

Number Sense 5.6

Length of unit:
2 weeks

Week beg:

Year:5

Teacher:

Success criteria

Pupils can represent and explain the relationship between decimals, fractions and percentages. They use this understanding to solve problems.

Prior Learning:

- Check that children can already
- count in multiples of 6, 7, 9, 25 and 1000
 - find 1000 more or less than a given number
 - count backwards through zero to include negative numbers
 - recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)
 - order and compare numbers beyond 1000
 - identify, represent and estimate numbers using different representations
 - round any number to the nearest 10, 100 or 1000
 - solve number and practical problems that involve all of the above and with increasingly large positive numbers
 - read Roman numerals to 100 (I to C) and know that, over time, the numeral system changed to include the concept of zero and place value
 - recognise and show, using diagrams, families of common equivalent fractions
 - count up and down in hundredths; recognize that hundredths arise when dividing an object by one hundred and dividing tenths by ten
 - add and subtract fractions with the same denominator
 - 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
 - convert between different units of measure [for example, kilometre to metre, hour to minute]
 - solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days
 - read, write and convert time between analogue and digital 12 and 24-hour clocks

Resources

- Maths vocabulary book
- Using and Applying in every maths lesson
- Assessment through guided maths
- Think Maths!
- Pitch and Expectations Y5 and Y6
- Mind the Gap (L3 to L4)
- Overcoming Barriers to Learning – L3 to 4 and L4 to 5 (available online)
- Securing Level 4 and Securing Level 5 documents
- Errors and Misconceptions in Maths at KS2

Guidance

Pupils should be taught throughout that percentages, decimals and fractions are different ways of expressing proportions.

Pupils connect equivalent fractions >1 that simplify to integers with division and other fractions >1 to division with remainders, using the number line and other models, and hence move from these to improper and mixed fractions.

Pupils say, read and write decimal fractions and related tenths, hundredths and thousandths accurately and are confident in checking the reasonableness of their answers to problems.

See also sequence 5.1 for further guidance.

Learning objectives

Pupils should be taught to:

Multiplication and division

- multiply and divide whole numbers and those involving decimals by 10, 100 and 1000

Fractions (including decimals and percentages)

- 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
- 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
- identify, name and write equivalent fractions of a given fraction, represented visually including tenths and hundredths

Pupil outcomes:

I can explain and represent how I know how to order the fractions $\frac{15}{10}$, $\frac{5}{10}$, $\frac{15}{20}$, $\frac{1}{2}$, $\frac{1}{5}$ and $\frac{37}{100}$ and convert the fractions to decimals and percentages.

I can explain and represent how I know how close each fraction is to 1.