Tenths

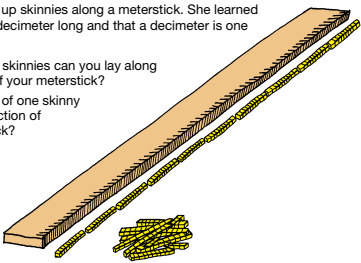**Measuring to the Nearest Tenth of a Meter**

Discuss

In the last lesson, Lee Yah used skinnies to measure to the nearest decimeter. She lined up skinnies along a meterstick. She learned that a skinny is one decimeter long and that a decimeter is one tenth of a meter.

1. A. How many skinnies can you lay along the edge of your meterstick?
   B. The length of one skinny is what fraction of a meterstick?

The fraction for one-tenth can be written as a common fraction ($\frac{1}{10}$). The **denominator** (the number on the bottom) tells us that the meterstick is divided into ten equal parts. The **numerator** (the number on the top) tells us that a skinny is one of these parts.

The fraction for one-tenth can also be written as a decimal fraction (0.1). The decimal point tells us that the numbers to the right of the decimal point are smaller than 1.

$\frac{1}{10}$ ← numerator
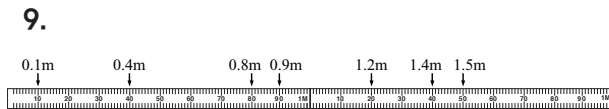← denominator

0.1
↑
decimal point

2. Place 3 skinnies along the edge of a meterstick.
   A. The length of 3 skinnies is what fraction of a meter?
   B. Write this fraction as a common fraction and as a decimal fraction.

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3. Place 5 skinnies along the edge of a meterstick.
   A. The length of 5 skinnies is what fraction of a meter?
   B. Write this fraction as a decimal fraction.
   C. Write this fraction as a common fraction in two different ways.

4. Lee Yah measured several distances to the nearest tenth of a meter using skinnies and a meterstick. Write the lengths to the nearest tenth of a meter as a decimal fraction.

	Distance	Measurement of Distance	Length to the Nearest Tenth of a Meter
A.	Length of table	1 meterstick and 2 skinnies	1.2 m
B.	Length of calculator	1 skinny	
C.	Length of floor tile	4 skinnies	
D.	Length of string	1 meterstick and 4 skinnies	
E.	Table height	8 skinnies	
F.	Light switch height	1 meterstick and 5 skinnies	
G.	Cabinet height	9 skinnies	

5. Look at the measurements in Lee Yah's table. Which length is the shortest?

6. Which length is the longest?

7. Nicholas found 0.9 m and 1.2 m on the metersticks below.

(0.9m)   (1.2m)

   A. Which is longer, 0.9 m or 1.2 m?
   B. How much longer? How do you know?

8. Which is longer 1.5 m or 0.8 m? How do you know?

9. With your partner, locate the distances Lee Yah measured in Question 4 on a pair of metersticks. List the lengths in order from shortest to longest.

10. A. Describe five distances that are shorter than 2 meters.
   B. Measure each length to the nearest tenth of a meter.
   C. Put your measurements in order from shortest to longest.

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*Answers and/or discussion are included in the lesson.

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Questions 1–32 (SG pp. 454–461)

1. A. 10 skinnies
   B. $\frac{1}{10}$ or 0.1 m

2. A. three-tenths of a meter
   B. $\frac{3}{10}$ and 0.3

3. A.* five-tenths of a meter
   B.* 0.5
   C.* $\frac{5}{10}$ m $= \frac{1}{2}$ m

4. A. 1.2 m
   B. 0.1 m
   C. 0.4 m
   D. 1.4 m
   E. 0.8 m
   F. 1.5 m
   G. 0.9 m

5. length of the calculator, 0.1 m

6. light switch height, 1.5 m

7. A. 1.2 m is longer
   B. 0.3 m longer; Possible explanation: I counted tenths of a meter like the hopper.

8. 1.5 m is longer because I have 1 whole meter stick and 5 skinnies. 0.8 is only 8 skinnies.

9.

0.1m   0.4m   0.8m 0.9m   1.2m   1.4m 1.5m

10.* Answers will vary.

