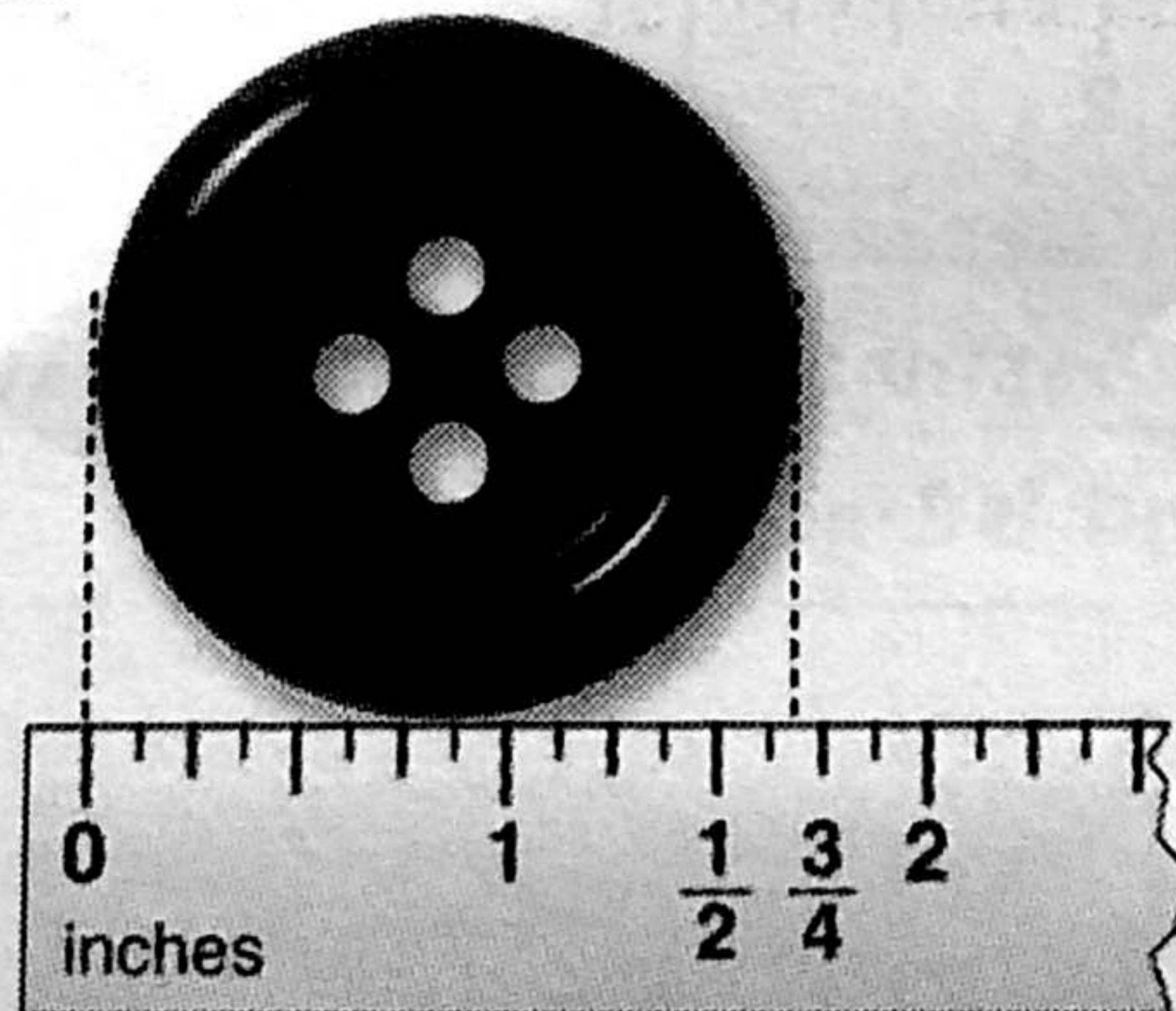
Measure It



The width of a button is the length of the widest part of the button. Find the width of the button to the nearest half inch and quarter inch.

1 Place the ruler against one edge of the object. Line up the zero on the ruler with the end of the object.

2 Find the half-inch mark that is closest to the other end. Repeat for the quarter-inch mark.



To the nearest half inch, the button is $1\frac{1}{2}$ inches wide.

To the nearest quarter inch, it is $1\frac{3}{4}$ inches wide.

Try It

Find the length of a paper clip to the nearest half inch and quarter inch.

1 Place the ruler against one edge of the object. Line up the zero on the ruler with the end of the object.

2 Find the half-inch mark that is closest to the other end. Repeat for the quarter-inch mark.

Helpful Hint

All measurements are approximations. However, if you use smaller units, you will get a more precise measure, or a measure that is closer to the exact measure.

To the nearest half inch, the paper clip is 2 inches long.

