Year 3

Knowledge Organiser Fractions

THIRD SPACE LEARNING

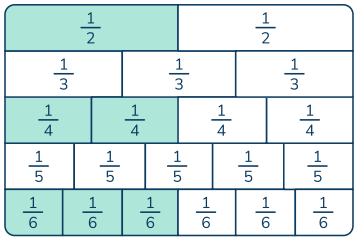
Key vocabulary

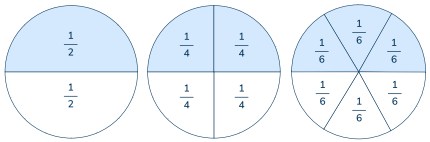
part, whole, divide, fraction, equal part, equivalent, unit, non-unit, denominator, numerator, add, subtract, half, third, quarter, fifth, sixth, seventh, eighth, ninth, compare, order

Equivalent Fractions

Equivalent means the same value. If fractions are equivalent, they have the same value as one another. We can use a fraction wall or diagrams to find fractions that are equivalent.

$\frac{1}{2} = \frac{2}{4} = \frac{3}{6}$



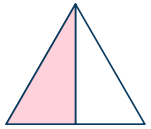


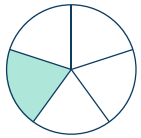
Unit and non-unit fractions

$\frac{1}{2}$ → numerator
$\frac{1}{2}$ → denominator

The numerator shows how many equal parts there are, The denominator shows how many equal parts the whole is divided into. Unit fractions are fractions where the numerator is always 1.

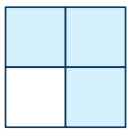
e.g.

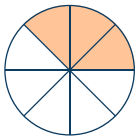
$\frac{1}{2}$ 

$\frac{1}{5}$ 

Non-unit fractions are fractions where the numerators are greater than 1, but less than the denominator.

e.g.

$\frac{3}{4}$ 

$\frac{3}{8}$ 

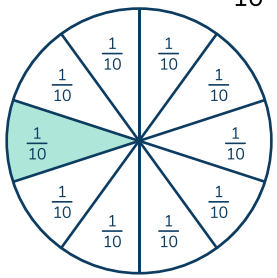
We can describe objects using fractions.

e.g.

3 out of 6 stars are yellow so $\frac{3}{6}$ of the stars are yellow

Tenths

When a whole is divided into 10 equal parts, each part is one tenth ($\frac{1}{10}$) of the whole.

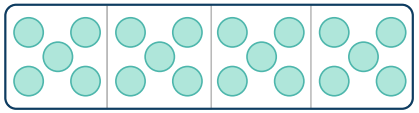


We can count in tenths: one tenth, two tenths, three tenths and so on.

Fractions of quantities

We might need to find the unit fraction of an amount or a non-unit fraction of an amount. When finding a unit fraction of an amount, we divide the whole into equal groups shown by the denominator.

e.g. $\frac{1}{4}$ of 20

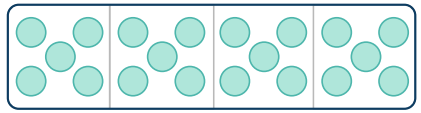


We have divided 20 into 4 equal parts.

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

When finding a non-unit fraction of an amount, first we find the unit fraction of the whole. Then, we count the number of groups shown by the numerator.

e.g. $\frac{3}{4}$ of 20



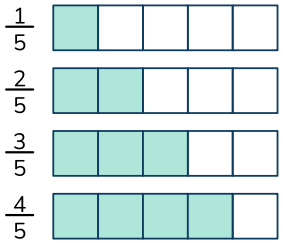
$\frac{1}{4}$ of 20 = 5

We want to find $\frac{3}{4}$ of 20 so we find the total of three groups.

$\frac{3}{4}$ of 20 = 15

Compare and order fractions - same denominator

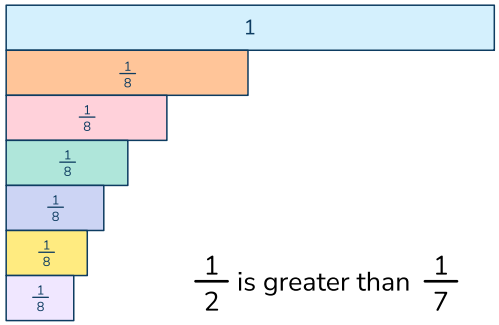
If the denominators are the same, the bigger the numerator, the bigger the fraction.



$\frac{1}{5}$ is smaller than $\frac{3}{5}$

Compare and order fractions - same numerator

If the numerators are the same, the bigger the denominator, the smaller the fraction.

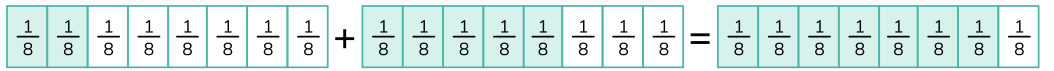


$\frac{1}{2}$ is greater than $\frac{1}{7}$

Add and subtract fractions

When we add or subtract fractions with the same denominator, we only need to add or subtract the numerators.

$\frac{2}{8} + \frac{5}{8} = \frac{7}{8}$



$\frac{3}{3} - \frac{2}{3} = \frac{1}{3}$