

**Key focus**

To divide by a fraction, multiply by its reciprocal: $\frac{a}{b} \div \frac{c}{d} = \frac{a}{b} \times \frac{d}{c}$. A whole number divides or is divided as itself over 1. Dividing by a proper fraction (less than 1) always makes the result larger than the dividend – the reverse of multiplying. This LO draws directly on Reciprocals (LO7) and Multiplying Fractions (LO6).

Suggested teaching sequence

1. Show the measurement-model bar: a tape showing the dividend, retiled into divisor-sized chunks, numbered 1, 2, ... – the quotient is how many chunks fit.
2. Establish the rule: flip the second fraction (the divisor) to its reciprocal, then multiply straight across, exactly as in Multiplying Fractions.
3. Practise the special case of a fraction divided by itself, which always gives 1.
4. Extend to a whole number divided by a fraction, and a fraction divided by a whole number, writing the whole number as itself over 1 first.
5. Notice that dividing by a proper fraction increases the value, while dividing by an improper fraction (greater than 1) decreases it – the opposite of what division "usually" does, and a common point of confusion.
6. Practise checking a quotient by multiplying it back by the divisor to confirm it returns the original dividend.
7. Apply the skill to missing-value, comparison, error-check, and word-problem contexts.

Core examples to model

- Measurement model: $\frac{3}{4} \div \frac{1}{4} = 3$ – three quarter-tiles fit in $\frac{3}{4}$.
- Flip and multiply: $6 \div \frac{3}{4} = 6 \times \frac{4}{3} = 8$.
- Fraction by itself: $\frac{5}{6} \div \frac{5}{6} = 1$.
- Mixed number: $1\frac{1}{2} \div \frac{3}{4} = \frac{3}{2} \times \frac{4}{3} = 2$.
- Error check: $\frac{4}{5} \div \frac{2}{3} = \frac{4}{5} \times \frac{3}{2} = \frac{6}{5}$, NOT $\frac{8}{15}$ (that is the product, not the quotient).

Watch for

- Multiplying by the divisor instead of its reciprocal (a very common slip, since the two operations look similar).
- Flipping the dividend instead of the divisor.

- Forgetting to write a whole number as itself over 1 before dividing.
- Assuming division always makes a number smaller – dividing by a proper fraction makes it larger.

Checks for understanding

- Can students divide two fractions by multiplying by the reciprocal of the divisor?
- Can they divide a whole number by a fraction, and a fraction by a whole number?
- Can they use the measurement-model bar to justify a quotient by counting how many divisor-tiles fit?
- Can they explain why dividing by a proper fraction makes a positive number larger?
- Can they check a claimed quotient by multiplying it back with the divisor?