

Fractions

Year 3

Find Unit Fractions of Quantities (1)

Vocabulary:

Fraction Notation Divided Equal Numerator Denominator Whole Parts
Fraction Bar (Vinculum) Half Third Quarter Fifth Sixth Seventh Eighth
Ninth Tenth One-____ Bar Model Equation Expression Linear Volume
Area Quantity Times as much / Times the size of

Area contexts



$$\frac{1}{3}$$

one-third



$$\frac{1}{5}$$

one-fifth



$$\frac{1}{6}$$

one-sixth



$$\frac{1}{4}$$

one-quarter

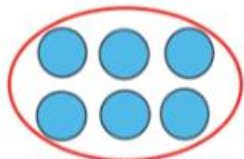
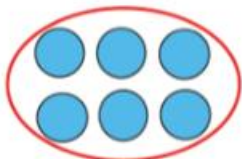


$$\frac{1}{2}$$

one-half

We can use fraction notation to record unit fractions in different contexts including:

Quantity contexts

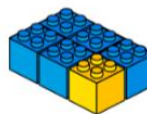
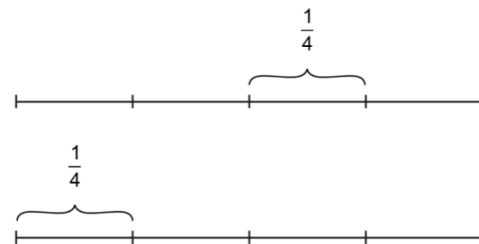


The whole is _____. The whole has been divided into ____ equal parts.

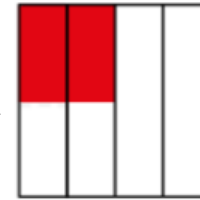
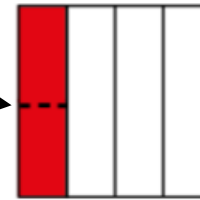
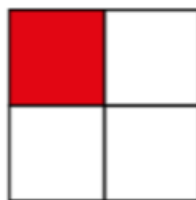
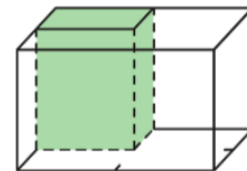
Each part is $\frac{1}{\text{ }} of the whole.$

$\frac{1}{\text{ }} of \text{ } is \text{ }.$

Linear contexts



Volume contexts



Generalisation:

Equal parts don't always look the same.

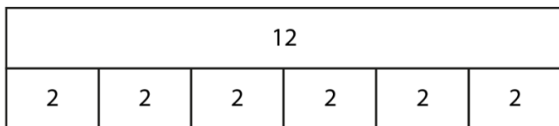
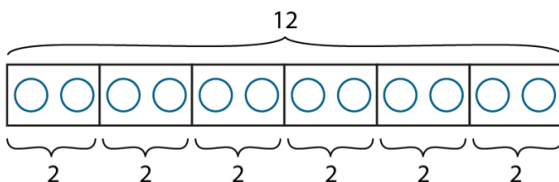
Fractions

Year 3

Find Unit Fractions of Quantities (2)

Vocabulary:

Fraction Notation Divided Equal Numerator Denominator Whole Parts
 Fraction Bar (Vinculum) Half Third Quarter Fifth Sixth Seventh Eighth
 Ninth Tenth One-_____ Bar Model Equation Expression Linear Volume
 Area Quantity Times as much / Times the size of



$$12 \div 6 = 2$$

$$\frac{1}{6} \text{ of } 12 = 2$$

We can use division facts to help us find the fraction of an amount, representing this using bar models.

To find $\frac{1}{5}$ of 15, we divide 15 into 5 equal parts.

15 divided by 5 is equal to 3,

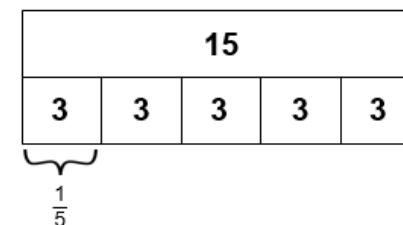
so $\frac{1}{5}$ of 15 is 3.

The whole is 12 apples. The whole has been divided into 6 equal parts.

Each part is $\frac{1}{6}$ of the whole.

$\frac{1}{6}$ of 12 apples is 2 apples.

$$\frac{1}{5} \text{ of } 15$$



$$15 \div 5 = 3$$

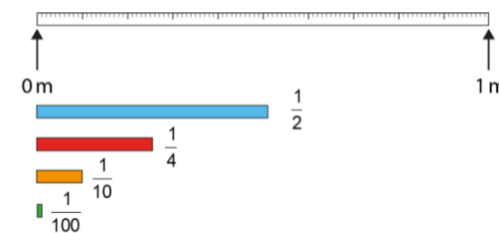
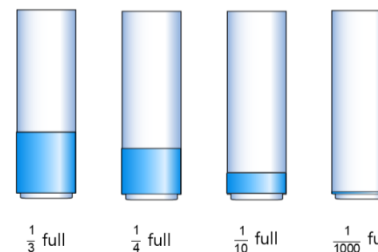
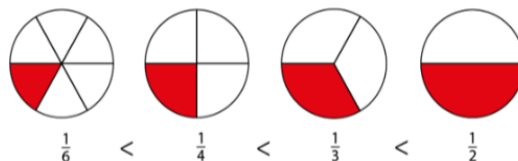
$$\text{so } \frac{1}{5} \text{ of } 15 = 3$$

We can compare fractions with the same numerator. We can compare these in different contexts.

