



Multiplying Fractions

Name: _____

Date: _____

Year: Year 5

Multiply the numerators and denominators carefully. Simplify each fraction fully and include the correct unit for word problems. Show your working in your exercise book.

EXAMPLE

$$\frac{3}{4} \times 8 = \underline{\hspace{2cm}}$$

Rewrite 8 as $\frac{8}{1}$: $\frac{3}{4} \times \frac{8}{1}$. Multiply the numerators: $3 \times 8 = 24$. Multiply the denominators: $4 \times 1 = 4$. Simplify $\frac{24}{4} = 6$.

✕ Part 1: Multiply a Fraction by a Whole Number

1. $\frac{2}{5} \times 10 = \underline{\hspace{2cm}}$

2. $\frac{3}{8} \times 16 = \underline{\hspace{2cm}}$

3. $\frac{5}{6} \times 18 = \underline{\hspace{2cm}}$

4. $\frac{7}{12} \times 24 = \underline{\hspace{2cm}}$

÷ Part 2: Multiply a Fraction by a Fraction

5. $\frac{1}{3} \times \frac{3}{4} = \underline{\hspace{2cm}}$

6. $\frac{2}{5} \times \frac{3}{7} = \underline{\hspace{2cm}}$

7. $\frac{4}{9} \times \frac{3}{8} = \underline{\hspace{2cm}}$

8. $\frac{5}{6} \times \frac{9}{10} = \underline{\hspace{2cm}}$

 Part 3: Apply Multiplication in Context

9. A jug contains 600 ml of water. A pupil uses $\frac{2}{5}$ of the water to fill a bottle. How many millilitres are used?

10. A ribbon is $\frac{3}{4}$ metre long. A craft group uses $\frac{2}{3}$ of the ribbon. How many metres of ribbon do they use?

11. A bag of bird seed costs £4.50. A charity buys $\frac{3}{5}$ of a bag. What is the cost of that amount of seed?

12. A school has $2\frac{1}{2}$ metres of green fabric. The art club uses $\frac{3}{5}$ of it for a display. How many metres of fabric are used?

Mark scheme

WORKSHEET

1. 4

1) Rewrite 10 as $10/1$. 2) Multiply: $(2 \times 10)/(5 \times 1) = 20/5$. 3) Simplify $20/5 = 4$.

Common mistake: Students sometimes multiply only the denominator, giving $2/50$ instead of 4.

2. 6

1) Rewrite 16 as $16/1$. 2) Multiply: $(3 \times 16)/(8 \times 1) = 48/8$. 3) Simplify $48/8 = 6$.

Common mistake: Students often forget to simplify $48/8$, leaving $48/8$ instead of 6.

3. 15

1) Rewrite 18 as $18/1$. 2) Multiply: $(5 \times 18)/(6 \times 1) = 90/6$. 3) Simplify $90/6 = 15$.

Common mistake: Students may divide 18 by 5 instead of multiplying, giving 3.6 instead of 15.

4. 14

1) Rewrite 24 as $24/1$. 2) Multiply: $(7 \times 24)/(12 \times 1) = 168/12$. 3) Simplify $168/12 = 14$.

Common mistake: Students sometimes use 12×24 as the denominator and do not cancel, giving an incorrect fraction instead of 14.

5. $1/4$

1) Multiply the numerators: $1 \times 3 = 3$. 2) Multiply the denominators: $3 \times 4 = 12$, giving $3/12$. 3) Simplify $3/12$ by dividing by 3: $1/4$.

Common mistake: Students often add the fractions, giving $13/12$ instead of $1/4$.

6. $6/35$

1) Multiply the numerators: $2 \times 3 = 6$. 2) Multiply the denominators: $5 \times 7 = 35$. 3) The fraction $6/35$ is already in its simplest form.

Common mistake: Students may multiply across the denominators incorrectly, giving $6/12$ instead of $6/35$.

7. $1/6$

1) Multiply: $(4 \times 3)/(9 \times 8) = 12/72$. 2) Divide the numerator and denominator by 12: $12 \div 12 = 1$ and $72 \div 12 = 6$. 3) The simplified answer is $1/6$.

Common mistake: Students often cancel only one pair of numbers and give $3/18$ instead of $1/6$.

8. $3/4$

1) Multiply: $(5 \times 9)/(6 \times 10) = 45/60$. 2) Divide both parts by 15: $45 \div 15 = 3$ and $60 \div 15 = 4$. 3) The simplified answer is $3/4$.

Common mistake: Students sometimes simplify $45/60$ by dividing only the numerator, giving $3/60$ instead of $3/4$.

9. 240 ml

1) Find $2/5$ of 600 ml: $2/5 \times 600$. 2) Calculate $600 \div 5 = 120$ ml, then $120 \times 2 = 240$ ml. 3) Write the answer with the unit: 240 ml.

Accept if: The answer must state that 240 millilitres of water are used.

Common mistake: Students may calculate $600 \div 2 \times 5$ and give 1,500 ml, reversing the fraction's numerator and denominator.

10. $1/2$ metre

1) Multiply the fractions: $\frac{2}{3} \times \frac{3}{4} = \frac{6}{12}$ metre. 2) Simplify $\frac{6}{12}$ by dividing both parts by 6. 3) The group uses $\frac{1}{2}$ metre.

Accept if: The answer must state that the group uses one-half metre of ribbon.

Common mistake: Students often add $\frac{2}{3}$ and $\frac{3}{4}$, giving $\frac{17}{12}$ metre instead of $\frac{1}{2}$ metre.

11. £2.70

1) Find $\frac{3}{5}$ of £4.50: $\frac{3}{5} \times £4.50$. 2) Calculate $£4.50 \div 5 = £0.90$, then $£0.90 \times 3 = £2.70$. 3) Write the cost as £2.70.

Accept if: The answer must state that $\frac{3}{5}$ of the bag costs £2.70.

Common mistake: Students may find $\frac{2}{5}$ instead of $\frac{3}{5}$ and give £1.80, using the unused part of the bag.

12. 1 $\frac{1}{2}$ metres

1) Convert $2 \frac{1}{2}$ to an improper fraction: $2 \frac{1}{2} = \frac{5}{2}$. 2) Multiply: $\frac{3}{5} \times \frac{5}{2} = \frac{15}{10}$. 3) Simplify $\frac{15}{10}$ to $\frac{3}{2}$, then convert back: $\frac{3}{2} = 1 \frac{1}{2}$ metres.

Accept if: The answer must state that $1 \frac{1}{2}$ metres of fabric are used.

Common mistake: Students may multiply the whole and fractional parts separately and give $2 \frac{3}{10}$ metres instead of $1 \frac{1}{2}$ metres.