To the nearest quarter inch, it is $1\frac{3}{4}$ inches long.

Sample answers: Measurements are based on a large paperclip. Students' answers may vary.


Talk About It

1. Explain how you can tell the difference between the half-inch and quarter-inch marks when measuring an object with a ruler.

Sample answer: The half-inch line is halfway between the inch marks. The quarter-inch marks divide an inch into fourths.

2. Will you ever have the same answer when measuring to the nearest half inch and measuring to the nearest quarter inch? Explain your reasoning.

Yes; Sample answer: $\frac{2}{4}$ is the same as $\frac{1}{2}$.

3. **Mathematical PRACTICE**  **Be Precise** Circle the more precise measurement of the button in the first activity.

$1\frac{1}{2}$ inches

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

Name _____

Practice It

Measure the length of each to the nearest half inch and quarter inch.

4.



Half Inch: $1\frac{1}{2}$ inches
Quarter Inch: $1\frac{3}{4}$ inches

5.



Half Inch: $2\frac{1}{2}$ inches
Quarter Inch: $2\frac{1}{2}$ inches

Sample answers: 6–9

Find the length of each object to the nearest half inch and quarter inch.

6. width of a book

$8\frac{1}{2}$ inches; $8\frac{3}{4}$ inches

7. length of a pencil

$7\frac{1}{2}$ inches; $7\frac{1}{2}$ inches

8. width of a calculator

3 inches; 3 inches

9. length of a tape dispenser

6 inches; $5\frac{3}{4}$ inches

Draw a line segment with each of the following lengths.

10. $1\frac{1}{4}$ inches



11. $2\frac{1}{2}$ inches



12. $3\frac{3}{4}$ inches



MY Homework

Lesson 1

Hands On: Measure with a Ruler

Homework Helper



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Find the length of the push pin to the nearest half inch and quarter inch.

1 Place the ruler against one edge of the object. Line up the zero on the ruler with the end of the object.



2 Find the half-inch mark that is closest to the other end. Repeat for the quarter-inch mark.

To the nearest half inch, the push pin is 1 inch long. To the nearest quarter inch, it is $1\frac{1}{4}$ inches long.

Practice

Measure the length of each to the nearest half inch and quarter inch.

1.



1 inch; 1 inch

2.



$2\frac{1}{2}$ inches; $2\frac{1}{2}$ inches

Find the length of each object to the nearest half inch and quarter inch. Sample answers: 3, 4

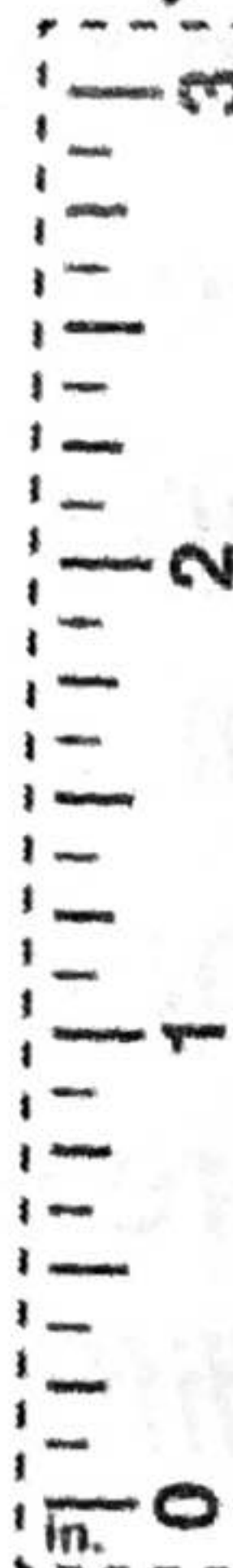
3. width of an MP3 player

$2\frac{1}{2}$ inches; $2\frac{1}{4}$ inches

4. length of a stapler

6 inches; $5\frac{3}{4}$ inches

← Cut and use this inch ruler.



Draw a line segment with each of the following lengths.

5. $2\frac{1}{4}$ inches



6. $\frac{3}{4}$ inch



Vocabulary Check

7. Choose the correct word(s) to complete the sentence below.

Length is the measurement of distance between two points.



Problem Solving

8. The height of Josie's dog is $11\frac{1}{4}$ inches to the nearest quarter inch and 11 inches to the nearest half inch. Which measurement is more precise?

$11\frac{1}{4}$ inches

9. Allison has a ruler that is marked in fourths of an inch and a tape measure that is marked in halves of an inch. Which measuring tool will give Allison a more precise measure?

ruler

Mathematical PRACTICE 6 **Be Precise** Gretchen measured the length of her toaster to the nearest half inch to be 9 inches. Steve measured the toaster to the nearest quarter inch and found that it measured $9\frac{1}{4}$ inches. Who used a more precise measurement?

Steve

