

Number sense 6.6	Length of unit: 2 weeks	Week beg:	Year:6	Teacher:
<p>Success Criteria</p> <p>Pupils can express and explain the relationship between decimals, fractions and percentages and how decimals and fractions fit into the number system. They use this understanding to solve problems.</p>	<p>Prior Learning</p> <p>Check that children can already</p> <ul style="list-style-type: none"> • read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit • count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 • interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers including through zero • round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 • solve number problems and practical problems that involve all of the above • multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 • read and write decimal numbers as fractions [for example, $0.71 = \frac{71}{100}$] • recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents • round decimals with two decimal places to the nearest whole number and to one decimal place • read, write, order and compare numbers with up to three decimal places • solve problems involving number up to three decimal places • convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) • solve problems involving converting between units of time • compare and order fractions whose denominators are all multiples of the same number • recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements >1 as a mixed number [for example, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$] • recognise the per cent symbol (%) and understand that per cent relates to “number of parts per hundred”, and write percentages as a fraction with denominator 100, and as a decimal 		<p>Resources</p> <p>Maths vocabulary book</p> <p>Using and Applying in every maths lesson</p> <p>Assessment through guided maths</p> <p>Think Maths!</p> <p>Pitch and Expectations Y6 and Y7</p> <p>Mind the Gap (L3 to L4)</p> <p>Overcoming Barriers to Learning – L3 to 4 and L4 to 5 (available online)</p> <p>Securing Level 4 and Securing Level 5 documents</p> <p>Errors and Misconceptions in Maths at KS2</p>	
<p>Guidance</p> <p>Pupils can explore and make conjectures about converting a simple fraction to a decimal fraction (for example $3 \div 8 = 0.375$). For simple fractions with recurring decimal equivalents, pupils should learn about rounding the decimal to three decimal places or appropriate approximations depending on the context.</p>				

Learning objectives

Fractions (including decimals and percentages)

- identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places
- use common factors to simplify fractions; use common multiples to express fractions in the same denomination
- compare and order fractions, including fractions greater than 1
- associate a fraction with division and calculate decimal fraction equivalents (for example 0.375) for a simple fraction (for example $\frac{3}{8}$)
- recall and use equivalences between simple fractions, decimals and percentages, including in a different context

Algebra

- Use simple formulae
- Generate and describe linear number sequences
- Express missing number problems algebraically
- Find pairs of numbers that satisfy an equation with two unknowns

Measurement

- use, read, write and convert between standard units, converting measurements of length, mass and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places
- solve problems involving the calculation and conversion of units of measure, using decimal notation to three decimal places where appropriate

Statistics

- interpret and construct pie charts and line graphs and use these to solve problems

Pupil outcomes:

I can explain how I know how to fill a range of measuring jugs (for example marked in 100ml, 250ml, 200ml and $\frac{1}{4}$ pint intervals) so that each contains 70cl.

- identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places
- use common factors to simplify fractions; use common multiples to express fractions in the same denomination
- compare and order fractions, including fractions greater than 1
- associate a fraction with division and calculate decimal fraction equivalents (for example 0.375) for a simple fraction (for example $\frac{3}{8}$)
- recall and use equivalences between simple fractions, decimals and percentages, including in a different context
- solve problems which require answers to be rounded to specified degrees of accuracy
- add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions
- multiply simple pairs of proper fractions, writing the answer in its simplest form, for example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$
- divide proper fractions by whole numbers, for example, $\frac{1}{3} \div 2 = \frac{1}{6}$