Generalisation:

When both fractions have the same numerator, the greater the denominator, the greater the fraction.

When we compare fractions, the whole must be the same.



Fractions

Year 3

Find Unit Fractions of Quantities (3)

Vocabulary:

Fraction Notation Divided Equal Numerator Denominator Whole Parts
Fraction Bar (Vinculum) Half Third Quarter Fifth Sixth Seventh Eighth
Ninth Tenth One-____ Bar Model Equation Expression Linear Volume
Area Quantity Times as much / Times the size of

Part	Part as a fraction of the whole	Number of equal parts in the whole	Whole
	$\frac{1}{3}$	3	
	$\frac{1}{5}$	5	
	$\frac{1}{4}$	4	
	$\frac{1}{5}$	5	
	$\frac{1}{7}$	7	

If we know the size of the unit fraction, we can work out the size of the whole.

The whole is divided into ____ equal parts.
Each part is ____ of the whole.

If one-____ is a part, then the whole is ____ times as much. Take ____ parts and put them together to make one whole.

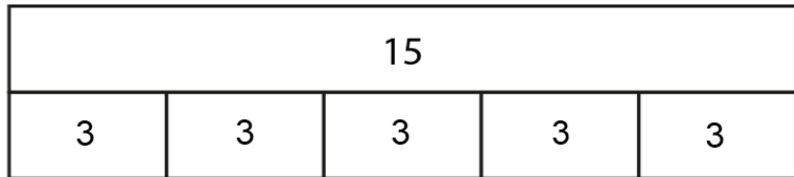
Fractions

Year 5

Find Non-Unit Fractions of Quantities.

Vocabulary:

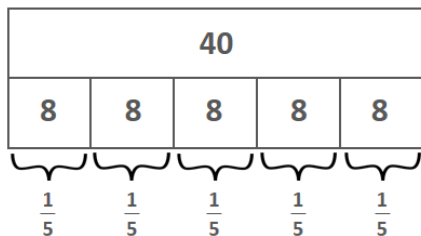
Fraction Notation Divided Equal Numerator Denominator Whole Parts
 Fraction Bar (Vinculum) Half Third Quarter Fifth Sixth Seventh Eighth
 Ninth Tenth One-_____ Number line Part-Part-Whole Model Units Previous
 Next Estimate Intervals Convert Improper Fractions Mixed Numbers Add
 Subtract (Minus) Aggregation Augmentation Reduction Partitioning Difference



$$\begin{aligned} \frac{1}{5} \text{ of } 15 &= 3 \\ \frac{2}{5} \text{ of } 15 &= 6 \\ \frac{3}{5} \text{ of } 15 &= 9 \\ \frac{4}{5} \text{ of } 15 &= 12 \\ \frac{5}{5} \text{ of } 15 &= 15 \end{aligned}$$

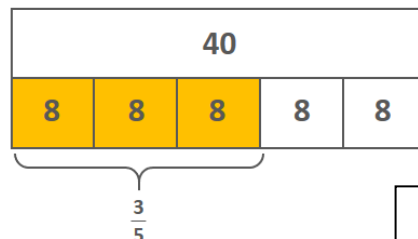
We can skip count in unit fractions to help us find the quantity of a non-unit fraction.

*2 one-fifths of 15 is equal to 6,
 3 one-fifths of 15 is equal to 9...*



$$40 \div 5 = 8$$

$$\text{so } \frac{1}{5} \text{ of } 40 = 8$$



$$40 \div 5 = 8$$

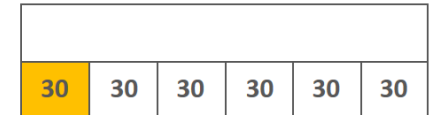
$$\text{so } \frac{1}{5} \text{ of } 40 = 8$$

$$\frac{3}{5} \text{ of } 40 = 24$$

If the whole is unknown but we know the quantity of one part – we can find the size of the whole.

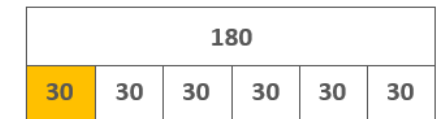
*One-sixth of a number is equal to thirty.
 6 one-sixths is equal to one whole.*

To find the whole, multiply the value of 1 one-sixth by 6.



$$\frac{1}{6} \quad \frac{1}{6} \quad \frac{1}{6} \quad \frac{1}{6} \quad \frac{1}{6} \quad \frac{1}{6}$$

$$\frac{1}{6} \text{ of a number is } 30$$



$$\frac{1}{6} \quad \frac{1}{6} \quad \frac{1}{6} \quad \frac{1}{6} \quad \frac{1}{6} \quad \frac{1}{6}$$

$$\frac{1}{6} \text{ of a number is } 30$$

$$6 \times 30 = 180$$

We can skip count in unit fractions to help us find the quantity of a non-unit fraction.

To find 3 one-fifths of 40, first find one-fifth of 40 by dividing by 5, and then multiply by 3.

Generalisation:

Divide the whole by the denominator and then multiply quotient by the numerator.