11. A. 10 skinnies

 B. $\frac{1}{10}$

12. A. one-tenth, two-tenths, three-tenths, four-tenths, five-tenths, six-tenths

 B. six-tenths

 C. $\frac{6}{10}$ and 0.6

13. A. one-tenth, two-tenths, three-tenths, four-tenths

 B. four-tenths

 C. $\frac{4}{10}$ and 0.4

14. A. one-tenth, two-tenths . . . ten-tenths

 B. 10 tenths

 C.* The ten in the denominator of $\frac{10}{10}$ means that the whole is divided into 10 equal parts and the 10 in the numerator means we are interested in all ten parts. 1 means one whole and 1.0 represents 1 whole and no tenths. All three represent the same number.

15. A. 2 flats

 B. 2

16. A. one-tenth, two-tenths . . . ten-tenths

 B.* ten-tenths or one whole

 C. eleven-tenths or one and one-tenth

 D. 20 skinnies

 E. 20 tenths

17. 1.4, $1\frac{4}{10}$, $\frac{14}{10}$

18. A. 19 skinnies

 B. 1 flat and 9 skinnies

A Flat as One Whole

To think about decimal fractions, we used the length of one meterstick as a unit whole. To think about decimal fractions another way, we are going to use one flat as the unit whole.

11. Use skinnies to cover a flat.
 A. How many skinnies did you use?
 B. If a flat is the unit whole, then what fraction is a skinny?

12. A. Place 6 skinnies on your flat. Skip count by tenths as you place each skinny. Start like this: one-tenth, two-tenths, three-tenths, etc. Write down the words that you say as you count.
 B. What fraction of the flat is 6 skinnies?
 C. Write this fraction as a common fraction and a decimal fraction.

13. A. Nicholas placed 4 skinnies on his flat. Put 4 skinnies on your flat. Skip count by tenths as you place each skinny. Write down the words that you say as you count.
 B. What fraction of the flat is 4 skinnies?
 C. Write this fraction as a common fraction and as a decimal fraction.

14. A. Linda placed 10 skinnies on her flat. Put 10 skinnies on your flat. Skip count by tenths as you place each skinny. Write down the words that you say as you count.
 B. How many tenths is 10 skinnies?
 C. Linda noticed that 10 skinnies covered one whole. She recorded this 3 ways: $\frac{10}{10}$, 1, and 1.0. Explain how each of these represents the same number.

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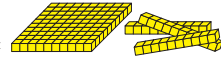
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Exploring Tenths with the Tenths Helper

Use skinnies and the *Tenths Helper* page from the *Student Activity Book* to answer Questions 15–18.

15. A. Cover your Tenths Helper with flats. How many flats did you use?
 B. What number does this represent?

16. A. Place 10 skinnies on your Tenths Helper. Count by tenths as you place each skinny on the chart.
 B. When you are skip counting by tenths, what number comes after 9 tenths? (Hint: There is more than one answer to this question.)
 C. Continue placing skinnies on your Tenths Helper. What number will you say as you place the eleventh skinny? (Hint: There is more than one answer to this question.)
 D. How many skinnies does it take to fill the Tenths Helper?
 E. How many tenths are in two wholes?

17. Michael placed 14 skinnies on his Tenths Helper. Write the number this represents in more than one way.

18. A. Grace wanted to build the number 1.9 on her Tenths Helper using skinnies. How many skinnies will she need to build this number?
 B. Grace decided to use both flats and skinnies to build this number. How many flats will she need? How many skinnies?

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*Answers and/or discussion are included in the lesson.

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19. **A.** $\frac{17}{10}$, $1\frac{7}{10}$, or 1.7

B. $\frac{4}{10}$ or 0.4 (Just writing .4 is acceptable.)

C. $\frac{15}{10}$, $1\frac{5}{10}$, or 1.5

D. $\frac{9}{10}$ or 0.9

E. $\frac{1}{10}$ or 0.1

F. $\frac{16}{10}$, $1\frac{6}{10}$, or 1.6

G. $\frac{18}{10}$, $1\frac{8}{10}$, 1.8

20.

