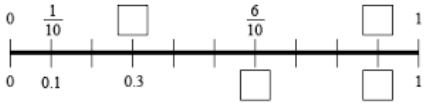
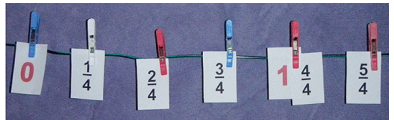



PROGRESSION IN THE TEACHING OF FRACTIONS, DECIMALS AND PERCENTAGES

Year 4 Objectives

- Recognise and show, using diagrams, families of common equivalent fractions.
- Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.
- Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number.
- Add and subtract fractions with the same denominator.
- Solve simple measure and money problems involving fractions and decimals to 2 decimal places
- Recognise and write decimal equivalents of any number of tenths or hundredths
- Recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$
- Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths
- Round decimals with one decimal place to the nearest whole number
- Compare numbers with the same number of decimal places up to two decimal places

Part of a whole (item or quantity or set of items)	Result of division (including when the numerator is smaller than the denominator)	Fraction of a number	Ratio (one object as a fraction of another)
<ul style="list-style-type: none"> • Find non-unit fractions of a number where the answer is a whole number. E.g. Find $\frac{2}{3}$ of $12 = 4$. • Find any fraction of a number practically and then recording as a number sentence. Include find tenths and hundredths of numbers. • Show any fraction of measures, shapes, or sets of items to solve problems, e.g.: <ul style="list-style-type: none"> o A bottle of lemonade holds approximately $\frac{1}{4}$l or $1\frac{1}{4}$l? o There are 36 children in a class. 	<ul style="list-style-type: none"> • Understand a fraction as an operator, particularly for $\frac{1}{10}$ (as $\div 10$) and $\frac{1}{100}$ (as $\div 100$). • Link division to showing tenths as fractions and decimals.  <ul style="list-style-type: none"> • Divide measures, shapes and sets of objects to show any fraction and solve problems. <ul style="list-style-type: none"> o What is $\frac{1}{10}$, $\frac{1}{5}$, $\frac{1}{4}$ of $\pounds 1$? o What is $\frac{1}{10}$, $\frac{1}{5}$, $\frac{1}{4}$ of 100g? 	<ul style="list-style-type: none"> • Draw or make fraction walls with squared paper or Cuisenaire rods. Use this to identify families of common equivalent fractions. • Link fractions to the number line and measurement, and then to factors and multiples to support the understanding of equivalent fractions.  <ul style="list-style-type: none"> • Use factors and multiples to recognise and simplify equivalent fractions. 	<ul style="list-style-type: none"> • Link to multiplication scaling problems. <ul style="list-style-type: none"> o Three cakes to be shared between nine people. Everyone then gets $\frac{1}{3}$ of a cake. o For every black square there are 2 white in a pattern. In 20 squares, how many squares will be black? • Compare any two Cuisenaire rods and say what fraction one rod is of the other. (E.g. $\frac{4}{6}$ of the total is yellow, $\frac{2}{6}$ of the total is red.) 

Half of them have flavoured crisps. One third of them have plain crisps. How many children have crisps?
 o Gran gave me £8 of my £10 birthday money. What fraction of my birthday money did Gran give me?

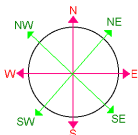
- Use a rectangular model marking it with horizontal lines to show a fraction and show equivalent fractions by splitting the rectangle up into smaller fractions with horizontal lines.

Show mixed numbers practically and with a rectangular model:

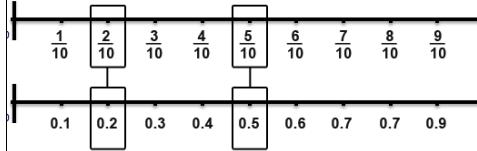
e.g. $4/3 = 1 \frac{1}{3}$

- Use a rectangular model to add and subtract fractions with the same denominator, using fractions with larger denominators and beyond 1.
- Link fractions to an understanding of proportion: e.g. $1/4$ is the same as 1 in every 4.

- Equate the eight compass directions to eighths of a complete turn and use this to turn. E.g. Starting at N, then turn $3/8$ of the way around. Which way are you now facing?



- Link fractions to place value. E.g. Show tenths and hundredths as fractions and decimals.

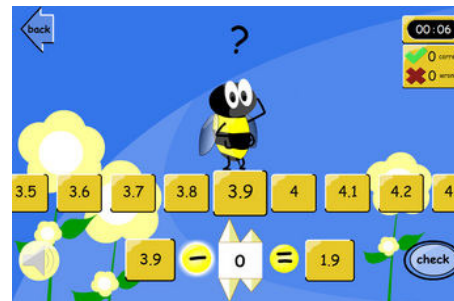


- Show that ten hundredths makes a tenth.

- Show tenths and hundredths on a number line and when measuring. (E.g. $1/10$ of a metre is 10cm.)

- Use number lines to make connections between any fraction and measures: mark fractions on a number line.

- Count in fractions including tenths and hundredths, forwards and backwards. E.g. counting on in tenths from 3.5:



- Comparison of two quantities and use of these to solve problems:
 - o What fraction of the larger bag of flour is the smaller bag?

- Use the bar model to support the solving of word problems:
 - o Ben has a third as many sweets as Bill. If Ben has 8 sweets, how many marbles do they have altogether

--	--	--	--