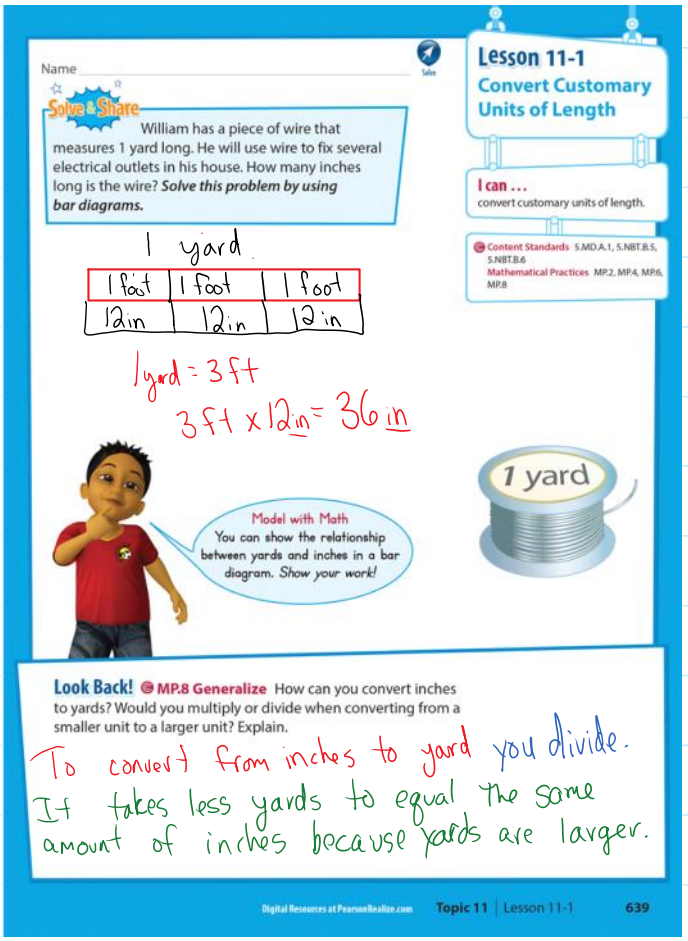
Lesson 11-1

Tuesday, February 25, 2020 1:16 PM



Name _____

Solve & Share

William has a piece of wire that measures 1 yard long. He will use wire to fix several electrical outlets in his house. How many inches long is the wire? ***Solve this problem by using bar diagrams.***

1 yard

1 foot	1 foot	1 foot
12 in	12 in	12 in

1 yard = 3 ft

3 ft x 12 in = 36 in

Lesson 11-1
Convert Customary Units of Length

I can ...
convert customary units of length.

Content Standards 5.MD.A.1, 5.NBT.B.5, 5.NBT.B.6
Mathematical Practices MP.2, MP.4, MP.6, MP.8

Look Back! MP.8 Generalize How can you convert inches to yards? Would you multiply or divide when converting from a smaller unit to a larger unit? Explain.

To convert from inches to yard you divide. It takes less yards to equal the same amount of inches because yards are larger.

How Do You Change from One Unit of Length to Another?

A

Some frogs can jump $11\frac{1}{4}$ feet. What are some other ways to describe the same distance?

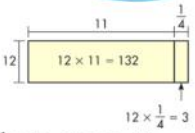
The table shows equivalent measures.

1 foot (ft) = 12 inches (in.)
1 yard (yd) = 3 ft = 36 in.
1 mile (mi) = 1,760 yd = 5,280 ft

B **To change larger units to smaller units, multiply.**

$11\frac{1}{4}$ ft = ☐ in.

You know 1 foot equals 12 inches.



$11\frac{1}{4} \times 12 = 132 + 3 = 135$

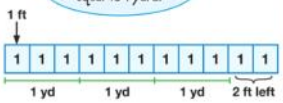
So, $11\frac{1}{4}$ feet = 135 inches.

C **To change smaller units to larger units, divide.**

Ed's frog jumped 11 feet. How many yards is this?

11 ft = ☐ yd ☐ ft

You know 3 feet is equal to 1 yard.



