

<b>Additive Reasoning 6.7</b>	Length of unit: <b>1 week</b>	Week beg:	Year: <b>6</b>	Teacher:
<p><b>Success criteria</b></p> <p>Pupils can solve calculation problems in different contexts, appropriately choosing and using operations, number facts, understanding of place value and mental and written methods. They can explain their decision making and justify their solutions and level of accuracy.</p>	<p><b>Prior Learning:</b></p> <p>Check that children can already</p> <ul style="list-style-type: none"> <li>• solve problems involving number up to three decimal places</li> <li>• add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)</li> <li>• add and subtract numbers mentally with increasingly large numbers</li> <li>• use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy</li> <li>• solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</li> <li>• use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation including scaling</li> <li>• solve comparison, sum and difference problems using information presented in a line graph</li> <li>• complete, read and interpret information in tables, including timetables</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>• add and subtract fractions with the same denominator and denominators that are multiples of the same number</li> <li>• measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres</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 when it is appropriate to find the mean of a data set.</p> <p>Pupils should practice, use and understand the addition and subtraction of fractions with different denominators by identifying equivalent fractions with the same denominator. They should start with fractions where the denominator of one fractions is a multiple of the other (for example <math>\frac{1}{2} + \frac{1}{8} = \frac{5}{8}</math>) and progress to varied and increasingly complex problems.</p> <p>See also guidance in sequence 6.2.</p>				

## Learning objectives

Pupils should be taught to:

Addition, subtraction, multiplication and division

- perform mental calculations, including with mixed operations and large numbers
- use their knowledge of the order of operations to carry out calculations involving the four operations
- solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
- solve problems involving addition, subtraction
- use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy

Fractions (including decimals and percentages)

- 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

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
- enumerate possibilities of combinations of two variables

Measurement

- solve problems involving the calculation and conversion of units of measure, using decimal notation to three decimal places where appropriate
- 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 three decimal places

Statistics

- interpret and construct pie charts and line graphs and use these to solve problems
- calculate and interpret the mean as an average

## Pupil outcomes:

*I can use the data from the Diamond League athletics meetings to work out the average (mean) time run by the current Olympic champion for the 100m and compare this with the mean times of other runners.*