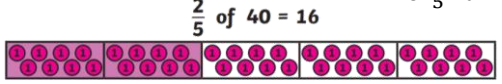
Castlefield School- Maths

Topic: Fractions, decimals and percentages	Year: Five	Theme: Fractions, Decimals and Percentages

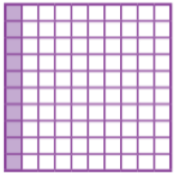
Key concepts and questions

Can fractions be used as operators?

- Fractions can be used to perform operations. For example, $\frac{2}{5}$ x 40.
- 2 x 40 = 80 so $\frac{2}{5}$ x 40 = $\frac{80}{5}$ which simplifies to 16 (80 ÷ 5 =16). This is also the same as doing $\frac{2}{5}$ of 40.



How can equivalent fractions, decimals and percentages be found?



In this example, 10 out of 100 parts are shaded.

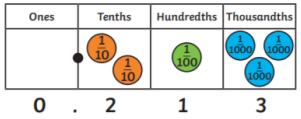
This can be written as $\frac{10}{100}$.

Per cent means out of 100 so this is equivalent to 10%.

$\frac{10}{100} = \frac{1}{10}$ which is equivalent to 0.1

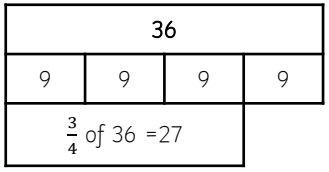
Representations

Place value chart Helps with understanding the value of numbers less than 1.



Bar model

Used to support problem solving, represents how the whole is split into equal parts.



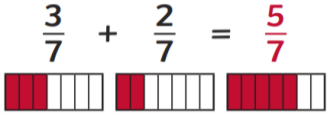
Key Vocabulary

Order	Equal to	Less than	Greater than
Numerator	Denominator	Division	The line in a fraction (vinculum) means divide.
Whole	A number with no decimals or fractions	Tenths	0.1
Common Denominator	A common multiple of several fractions	Hundredths	0.01
Mixed Number	A whole and a fraction	Thousandths	0.001
Proper	Numerator < Denominator	Per cent	Out of 100
Improper	Numerator > Denominator	Convert	Change to something else

Making connections

Addition, subtraction, multiplication and division

- To add and subtract fractions they need to have the same denominator.



- If a question has different denominators then the fractions need to be converted.
- Make use of known facts on multiples and factors to help.

$\frac{1}{10} + \frac{2}{5}$ As 5 is a factor of 10 only $\frac{2}{5}$ needs to be converted $\frac{1}{10} + \frac{4}{10} = \frac{5}{10}$

$\frac{1}{2} + \frac{1}{3}$ 2 is not a factor of 3 so both need to be converted into a common multiple (6, 12, 18 etc) so $\frac{3}{6} + \frac{2}{6} = \frac{5}{6}$