Solving Real-World Problems with Fraction Multiplication

Solving Real-World Problems with Fraction Multiplication: Models and Computation

Name _____ **Date** _____ **Score** _____ / 8

QUICK REVIEW

"Of" often means multiplication. Multiply the fraction of a portion by the size of the portion. For equal groups, multiply the number of groups by the amount in 1 group. Name the whole and keep track of the unit.

Worked example

A bottle holds $\frac{2}{5}$ L. Jo pours out $\frac{3}{8}$ of that water. How much does Jo pour?

1. The fraction $\frac{3}{8}$ applies to the $\frac{2}{5}$ L in the bottle.
2. $\frac{3}{8} \times \frac{2}{5} = \frac{6}{40} = \frac{3}{20}$ L.
3. It is less than $\frac{2}{5}$ L, so the answer fits the story.
Answer: $\frac{3}{20}$ L.

Practice Problems

Show your thinking.

1. Each of 6 bags holds $\frac{3}{4}$ kg. Find the total mass.

2. A class finishes $\frac{3}{5}$ of a mural. Blue covers $\frac{2}{3}$ of the finished part. What fraction of the entire mural is blue?

3. A batch needs $1\frac{1}{2}$ cups of flour. Make $\frac{2}{3}$ of a batch. How much flour is needed?

4. A student says half of a $\frac{3}{4}$ L bottle is $\frac{3}{4}$ L. Correct the share.

5. Each banner uses $\frac{5}{6}$ m. Find the length for 4 banners and decide whether $3\frac{1}{2}$ m is enough.

6. A gardener plants $\frac{3}{4}$ of a $\frac{2}{3}$-hectare plot. Find the planted area.

7. Design 6 equal servings totaling $2\frac{1}{4}$ kg. Find the mass of one serving and verify by multiplication.

8. Plan A uses 5 portions of $\frac{2}{3}$ kg. Plan B uses 4 portions of $\frac{3}{4}$ kg. Which uses more and by how much?

Answer Key

1. $\frac{9}{2}$ kg.
2. $\frac{2}{5}$ of the whole mural.
3. 1 cup.
4. $\frac{3}{8}$ L.
5. $3\frac{1}{3}$ m; enough by $\frac{1}{6}$ m.
6. $\frac{1}{2}$ hectare.
7. $\frac{3}{8}$ kg.
8. A; $\frac{1}{3}$ kg more.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. The quantities call for $\frac{3}{4} \times 6$; the result is measured in kg.
2. Multiply numerators: $3 \times 6 = 18$.
3. Multiply denominators: $4 \times 1 = 4$.
4. $\frac{3}{4} \times 6 = \frac{18}{4} = \frac{9}{2}$ after simplifying.

Problem 2

1. The quantities call for $\frac{2}{3} \times \frac{3}{5}$; the result is measured in of the whole mural.
2. Multiply numerators: $2 \times 3 = 6$.
3. Multiply denominators: $3 \times 5 = 15$.
4. $\frac{2}{3} \times \frac{3}{5} = \frac{6}{15} = \frac{2}{5}$ after simplifying.

Problem 3

1. $1\frac{1}{2} = \frac{3}{2}$ cups per batch.
2. $\frac{2}{3} \times \frac{3}{2} = \frac{6}{6} = 1$ cup.
3. A smaller batch uses less than $1\frac{1}{2}$ cups.

Problem 4

1. Half of the bottle means $\frac{1}{2} \times \frac{3}{4}$.
2. $\frac{1}{2} \times \frac{3}{4} = \frac{3}{8}$ L.
3. $2 \times \frac{3}{8} = \frac{3}{4}$ L checks the two halves.

Problem 5

1. $4 \times \frac{5}{6} = \frac{20}{6} = \frac{10}{3}$ m.
2. $3\frac{1}{2} = \frac{7}{2} = \frac{21}{6}$ m.
3. $\frac{21}{6} - \frac{20}{6} = \frac{1}{6}$ m extra.

Problem 6

1. The planted amount is $\frac{3}{4}$ of $\frac{2}{3}$.
2. $\frac{3}{4} \times \frac{2}{3} = \frac{6}{12} = \frac{1}{2}$ hectare.
3. $\frac{1}{2} < \frac{2}{3}$, so only part of the plot is planted.

Problem 7

1. $2\frac{1}{4} = \frac{9}{4}$ kg.
2. One serving is $\frac{9}{4} \div 6 = \frac{9}{24} = \frac{3}{8}$ kg.
3. $6 \times \frac{3}{8} = \frac{18}{8} = \frac{9}{4}$ kg.

Problem 8

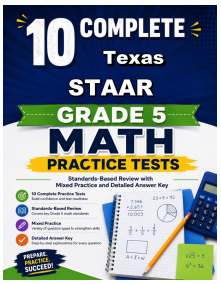
1. A uses $5 \times \frac{2}{3} = \frac{10}{3}$ kg.
2. B uses $4 \times \frac{3}{4} = 3$ kg.
3. $\frac{10}{3} - 3 = \frac{1}{3}$ kg.

TESTINAR

Keep Building Grade 5 Math Skills

Choose the practice book matched to your state assessment and turn worksheet practice into a complete test-prep plan.

All Grade 5 books



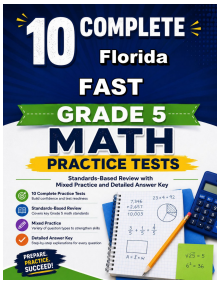
TEXAS STAAR

10 Full-Length Math Practice Tests

Build Grade 5 accuracy, confidence, and test stamina with 10 printable practice tests.

Printable eBook • Instant PDF access

View eBook



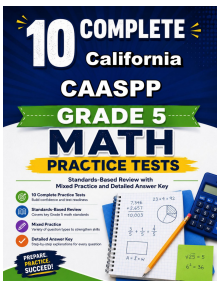
FLORIDA FAST

10 Full-Length Math Practice Tests

Build Grade 5 accuracy, confidence, and test stamina with 10 printable practice tests.

Printable eBook • Instant PDF access

View eBook



CALIFORNIA CAASPP

10 Full-Length Math Practice Tests

Build Grade 5 accuracy, confidence, and test stamina with 10 printable practice tests.

Printable eBook • Instant PDF access

View eBook

Need a different state?
Testinar has Grade 5 math practice books for state assessments across the country.

TESTINAR.COM/GRADES/5