Name: _____ Date: _____

6.3 Multiplying Proper Fractions

***MathLinks 8*, pages 210–215**

Key Ideas Review

Choose from the following terms to complete #1 to #3.

estimate multiply numerators paper folding

1. Two proper fractions can be multiplied using _____ or diagrams.
2. A rule for multiplying two proper fractions is to multiply the _____ and _____ the denominators.
3. You can _____ the product of two proper fractions by first deciding whether each fraction is closer to 0, $\frac{1}{2}$, or 1.

Practise and Apply

4. Estimate and calculate each product. Show your thinking and express your answer in lowest terms.

a) $\frac{2}{3} \times \frac{5}{6}$

Circle the closest estimate: 0 $\frac{1}{2}$ 1

b) $\frac{4}{9} \times \frac{1}{5}$

Circle the closest estimate: 0 $\frac{1}{2}$ 1

c) $\frac{2}{5} \times \frac{3}{8}$

Circle the closest estimate: 0 $\frac{1}{2}$ 1

d) $\frac{2}{3} \times \frac{3}{5}$

Circle the closest estimate: 0 $\frac{1}{2}$ 1

e) $\frac{7}{8} \times \frac{3}{5}$

Circle the closest estimate: 0 $\frac{1}{2}$ 1

f) $\frac{9}{10} \times \frac{8}{9}$

Circle the closest estimate: 0 $\frac{1}{2}$ 1

Name: _____ **Date:** _____

5. Tamara lives $\frac{3}{4}$ km from school. She runs $\frac{1}{3}$ of the distance and then walks the rest of the way to her house. How far does Tamara run? Show your thinking.

6. In a grade 8 class, $\frac{1}{2}$ of the students play piano. Of these students, $\frac{1}{4}$ also play guitar. What fraction of this class play both piano and guitar?

7. On a Saturday, Sid helped his father do yard work for $\frac{5}{6}$ of the afternoon. He mowed lawn for $\frac{3}{5}$ of this time. What fraction of the afternoon did Sid spend mowing the lawn? Estimate, then solve.

Estimate:

Solution:

8. Vancouver's population is approximately $\frac{2}{5}$ the population of Toronto. Québec City's population is approximately $\frac{1}{3}$ of Vancouver's population. Compare Québec City's population to Toronto's population.

9. Hayden's hard drive is $\frac{2}{5}$ filled. The operating system takes up $\frac{1}{10}$ of that space. How much of the whole hard drive is filled by the operating system? Use a model to show your thinking.

10. An order of bruschetta for 4 uses $\frac{1}{3}$ of a loaf of French bread. How much of a loaf does each person get when they share the order equally?

Name: _____ Date: _____

6.4 Multiplying Improper Fractions and Mixed Numbers

MathLinks 8, pages 216–221

Key Ideas Review

1. Decide whether each of the following statements is true or false. Circle the word *True* or *False*. If the statement is false, rewrite it to make it true.

   a) **True/False** You can model the multiplication of two mixed numbers or improper fractions using partial areas of a rectangle.

   b) **True/False** You can calculate the product of two mixed numbers or improper fractions by multiplying the whole numbers closest to them.

   c) **True/False** Two mixed numbers can be multiplied by expressing them as improper fractions and then multiplying the numerators by the denominators.

Practise and Apply

2. Express each improper fraction as a mixed number.

   a) $\frac{9}{5}$ b) $\frac{13}{6}$

3. Express each mixed number as an improper fraction.

   a) $2\frac{1}{2}$ b) $4\frac{2}{3}$

4. Use a model to determine each product.

   a) $1\frac{1}{2} \times \frac{1}{3}$ b) $1\frac{1}{3} \times 2\frac{1}{4}$

5. Estimate and calculate. Show your thinking.

   a) $\frac{2}{3} \times \frac{6}{5}$
   Estimate: _____
   Calculate:

   b) $4 \times 2\frac{1}{3}$
   Estimate: _____
   Calculate:

   c) $1\frac{3}{4} \times 3\frac{1}{3}$
   Estimate: _____
   Calculate:

Name: _____ **Date:** _____

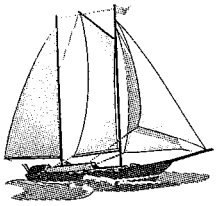
6. One week, Kristi worked 3 days at a department store for $3\frac{1}{2}$ h each day. She was paid \$9/h.

a) How many hours did Kristi work that week? Show your thinking.

b) How much did Kristi earn that week?

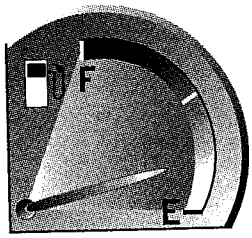
7. Jupiter completes about $2\frac{2}{5}$ rotations every 24 hours (an Earth day). How many rotations does Jupiter complete in one Earth week? Show your thinking.

8. A sailboat is sailing at $8\frac{1}{2}$ km/h. If the weather conditions and the current do not change, how far will the sailboat travel in $1\frac{1}{3}$ h? Show your thinking.



9. The distance to Grandma's house is $\frac{4}{5}$ of the distance to Uncle Glen's house. If Uncle Glen's house is $3\frac{1}{2}$ hours away, how long will it take to get to Grandma's house if you travel at the same speed?

10. It takes $\frac{3}{5}$ of a tank of gas to get to work and back each day. How much gas is used over 5 work days? Show your thinking.



11. Owen is $2\frac{1}{4}$ times as old as Robin. When Robin celebrates his 8th birthday, how old will Owen be?

12. The karate club is arranging a grading for its members. It takes $3\frac{1}{4}$ hours to test a group of 4 candidates. How long will the club need the gym in order to process 3 groups of 4 candidates each?

Name: _____ Date: _____

6.3 Multiplying Proper Fractions

***MathLinks 8*, pages 210–215**

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Practise and Apply

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c) $\frac{2}{5} \times \frac{3}{8}$
Circle the closest estimate: 0 $\frac{1}{2}$ 1

d) $\frac{2}{3} \times \frac{3}{5}$
Circle the closest estimate: 0 $\frac{1}{2}$ 1

e) $\frac{7}{8} \times \frac{3}{5}$
Circle the closest estimate: 0 $\frac{1}{2}$ 1

f) $\frac{9}{10} \times \frac{8}{9}$
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