So, Frank mowed $\frac{1}{3}$ of the lawn on Saturday.

Guided Practice

Multiply. Write in simplest form. (Examples 1–3)

1. $\frac{1}{8} \times \frac{1}{2} = \frac{1}{16}$

2. $\frac{2}{3} \times \frac{4}{5} = \frac{8}{15}$

3. $\frac{4}{5} \times 10 = 8$

Show your work.

4. $\frac{3}{4} \times 12 = 9$

5. $\frac{3}{10} \times \frac{5}{6} = \frac{1}{4}$

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

7. Rick has $\frac{1}{2}$ of a footlong sub left from ye

Yourself!

7. Rick has $\frac{1}{2}$ of a footlong sub left from yesterday. He ate $\frac{1}{3}$ of the leftover sandwich as a snack. What fraction of the entire sandwich did he eat as a snack? (Example 4)

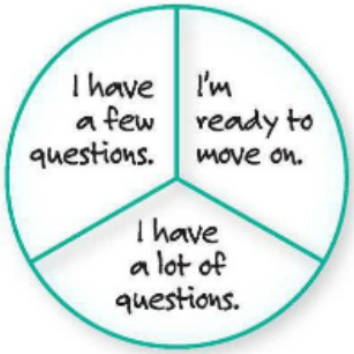
$\frac{1}{6}$

8. **Building on the Essential Question** If two positive fractions are less than 1, why is their product also less than 1?

Sample answer: Multiplying a number *x* by a fraction that is less than 1 will yield a product that is less than the number *x*.

Rate Yourself!

Are you ready to move on? Shade the section that applie



For more help, go online to access a Personal Tutor.

Tuto

FOLDABLES Time to update your Foldable

Independent Practice

eHelp Go online for Step-by-Step Solutions

Multiply. Write in simplest form. (Examples 1–3)

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

2. $\frac{3}{4} \times \frac{5}{8} = \frac{15}{32}$

3. $\frac{2}{3} \times 4 = 2\frac{2}{3}$

Show your work.

4. $\frac{5}{6} \times 15 = 12\frac{1}{2}$

5. $\frac{2}{3} \times \frac{1}{4} = \frac{1}{6}$

6. $\frac{4}{9} \times \frac{3}{8} = \frac{1}{6}$

7. **Financial Literacy** Juanita spent $\frac{3}{4}$ of her allowance at the mall. Of the money spent at the mall, $\frac{1}{2}$ was spent on new earphones. What part of her allowance did Juanita spend on earphones? (Example 4)

$\frac{3}{8}$

8. A paint store has 35 gallons of paint in storage, $\frac{2}{5}$ of which are for outdoor use. The others are for indoor use. If each gallon costs $22, what is the total cost of the indoor paint in storage?

$462

9 Homeroom 101 and Homeroom 102 share a hallway bulletin board. If Homeroom 101 uses $\frac{3}{5}$ of their half to display artwork, what fraction of the bulletin board is used to display Homeroom 101's artwork?

$\frac{3}{10}$

10. CCSS **Use Math Tools** Mr. Williams' physical education class lasts $\frac{7}{8}$ hour.

Part of $\frac{7}{8}$-hour Class	
playing game	$\frac{1}{2}$
instruction	$\frac{1}{5}$
warm-up and cool-down	$\frac{3}{10}$

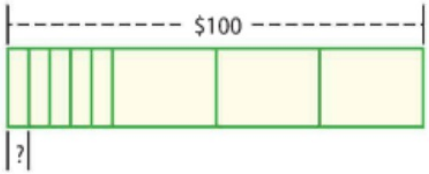
a. How many minutes are spent warming up and cooling down?

$15\frac{3}{4}$ min

b. How many minutes are *not* spent on instruction? Explain.

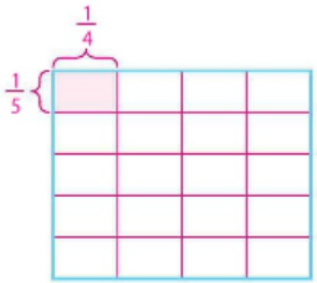
If $\frac{1}{5}$ of the time is spent on instruction, then $\frac{4}{5}$ of the $\frac{7}{8}$-hr class is not. So, $\frac{4}{5} \times \frac{7}{8} = \frac{7}{10}$. $\frac{7}{10} \times 60$ min $= 42$ min

11. **Multiple Representations** Use the bar diagram.



a. **Words** Write a real-world problem represented by the bar diagram. **Sample answer: Olivia withdrew $\frac{3}{4}$ of her savings. She used $\frac{1}{5}$ of what was left to buy a book. If she had $100 in savings, how much did she spend on the book?**

b. **Models** Draw an area model to represent the situation.



c. **Words** Explain how you would solve your problem. **Sample answer: Multiply $\frac{1}{5} \times \frac{1}{4}$. Multiply the product, $\frac{1}{20}$ by $100. She spent $5 on a book.**

H.O.T. Problems Higher Order Thinking

12. **Reason Inductively** State whether each statement is *true* or *false*. If the statement is *false*, provide a counterexample.

a. The product of two fractions that are each between 0 and 1 is also between 0 and 1. **true**

b. The product of a mixed number between 4 and 5 and a fraction between 0 and 1 is always less than 4. **false; Sample answer: $4\frac{9}{10} \times \frac{9}{10} = 4\frac{41}{100}$**

c. The product of two mixed numbers that are each between 4 and 5 is between 16 and 25. **true**

13. **Identify Structure** If the product of two positive fractions a and b is $\frac{15}{56}$, find three pairs of possible values for a and b. **Sample answer: $a = \frac{3}{8}$ and $b = \frac{5}{7}$; $a = \frac{5}{8}$ and $b = \frac{3}{7}$; $a = \frac{5}{14}$ and $b = \frac{3}{4}$**

14. **Persevere with Problems** Justify why $\frac{a}{b} \times \frac{b}{c} \times \frac{c}{d} \times \frac{d}{e}$ is equal to $\frac{a}{e}$ when b, c, d, and e are not zero. **Simplify the fraction $\frac{a}{b} \times \frac{b}{c} \times \frac{c}{d} \times \frac{d}{e}$ by dividing out the common factors b, c, and d. Thus, the remaining fraction is $\frac{a}{e}$.**

15. **Model with Mathematics** Write a word problem in which you multiply a fraction by a number greater than 1. Estimate the product, then compare the product to your estimate. **Sample answer: Makayla gives her cat $\frac{3}{4}$ cup of cat food each day. How much cat food will she have given her cat after 14 days?; Since $\frac{3}{4}$ is close to 1, Makayla will have given her cat about 1×14 or 14 cups of cat food.; $\frac{3}{4} \times 14 = 10\frac{1}{2}$ which is close to 14.**