

Essential knowledge

Carry out any multiplication or division using fractions and integers.

Understand and use the reciprocal

Key Vocabulary

Numerator: the number above the line on a fraction. The top number. Represents how many parts are taken

Denominator: the number below the line on a fraction. The number represent the total number of parts..

Unit Fraction: a fraction where the numerator is one and denominator a positive integer.

Non unit Fraction: a fraction where the numerator is larger than one.

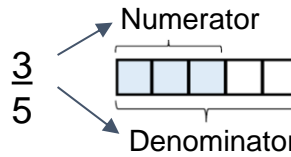
Reciprocal: a pair of numbers that multiply together to give 1.

Prior learning links

Representing a Fraction (Y6)

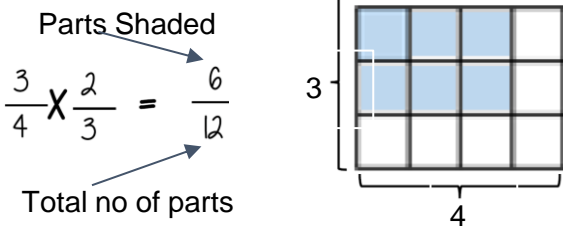
Repeated addition = multiplication by an integer (Y6)

Representing a Fraction



ALL PARTS of a fraction are of equal size

Multiplying non-unit fractions



Quick Multiply



Quick Solving

Multiply the numerators
Multiply the denominators

$$\frac{1 \times 4}{5 \times 3} = \frac{4}{15}$$

The reciprocal When you multiply a number by its reciprocal the answer is always 1

$$3 \times \frac{1}{3} = 1$$

$$\frac{1}{3} + \frac{1}{3} + \frac{1}{3} = 1$$

Reciprocals for division

eg

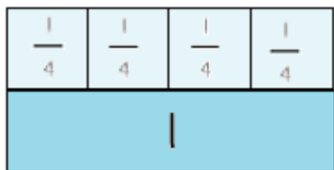
$$5 \div \frac{1}{4} = 20$$

$$5 \times 4 = 20$$

Multiplying by a reciprocal gives the same outcome

The reciprocal of 3 is $\frac{1}{3}$ and vice versa

Dividing an integer by a unit fraction



There are 4 quarters in 1 whole.
Therefore, there are 20 quarters in 5 wholes

$$1 \div \frac{1}{4} = 4$$

How many quarters are in 1?

$$5 \div \frac{1}{4} = 20$$

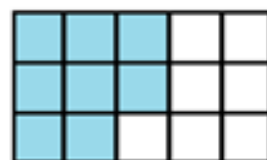
Dividing any fraction

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

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

Multiplying by a reciprocal gives the same outcome

Represented

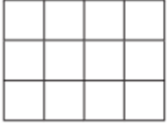


$$= \frac{8}{15}$$

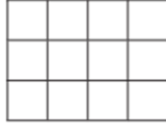
Prior learning links

Shade the grids to match the given fractions.

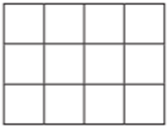
a) $\frac{5}{12}$



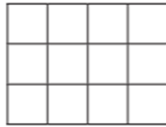
c) $\frac{3}{4}$



b) $\frac{1}{3}$



d) $\frac{1}{6}$



Key Vocabulary

Use cover, look, write, check to write the definitions

Numerator :

Denominator:

Unit Fraction:

Non unit Fraction:

Reciprocal:

Multiply any fraction

(a) $\frac{1}{2} \times \frac{1}{5}$

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

(c) $\frac{1}{4} \times \frac{3}{5}$

(d) $\frac{1}{3} \times \frac{1}{3}$

(e) $\frac{5}{6} \times \frac{1}{2}$

(f) $\frac{3}{4} \times \frac{1}{4}$

(g) $\frac{2}{3} \times \frac{1}{7}$

(h) $\frac{5}{8} \times \frac{1}{3}$

The reciprocal

(a) $\frac{1}{5} \times 3$

(b) $7 \times \frac{1}{8}$

(c) $\frac{1}{10} \times 4$

(d) $30 \times \frac{1}{2}$

(e) $8 \times \frac{3}{4}$

(f) $\frac{2}{3} \times 12$

(g) $5 \times \frac{1}{3}$

(h) $8 \times \frac{2}{5}$

Dividing any fraction

(a) $\frac{1}{5} \div \frac{2}{3}$

(b) $\frac{3}{4} \div \frac{4}{5}$

(c) $\frac{1}{2} \div \frac{7}{8}$

(d) $\frac{2}{3} \div \frac{5}{6}$

(e) $\frac{1}{10} \div \frac{4}{9}$

(f) $\frac{6}{11} \div \frac{5}{6}$

(g) $\frac{2}{5} \div \frac{13}{15}$

(h) $\frac{3}{8} \div \frac{7}{9}$