0.1		$\frac{1}{10}$
0.2		$\frac{2}{10}$
0.3		$\frac{3}{10}$
0.4		$\frac{4}{10}$
0.5		$\frac{5}{10}$
0.6		$\frac{6}{10}$
0.7		$\frac{7}{10}$
0.8		$\frac{8}{10}$
0.9		$\frac{9}{10}$
1.0		$\frac{10}{10}$
1.1	$1\frac{1}{10}$	$\frac{11}{10}$
1.2	$1\frac{2}{10}$	$\frac{12}{10}$
1.3	$1\frac{3}{10}$	$\frac{13}{10}$
1.4	$1\frac{4}{10}$	$\frac{14}{10}$
1.5	$1\frac{5}{10}$	$\frac{15}{10}$
1.6	$1\frac{6}{10}$	$\frac{16}{10}$
1.7	$1\frac{7}{10}$	$\frac{17}{10}$
1.8	$1\frac{8}{10}$	$\frac{18}{10}$
1.9	$1\frac{9}{10}$	$\frac{19}{10}$
2.0	$1\frac{10}{10}$	$\frac{20}{10}$

21. **A.** 0.7 or 7 tenths or $\frac{7}{10}$

B. 0.9 or 9 tenths or $\frac{9}{10}$

22. **A.** 13 tenths or 1.3

B. 14 tenths or 1.4
12 tenths or 1.2

23. 2.0 or 20 tenths or 2 wholes

24. 2.1 or 21 tenths or $\frac{21}{10}$

25. 4.6

26.* 10

***Answers and/or discussion are included in the lesson.**

27. A.

B.

C.

D.

E.

28. A. $2\frac{5}{10}$ and 2.5; $2 + .5 = 2.5$

B. $12\frac{4}{10}$ and 12.4; $10 + 2 + .4 = 12.4$

C. $\frac{9}{10}$ and 0.9; $0 + .9 = .9$

D. 10.3 and $10\frac{3}{10}$; $10 + .3 = 10.3$

29. Answers will vary.

30. Answers will vary. One example is given for 2.3:

A. 2 metersticks and 3 skinnies

B.

C. $2\frac{3}{10}$

D. 2.3

31. Answers will vary

32. Answers will vary.

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(Homework page reproduction)

Homework

1. Jessie measured the height of the cabinet with one meterstick and 6 skinnies. Write T beside the true statements and F beside the false statements.

   A. The cabinet is taller than 1 meter but shorter than 2 meters.
   B. The cabinet is shorter than 1 meter.
   C. The cabinet is 16 meters tall.
   D. The cabinet is $1\frac{6}{10}$ meters tall.
   E. The cabinet is 1.6 meters tall.
   F. The cabinet is .16 meters tall.

2. A. Jacob placed 6 skinnies along the edge of a meterstick. The length of 6 skinnies is what fraction of a meter?
   B. Write this fraction as both a decimal fraction and a common fraction.

3. A. Jessie measured the length of a table in her classroom using skinnies. She found the length of the table was 18 skinnies. How many whole meters and how many more tenths does this represent?
   B. Write the length of the table in more than one way.

4. A. Locate 1.6 meters, 0.6 meters, and 1.8 meters on the metersticks.

   B. Write the measurements in order from smallest to largest.

5. A. What number is two tenths smaller than 1.8?
   B. What number is two tenths larger than 2.0?

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Homework (SG pp. 462)

Questions 1–5

1. A. T
   B. F
   C. F
   D. T
   E. T
   F. F

2. A. six-tenths of a meter
   B. 0.6 m, $\frac{6}{10}$ m

3. A. one whole meter and 8 tenths
   B. 1.8 m, $1\frac{8}{10}$ m, or $\frac{18}{10}$ m

4. A.

   0.6m   1.6m   1.8m

   B. 0.6 m, 1.6 m, 1.8 m

5. A. 1.6
   B. 2.2

Student Activity Book

Tenths Helper (SAB p. 403)

See Question 20 in the *Student Guide* Answer Key.

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Name _____ Date _____

Tenths Helper

Place whole skinnies on this chart to find how many tenths are in one whole and two wholes. Skip count by tenths.

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