11 ÷ 3 = 3 R2 So, 11 feet = 3 yards, 2 feet.

Convince Me! MP.8 Generalize In the example above, explain how you could use a mixed number to write 11 feet as an equivalent measure in yards.

11ft ÷ 3ft = 3,2 or $3\frac{2}{3}$ yards

Name _____

Guided Practice

Do You Understand?

1. If you want to convert yards to feet, what operation would you use?
Multiplication
2. If you want to convert feet to miles, what operation would you use?
Division
3. What are some tools you could select to measure length? Explain when you would use them.
Ruler, Yard Stick, or a Tape Measure

Do You Know How?

In **4–8**, convert each unit of length.

4. 9 ft = 3 yd
9ft ÷ 3ft = 3yds
5. 8 ft 7 in. = 103 in.
8ft x 12in = 96in
96in + 7in = 103in
6. $5\frac{1}{2}$ ft = 66 in.
5ft x 12in = 60in
½ ft x 12in = 6in
7. 288 in. = 8 yd
8. 219 in. = 18 ft 3 in. or $18\frac{1}{4}$ ft
$18\frac{3}{12} \div \frac{3}{3} = 18\frac{1}{4}$

Independent Practice

In **9** and **10**, complete the table to show equivalent measures.

9.

Feet	Inches
1	
2	
	36
4	

10.

Yards	Feet
1	
	6
3	
4	

In **11–16**, convert each unit of length.

11. 3 yd = ____ in.
12. 324 ft = ____ yd
13. $2\frac{2}{3}$ mi = ____ ft
14. 56 ft = 18 yd 2 ft
15. $12\frac{1}{2}$ ft = 150 in.
12 ft x 12in = 144in
½ ft x 12in = 6in
144 + 6 = 150in.
16. 6 in. = ____ ft

In **17–19**, compare lengths. Write >, <, or = for each ◯.

17. 100 ft ◯ 3 yd
18. 74 in. < 2 yd 2 in.
6ft 2in
3ft | 74
-72
2
2yds x 3ft = 6ft
6ft x 12in = 72in
72in + 2in = 74in
19. 5,200 ft 145 in. ◯ 1 mi 40 in.

*For another example, see Set A on page 689.

6ft ÷ 3ft = 2ft
2ft 2in

Math Practices and Problem Solving

20. **Number Sense** Which number would be greater, the height of a tree in feet or the height of the same tree in yards?

21. **MP.2 Reasoning** The dimensions of the nation's smallest post office are 8 feet 4 inches by 7 feet 3 inches. Why would you use the measurement 8 feet 4 inches instead of 7 feet 16 inches?

22. Roger earns $24 a week mowing lawns. He spends $\frac{1}{6}$ of his earnings on lunch and $\frac{2}{3}$ of his earnings on music. He saves the rest. How many dollars does Roger save? Tell how you found the answer.

23. Ariana has 144 peaches. She has to pack 9 boxes with an equal number of peaches. How many peaches should she pack in each box?

24. **Higher Order Thinking** How do you convert 108 inches to yards?
Divide 108 in by 12in in a foot to get 9ft. Then Divide 9ft by 3ft in a yard and you get 3 yards.

25. **Vocabulary** What is an appropriate customary unit to use when measuring the length of a driveway? Justify your answer.

Common Core Assessment

26. Is the measurement greater than 7 feet? Choose Yes or No.

2 yards	○ Yes	X No
2 yards 2 inches	○ Yes	X No
2 yards 2 feet	X Yes	○ No
3 yards	X Yes	○ No

2 yards = 6ft
6ft + 2ft = 8ft
3yds x 3ft = 9ft

27. Is the measurement less than 435 inches? Choose Yes or No.

37 feet	○ Yes	○ No
36 feet 2 inches	○ Yes	○ No
12 yards 3 inches	○ Yes	○ No
12 feet 3 inches	○ Yes	○ No

3 yards

7. 12in | 288in
×24 ft
-24
48
-48
0

3ft | 24ft
8 yds
-24
0

Complete 14, 15, 18, 24, 26

18 r2
3ft | 56 ft
-3
26
-24
2