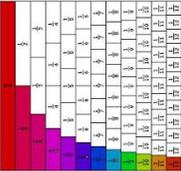


PROGRESSION IN THE TEACHING OF FRACTIONS, DECIMALS AND PERCENTAGES

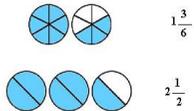
Year 3 Objectives

- Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities.
- 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 [e.g. $5/7 + 1/7 = 6/7$].
- Compare and order unit fractions and fractions with the same denominator.
- Solve problems that involve all of the above.

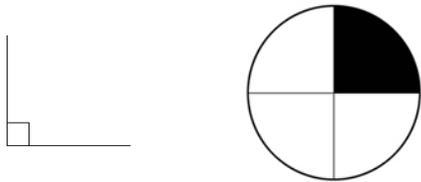
<p style="text-align: center;">Part of a whole (item or quantity or set of items)</p>	<p style="text-align: center;">Result of division (including when the numerator is smaller than the denominator)</p>	<p style="text-align: center;">Fraction of a number</p>	<p style="text-align: center;">Ratio (one object as a fraction of another)</p>
<p>• Show a unit fraction of any denominator of a whole shape, set of objects, and continuous quantity to solve problems.</p> <ul style="list-style-type: none"> ○ <i>What fraction of the jug is full? How much water is in it?</i> ○ <i>A jar holds 100 sweets when it is full. Some have been eaten. About how many are left?</i>  <p>• Show any non-unit fractions with small denominator of sets of objects and shapes and quantities. Link this to division problems.</p> <p>• Use shapes such as a rectangular model to order unit fractions and non-unit fractions with the same denominator.</p>	<p>Use division to compare and order unit fractions (e.g. of pieces of string) to solve problems.</p> <ul style="list-style-type: none"> ○ <i>Find $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{10}$ of 1 metre, kilometre, kilogram</i> • Divide pieces of string or strips of paper to order fractions of the same denominator. 	<ul style="list-style-type: none"> • Count in unit and non-unit fractions, forwards and backwards, showing this visually with for example a rectangular model and on a number line. • Make fraction walls to show equivalence on squared paper or with Cuisenaire rods. Start with families of fractions with small denominators (e.g. eighths, quarters, halves). • Use a fraction wall to compare and order fractions with the same denominator. <p>Use a fraction wall to support ordering fractions on a number line.</p> 	<p>Link to multiplication: scaling e.g. <i>A bar is four times as long or a quarter of the length.</i></p> <ul style="list-style-type: none"> • Compare two small Cuisenaire rods and say what fraction one rod is of the other another. • Take 20 cubes. Make a shape which is $\frac{1}{2}$ red and $\frac{1}{10}$ blue. • Solve simple ratio problems: <ul style="list-style-type: none"> ○ <i>A pink roll of tape is 50cm long. A yellow one is $\frac{1}{2}$ as long. How long are they altogether?</i> ○ <i>Two cakes are shared equally between six people. How much each?</i> <p style="text-align: right;"><i>12 sweets are shared equally</i></p>

Show fractions on a rectangular model and use this to add and subtract fractions with the same denominator within one whole.

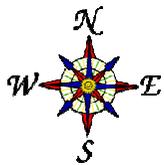
- Explore mixed numbers in practical contexts e.g. $1\frac{1}{2}$ cakes



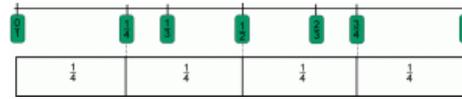
- Understanding that quarter turns are right angles. Recognise that two right angles total a $\frac{1}{2}$ -turn and three right angles total a $\frac{3}{4}$ turn.



- Understanding of compass points and the link to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ turns to face different directions. Link to using directional vocabulary both clockwise and anti-clockwise.



- Show fractions on a number line starting with unit fractions up to and beyond 1.



- Choose a number on a number line – where would $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$ of this be?
- What number is $\frac{1}{2}$ way between:
 - 3 and 4?
 - $2\frac{1}{2}$ and 3? Etc.
- Relate positioning fractions on a number line to measures problems (e.g. of length in m and cm).



between 4 children; how much each?

- William has made a pattern using 12 tiles. One tile in every four is red. How many tiles are red?
- The distance to the park is $\frac{1}{4}$ km. If I went and came back every day of the week. How far will I have travelled?
- To get to school, it takes 1 hour. To get back home takes $\frac{3}{4}$ of the time. How long will it take to get back home?
- The width of a pond is $\frac{1}{3}$ of its length. If it is 6m long, how wide is it?