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|---|--|-----------|--|----------|
| <b>Number sense 6.1</b>   | Length of unit:<br><b>3 weeks</b>  | Week beg: | Year:6   | Teacher: |
| <p><b>Success Criteria</b></p> <p>Pupils can represent and explain the multiplicative nature of the number system understanding how to multiply and divide by 10, 100 and 1000.</p> <p>Pupils can make appropriate decisions about when to use their understanding of counting (including counting below zero), place value and rounding for solving problems including adding and subtracting.</p> | <p><b>Prior Learning</b></p> <p>Check that children can already</p> <ul style="list-style-type: none"> <li>● read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit</li> <li>● count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000</li> <li>● interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers including through zero</li> <li>● round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000</li> <li>● solve number problems and practical problems that involve all of the above</li> <li>● multiply and divide whole numbers and those involving decimals by 10, 100 and 1000</li> <li>● read and write decimal numbers as fractions [for example, <math>0.71 = \frac{71}{100}</math>]</li> <li>● recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents</li> <li>● round decimals with two decimal places to the nearest whole number and to one decimal place</li> <li>● read, write, order and compare numbers with up to three decimal places</li> <li>● solve problems involving number up to three decimal places</li> <li>● convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)</li> <li>● solve problems involving converting between units of time</li> <li>● compare and order fractions whose denominators are all multiples of the same number</li> <li>● recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements <math>&gt;1</math> as a mixed number [for example, <math>\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}</math>]</li> <li>● 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</li> </ul> |           | <p><b>Resources</b></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><b>Guidance</b></p> <p>Pupils know approximate conversions and are able to tell if an answer is sensible.</p> <p>Pupils connect conversion (for example, from kilometres to miles) to a graphical representation as preparation for understanding linear/proportional graphs.</p> <p>Pupils use the whole number system, including saying, reading and writing numbers accurately.</p>           |  |           |  |          |

## Learning objectives

### Number and place value

- read, write, order and compare numbers up to 10 000 000 and determine the value of each digit
- round any whole number to a required degree of accuracy
- use negative numbers in context and calculate intervals across zero
- solve number and practical problems that involve all of the above

### 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

### 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
- convert between miles and kilometres.

## Pupil outcomes:

I can explain and represent the relationship between 7017 and 7.017.

I can explain and represent how I know how to order the numbers 21.061, 21.6 and 21.006 and explain why it is easy to subtract 6 tenths from 21.6.

I can explain and represent how I know how to order the temperatures  $7^{\circ}$ ,  $-3^{\circ}$  and  $-7^{\circ}$  and calculate the difference between each pair of temperatures.

I can explain and represent how I know that 7017 g is lighter than 7.07 kg, explain why it is easy to subtract 70 g from 7.07 kg and why rounding both weights to the nearest whole kilogram gives the same result, suggesting other numbers that would also round to 7 kg.