

Maths - Year 6

Calculating 12: Multiplying and dividing fractions

Key Vocabulary

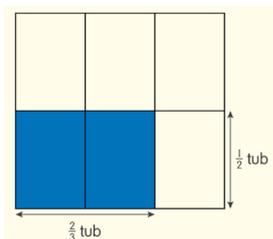
Numerator	Upper number of a fraction, shows how many of this kind of fraction.
Denominator	Lower number of a fraction, gives the fraction its name.
Proper fraction	A fraction where the numerator is smaller than the denominator.
Improper fraction	A fraction where the numerator is bigger than the denominator.
Common factor	A whole number that divides into two or more other numbers exactly, e.g. 3 is a common factor of 6, 9 and 12.
Equivalent	The same or equal.
factor	A number that divides into another number exactly.
Ratio	A way of comparing two or more quantities measured in the same units, e.g. if a is 3 times as much as b this comparison can be written as the ratio $a : b$ is 3 : 1.

Mathematical Skills

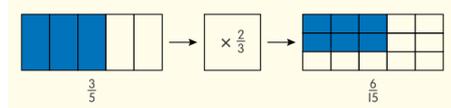
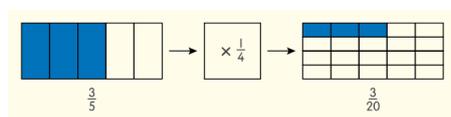
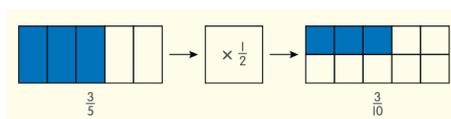
- Use a variety of resources and imagery to illustrate and reason about multiplying and dividing with fractions.
- Notice patterns and generalise to suggest rules for multiplying with fractions.
- Describe and explain a general rule for multiplying a pair of fractions.
- Identify whether a fraction is in its simplest form, and, if not, express it in its simplest form by dividing the numerator and denominator by common factors.
- Use understanding of the sharing structure of dividing to help explain dividing a fraction by a whole number.
- Link dividing a fraction by a whole number with multiplying by a fraction.

Mathematical Methods

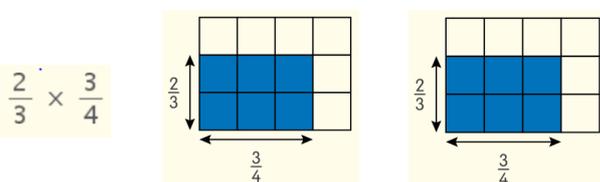
- Multiplying two fractions e.g. Friends have $\frac{2}{3}$ of a tub of yoghurt and ate $\frac{1}{2}$ of this. What fraction of the whole tub have the friends eaten?



- Multiplying two fractions using a fraction machine.



- Multiplying two fractions using a general rule e.g. raspberries are added to $\frac{2}{3}$ of a batch of brownies; then $\frac{3}{4}$ of the brownies with raspberries are iced. What fraction of the whole batch has both raspberries and icing?



- Dividing a proper fraction by a whole number e.g. $\frac{2}{3}$ of a batch of brownies is made with white chocolate. These brownies are shared between 4 people. What fraction of the whole batch does each person get?

$$\frac{2}{3} \div 4$$



whole batch



$\frac{2}{3}$ of batch



$\frac{1}{4}$ of $\frac{2}{3}$ of batch

$$\frac{2}{3} \div 4 = \frac{1}{4} \times \frac{2}{3}$$

Can you..?

- Can you multiply these fractions?

$$\frac{2}{3} \times \frac{4}{5}$$

$$\frac{3}{4} \times \frac{5}{8}$$

$$\frac{1}{7} \times \frac{2}{9}$$

- Can you multiply these fractions?

$$\frac{5}{6} \times \frac{2}{5}$$

$$\frac{4}{5} \times \frac{5}{12}$$

$$\frac{2}{3} \times \frac{1}{6}$$

- Can you solve these?

$$\frac{2}{3} \div 6$$

$$\frac{3}{5} \div 4$$