

## Fractions

### Selected National Curriculum Programme of Study Statements

Pupils should be taught to:

- count up and down in tenths; recognise that tenths arise from dividing an object into ten equal parts and in dividing 1-digit numbers or quantities by ten
- recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators
- recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators
- recognise and show, using diagrams, equivalent fractions with small denominators
- add and subtract fractions with the same denominator within one whole (for example,  $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$ )
- compare and order unit fractions, and fractions with the same denominators
- solve problems that involve all of the above

### The Big Ideas

Fractions are equal parts of a whole.

Equal parts of shapes do not need to be congruent but need to be equal in area.

Decimal fractions are linked to other fractions.

The number line is a useful representation that helps children to think about fractions as numbers.

### Mastery Check

Please note that the following columns provide indicative examples of the sorts of tasks and questions that provide evidence for mastery and mastery with greater depth of the selected programme of study statements. Pupils may be able to carry out certain procedures and answer questions like the ones outlined but the teacher will need to check that pupils really understand the idea by asking questions such as 'Why?', 'What happens if ...?'; and checking that pupils can use the procedures or skills to solve a variety of problems.

#### Mastery

Six girls share three bars of chocolate equally.

Four boys share two bars of chocolate equally.

Does each girl get more chocolate, less chocolate or the same amount of chocolate as each boy?

Draw a picture to show that your reasoning is correct.

#### Mastery with Greater Depth

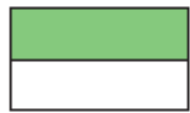
Jo ate  $\frac{1}{4}$  of a pizza and Sam ate  $\frac{1}{2}$  of what was left. Mike ate the rest of the pizza.

Draw a diagram to show how much pizza Jo, Sam and Mike each ate.

### Mastery

True or false?

Explain why.



$\frac{1}{2}$



$\frac{1}{3}$



$\frac{1}{2}$



$\frac{1}{4}$

Shade in 0.7 of this rectangle.



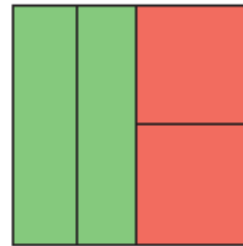
Fill in the numerators to make the answer less than 1.  
Find three different ways to complete the calculation.

$$\frac{\quad}{8} + \frac{\quad}{8} =$$

### Mastery with Greater Depth

The shape is divided into 4 equal parts. Do you agree?

Explain why.



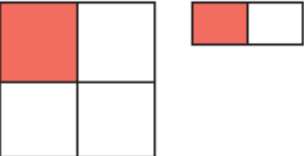
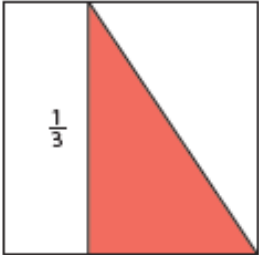
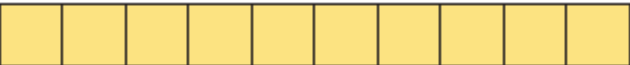
This is 0.4 or  $\frac{2}{5}$  of a bag of marbles. How many marbles are in a full bag?



Fill in the numerators to make the calculation correct.  
How many ways can you do it?

Explain how you know you have found them all.

$$\frac{\quad}{8} + \frac{\quad}{8} = 1$$

Mastery	Mastery with Greater Depth
<p>On a number line labelled 0 to 1, mark <math>\frac{1}{5}</math>, <math>\frac{2}{5}</math> and <math>\frac{4}{5}</math>.</p> <p>On a number line labelled 0 to 1, mark <math>\frac{1}{6}</math>, <math>\frac{1}{3}</math> and <math>\frac{1}{2}</math>.</p>	<p>On a number line labelled 0 to 1, mark <math>\frac{1}{6}</math>, <math>\frac{1}{3}</math> and <math>\frac{1}{2}</math>.</p> <p>How big is the interval from <math>\frac{1}{6}</math> to <math>\frac{1}{3}</math>?</p> <p>How big is the interval from <math>\frac{1}{6}</math> to <math>\frac{1}{2}</math>?</p>
<p>Hamsa says the diagrams below show that <math>\frac{1}{4} &gt; \frac{1}{2}</math>. Do you agree?</p> <p>Explain why.</p> 	<p>What fraction of the square is shaded?</p> <p>Explain your reasoning.</p> 
<p>What fraction of the bar does each section represent?</p>  <p>Draw two more bars of the same size and divide one into eighths and the other into sixths.</p> <p>Which number is greater, a tenth, an eighth or a sixth?</p> <p>How do the bars help you to explain your reasoning?</p>	<p>Only a fraction of each line is shown. The rest is hidden behind the blue screen.</p> <p>Which whole line is the longer?</p> <p>Explain your reasoning.</p> 