Main Learning

- *Count forwards or backwards in steps of integers, decimals or powers of 10 for any number.*
- *Order and compare numbers including integers, decimals and negative numbers.*
- *Identify, represent and estimate numbers using the number line.*
- *Find 0.001, 0.01, 0.1, 1, 10 and powers of 10 more or less than a given number.*
- *Round decimals with three places to the nearest whole number or one or two decimal places.*
- Use common factors to simplify fractions; use common multiples to express fractions in the same denomination.
- Compare and order fractions, including fractions >1 (including on a number line).
- Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.
- Associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g.$\frac{3}{8}$)
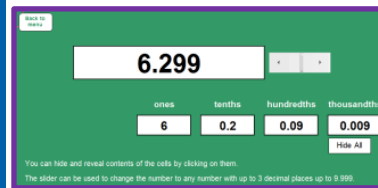
Success Criteria

Practice and Consolidation

Making Pyramids involves the children timing themselves to build a pyramid out of paper cups. This is a way of generating a set of decimal numbers with two decimal places. The children can order their times, position them on a number line, round their times to the nearest whole number and even work out the mean (average) times.

Making Pyramids

Factors and Multiples Game – Nrich Ordering

Fractions Game - BBC Bitesize

ICT

Throwing (Count On)

Number Grid Generator
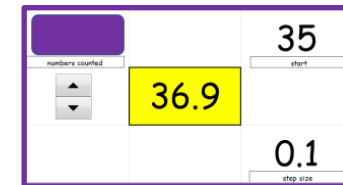
Fractions

Vocabulary

million, decimal, digit, significant digit, tenth, hundredth, thousandth, power, positive, negative, integer, fraction, proper fraction, improper fraction, mixed number, numerator, denominator, equivalent, reduced to, cancel, one whole, half, quarter, eighth, hundredth, thousandth, proportion, ratio, vulgar fraction, decimal fraction, decimal point, percentage, percent, %, factor, multiple, prime number, common, simplify, denomination, denominator, numerator, equivalent fractions, division

Modelling

Consolidate children's understanding of the number system as a whole so that children can move fluently between different representations and different purposes e.g. numbers as precise values, as estimates when rounding, as fractions or decimals, on a number line when reading scales, as a diagram etc.
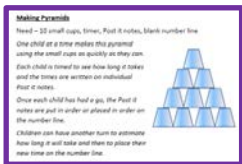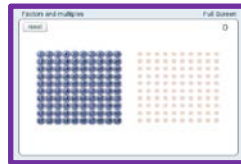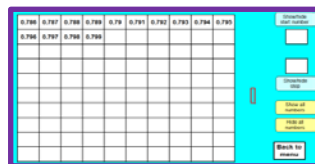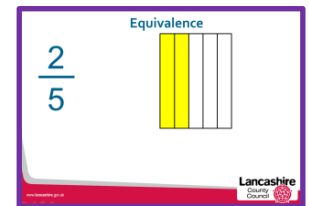
Place Value Charts (Excel)

Counter (Excel)

Use this PowerPoint Show to model equivalences of $\frac{2}{5}$. A similar approach could be used for other fraction equivalences, however, children in Year 6 should recognise relationships between the numerator and denominator and use these to calculate equivalent fractions.

Fraction Chains can be used as a starting point for calculating fraction and decimal equivalents.

For example, if you know that $\frac{1}{4}$ is 0.25 and that $\frac{1}{8}$ is half of $\frac{1}{4}$ then $\frac{1}{8}$ as a decimal must be half of 0.25 which is 0.125 and $\frac{3}{8}$ must be 3 x 0.125 which is 0.375

Mathematics|Planning Support
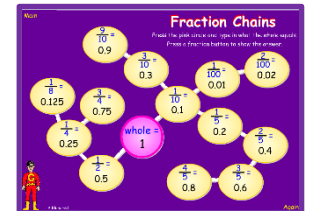
Using and Applying

Spot the mistake: -80, -40, 10, 50
What is wrong with this sequence of numbers?

John says, 2.799 + 0.001 is 2.7100   Explain why this is wrong.

Two numbers each with two decimal places round to 23.1 to one decimal place. The total of the numbers is 46.2.
What could the numbers be?

Which of $\frac{5}{6}$ or $\frac{6}{5}$ is nearer to 1? Explain your reasoning.

I'm thinking of a fraction. It is greater than $\frac{1}{4}$ but less than $\frac{1}{3}$. What could it be?
How many different fractions can you think of?

| 7 | 5 | 3 | 1 | . |

Use these yellow cards to investigate how many different numbers you can make between 1 and 5. Write them in order.

The answer to a calculation is $\frac{13}{20}$. What could the calculation be? Think of different ones and include addition, subtraction and mixed numbers in your selection.

Investigate adding 1 to the numerator and denominator of a fraction.
Does it get larger or smaller? Try it with this fraction to start: $\frac{4}{5}$
What happens if you subtract 1? Explain why this happens.

If you add 1 to my numerator, my value is a third.
If you add 1 to my denominator, my value is a quarter. What fraction am I?

Using two of these numbers each time: 7, 3, 11, 5, and 9; make a fraction less than one half. How many different fractions can you make? Find them all.

Contextual Learning

In other subjects, round whole numbers in order to classify them or put them in order.
In geography, round and then place in order: populations of towns, heights of mountains, weather data. In science, round and then place in order: the results from an investigation, the statistics related to planets in our solar system. In design and technology, round and then place in order: the grams of fat in different foods, the amount of sugar in different drinks.

How many people visited the Dome to the nearest 100?
Was the headline correct?

The Daily Record   10 Feb
Nearly 20 thousand people visit Dome
15,437 people visited the Dome yesterday.

Possible contexts for fractions include:
Word problems, e.g. 200 people attended a concert. $\frac{1}{5}$ of the people had complimentary tickets. The rest paid £7.50 each. How much money was collected from selling tickets?

Money and measures, e.g. which is longer: $\frac{3}{4}$ of an hour or 2500 seconds?

Everyday scenarios, e.g. Peter's family have a meal out to celebrate his birthday. The meal costs £52 and the restaurant adds a 15% service charge. How much is the bill altogether?

Assessment

Which two decimals are closest in value to each other? 0.9, 0.09, 0.99, 0.1, 0.01

□ is 1000 more than 19999   390 001 is 10 000 more than □

Here is a number line.
What is the value of X. Estimate the value of Y.

Write these fractions in order, smallest first: $\frac{3}{4}$, $\frac{2}{3}$, and $\frac{5}{6}$; and these: $2\frac{1}{10}$, $1\frac{3}{10}$, $2\frac{1}{2}$, $1\frac{1}{5}$, $1\frac{3}{4}$
What is $1\frac{1}{7} - \frac{3}{8}$?

What fraction of pizza would each person get if four pizzas were divided between five people?

Complete the sentence by writing a fraction. $\frac{1}{9}$ is half of ____?

Joe has some pocket money. He spends $\frac{6}{7}$ of it. He has fifty pence left. How much pocket money did he have?

Write the missing numerators or denominators in these calculations $\frac{1}{4} + \frac{}{8} = 1$ $\frac{1}{3} + \frac{8}{} = 1$

Mathematics | Planning Support