

Name _____



Practice

Video

Tools

Games

Additional Practice 8-2

Multiply a Whole Number by a Fraction

Another Look!

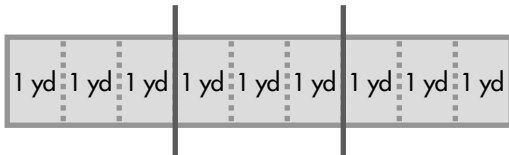
Tyler used $\frac{2}{3}$ of a 9-yard-long piece of fabric to make a jacket. What was the length of fabric, in yards, that he used?

Remember:
 $\frac{2}{3}$ of 9 means $\frac{2}{3} \times 9$.



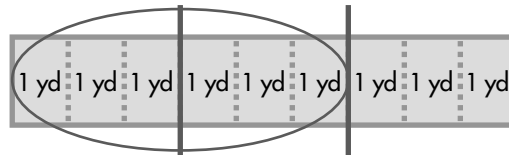
Step 1

Draw 9 pieces each representing 1 yard and separate them into 3 equal groups.



Step 2

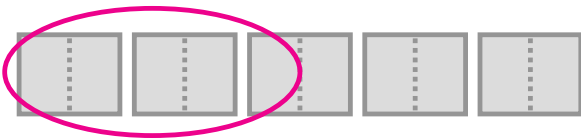
Circle 2 of the groups.



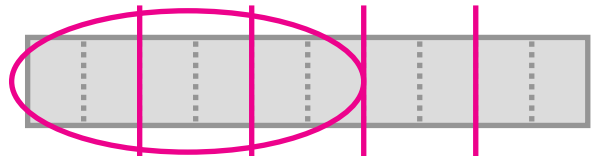
So, Tyler used 6 yards of fabric.

Leveled Practice In 1–8, find each product. Use models to help.

1. $\frac{5}{10} \times 5$ $\frac{5}{2}$ or $2\frac{1}{2}$



2. $\frac{3}{5} \times 10$ 6



3. $\frac{5}{6} \times 3$
 $\frac{15}{6}$ or $2\frac{1}{2}$

4. $\frac{5}{6}$ of 12
10

5. $\frac{3}{5}$ of 20
12

6. $\frac{2}{3}$ of 8
 $\frac{16}{3}$ or $5\frac{1}{3}$

7. $\frac{2}{9} \times 3$
 $\frac{6}{9}$ or $\frac{2}{3}$

8. $\frac{4}{7} \times 10$
 $\frac{40}{7}$ or $5\frac{5}{7}$



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Topic 8 | Lesson 8-2

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- 9. Critique Reasoning** Find the error in the work below. Then show the correct calculation.

$$\frac{8}{12} \times 6 = 8 \times \frac{1}{12} \times 6 = 8 \times \frac{1}{72} = \frac{8}{72} = \frac{1}{9}$$

The denominator should not be multiplied by 6, only the numerator.

$$\frac{8}{12} \times 6 = 8 \times \frac{1}{12} \times 6 = 8 \times \frac{6}{12} = 8 \times \frac{1}{2} = 4$$

- 10.** A scientist measured the amount of rainfall during the afternoon. It rained 0.43 inch each hour. What was the total amount of rainfall in 3 hours?

1.29 inches

- 11.** A giraffe can run at a speed of 32 miles per hour. Which animal listed in the chart has a speed that is $\frac{15}{16}$ of the speed of a giraffe? Explain how you found your answer. **Cat; Sample explanation:**

$\frac{15}{16} < 1$, so the animal's speed is less than 32 mph.
The only speed less than 32 is the cat's speed.

Animal	Speed (in miles per hour)
Cat	30
Cheetah	70
Jackal	35

- 12.** If a frilled lizard is 90 centimeters long, how long is the tail?

60 centimeters



The frilled lizard's tail is $\frac{2}{3}$ of its length.

- 13. Higher Order Thinking** Eric has 240 coins in his collection. $\frac{11}{20}$ of the coins are pennies. $\frac{4}{20}$ of the coins are nickels. The rest of the coins are quarters. How many of the coins are quarters? Explain how you found your answer.

Eric has 60 quarters. Sample explanation: Add $\frac{11}{20}$ to $\frac{4}{20}$ and subtract the sum, $\frac{15}{20}$, from $\frac{20}{20}$ to find the part that is quarters. $\frac{20}{20} - \frac{15}{20} = \frac{5}{20}$. Then find $\frac{5}{20}$ of 240. $\frac{5}{20} \times 240 = 60$

Assessment Practice

- 14.** Select all of the equations that would be made true with the fraction $\frac{2}{3}$.

☒ ☐ $\times 4 = \frac{8}{3}$

☐ ☐ $\times 15 = 12$

☒ ☐ $\times 21 = 14$

☒ $\frac{1}{6} \times 4 = \square$

- 15.** Select all of the equations that would be made true with the number 14.

☐ $\frac{11}{12} \times 12 = \square$

☒ $\frac{7}{9} \times 18 = \square$

☐ $\frac{3}{8} \times 16 = \square$

☐ $\frac{3}{4} \times 12 = \square$