



Prior Learning			
<b>Place Value</b> <b>Addition and Subtraction</b> <b>Fractions</b> <b>Converting Units</b>			
Key vocabulary for this unit			
<u><b>Place Value</b></u> Ten million Millions Thousands Hundreds Tens Ones Zero Place value Greater than Less than Order Round/rounded Negative number Partition Digit Interval Sequence Linear sequence	<u><b>Addition and Subtraction</b></u> Add Total Make Plus Sum More Altogether Difference Leave Subtract Difference between Less Minus Take away Mentally/orally Column addition Column subtraction Estimate	<u><b>Fractions</b></u> Numerator Denominator Proper fraction Improper fraction Factor Highest common multiple Lowest common multiple Equivalent Common numerator Common denominator Decimal equivalent Simplify Simplest form Mixed number Whole number Mixed number	<u><b>Converting Units</b></u> mass gram kilogram capacity volume millilitre litre millimeter centimeter kilometer foot inch ounce pound stone pint gallon

	Inverse solve problems Number facts Place value Complex		
<b>Learning Sequence</b>			
<b>Place Value</b>	<ul style="list-style-type: none"> <li>• read, write, order and compare numbers up to 10,000,000 and determine the value of each digit</li> <li>• round any whole number to a required degree of accuracy</li> <li>• use negative numbers in context, and calculate intervals across 0</li> <li>• solve number and practical problems that involve all of the above</li> </ul>		
<b>Addition and Subtraction</b>	<ul style="list-style-type: none"> <li>• perform mental calculations, including with mixed operations and large numbers</li> <li>• identify common factors, common multiples and prime numbers</li> <li>• use their knowledge of the order of operations to carry out calculations involving the 4 operations</li> <li>• solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</li> <li>• solve problems involving addition, subtraction, multiplication and division</li> <li>• use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy</li> </ul>		
<b>Fractions</b>	<ul style="list-style-type: none"> <li>• use common factors to simplify fractions; use common multiples to express fractions in the same denomination</li> <li>• compare and order fractions, including fractions &gt;1</li> <li>• add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions</li> <li>• multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, <math>\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}</math> ]</li> </ul>		

	<ul style="list-style-type: none"> <li>• divide proper fractions by whole numbers [for example, <math>\frac{1}{3} \div 2 = \frac{1}{6}</math> ]</li> <li>• associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, <math>\frac{3}{8}</math> ]</li> <li>• identify the value of each digit in numbers given to 3 decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places</li> <li>• multiply one-digit numbers with up to 2 decimal places by whole numbers</li> <li>• use written division methods in cases where the answer has up to 2 decimal places</li> <li>• solve problems which require answers to be rounded to specified degrees of accuracy</li> <li>• recall and use equivalences between simple fractions, decimals and percentages, including in different contexts</li> </ul>
<b>Converting Units</b>	<ul style="list-style-type: none"> <li>• solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 decimal places where appropriate</li> <li>• use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to 3 decimal places</li> <li>• convert between miles and kilometres</li> </ul>
<b>Assessment milestones</b>	
<p><b>Mathematical skills:</b></p> <p><b>Place value</b></p> <ul style="list-style-type: none"> <li>• read, write, order and compare numbers up to 10,000,000 and determine the value of each digit</li> <li>• round any whole number to a required degree of accuracy</li> <li>• use negative numbers in context, and calculate intervals across 0</li> </ul>	<p><b>Mathematical knowledge:</b></p> <p><b>Place value</b></p> <ul style="list-style-type: none"> <li>• solve number and practical problems that involve all of the above.</li> </ul> <p><b>Addition and subtraction</b></p> <ul style="list-style-type: none"> <li>• solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</li> </ul>

**Addition and subtraction**

- perform mental calculations, including with mixed operations and large numbers
- identify common factors, common multiples and prime numbers
- use their knowledge of the order of operations to carry out calculations involving the 4 operations

**Fractions**

- use common factors to simplify fractions; use common multiples to express fractions in the same denomination
- compare and order fractions, including fractions  $>1$
- 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,  $\frac{1}{3} \div 2 = \frac{1}{6}$  ]
- associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example,  $\frac{3}{8}$  ]
- identify the value of each digit in numbers given to 3 decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places
- multiply one-digit numbers with up to 2 decimal places by whole numbers

- solve problems involving addition, subtraction, multiplication and division

use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy

**Fractions**

- solve problems which require answers to be rounded to specified degrees of accuracy
- recall and use equivalences between simple fractions, decimals and percentages, including in different contexts

**Converting units**

- solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 decimal places where appropriate

- use written division methods in cases where the answer has up to 2 decimal places

**Converting units**

- use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to 3 decimal places
- convert between miles and kilometres