

Maths Curriculum Overview

School: The Valley Primary School

Year Group: 5/6

Academic Year: 2023/2023

At Bishop Rawle C.E. Primary School, we are committed to providing a varied and rich curriculum that will:

- Engage and enthuse pupils;
- Recognise all pupils as unique individuals;
- Foster a love of learning and create enquiring minds which are keen to question;
- Prepare pupils for future stages of learning and life;
- Provide first hand learning skills;
- Allow children to build resilience and become independent learners.

We recognise all children as unique individuals *made in God's likeness* and welcome and celebrate differences. The curriculum is designed to recognise prior learning and to build on previous learning as well as teaching and developing the key skills of independent learners including resilience, determination and critical thinking skills. We provide enrichment opportunities to engage learners which include: outside visitors, educational visits and celebration days. Also, through celebrating learning and promoting life-long learning we aim to promote aspirations and ensure that the children recognise their place in their local community and Parish, the wider community and also as global citizens.

We believe that childhood should be a happy, investigative and enquiring time in our lives, where there are no limits to curiosity and there is a thirst for new experiences and knowledge.

Implementation:

Our curriculum will be implemented using the following principles:

- Recognising and building on children's prior learning;
- Differentiation to ensure all pupils have access to the curriculum and appropriate challenge;
- Delivery of a sequence of lessons that build on skills and learning;
- Use of Assessment for Learning;
- Promotion of children's involvement in their own learning where the children are aware of what they are learning and why they are learning it;

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- Quality questioning;
- Promotion of enquiry skills;
- Recognising the importance of progress both within lessons and across a sequence of lessons;
- Teach a range of techniques (outlined in the Maths Calculation Policy) and allow all children to access lessons;
- Use of high quality materials and resources;
- Engaging learning experiences which enthuse the children.

Impact

The impact of our curriculum will be continually reviewed and evaluated through:

- Learning walks;
- Book and planning scrutinies;
- Pupil voice;
- Staff feedback and discussion;
- Assessment information.

When assessing our curriculum, we will be evaluating:

- Have the children acquired the skills and the knowledge laid out in the curriculum and taught them?
- Is our implementation of the curriculum effective and does it reflect the agreed principles?
- Are the children acquiring and progressing in the skills that will enable them to be independent learners?
- Is our curriculum engaging and does it enthuse the pupils?
- Have we provided the children with memorable learning experiences?
- Are our pupils ready for the next stage in their education (i.e. year group or key stage)?

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Autumn	Year 5	Year 6
Unit 1 Week 1	<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 • round any number up to 1 000 000 to the nearest 10, 100 and 1000 	<ul style="list-style-type: none"> • 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 • solve number and practical problems that involve all of the above
Unit 1 Week 2	<ul style="list-style-type: none"> • add and subtract numbers mentally with increasingly large numbers • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why 	<ul style="list-style-type: none"> • perform mental calculations, including with large numbers • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why • 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
Unit 1 Week 3	<ul style="list-style-type: none"> • identify 3-D shapes, including cubes and other cuboids, from 2-D representations 	<ul style="list-style-type: none"> • recognise, describe and build simple 3-D shapes, including making nets
Unit 2 Week 1	<ul style="list-style-type: none"> • multiply and divide numbers mentally drawing upon known facts • multiply and divide whole numbers by 10, 100 and 1000 	<ul style="list-style-type: none"> • practise multiplication for larger numbers, using the formal written methods of short and long multiplication * • perform mental calculations, including with large numbers • solve problems involving addition, subtraction, multiplication and division

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		<ul style="list-style-type: none"> • use estimation to check answers to calculations • calculations
Unit 2 Week 2	<ul style="list-style-type: none"> • compare and order fractions whose denominators are all multiples of the same number • identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths • develop their understanding of fractions as numbers, measures and operators by finding fractions of numbers and quantities * • practise counting forwards and backwards in simple fractions * • recognise and describe linear number sequences, including those involving fractions, and find the term-to-term rule * [Number – Number and place value] 	<ul style="list-style-type: none"> • 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
Unit 2 Week 3	<ul style="list-style-type: none"> • identify, describe and represent the position of a shape following a translation, using the appropriate language, and know that the shape has not changed • 	<ul style="list-style-type: none"> • describe positions on the full coordinate grid (all four quadrants) • draw and translate simple shapes on the coordinate plane, and reflect them in the axes
Unit 3 Week 1	<ul style="list-style-type: none"> • add whole numbers with more than four digits, including using formal written methods (columnar addition) • add numbers mentally with increasingly large numbers • use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy 	<ul style="list-style-type: none"> • practise addition and subtraction for larger numbers, using the formal written methods of columnar addition and subtraction * • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why • solve problems involving addition, subtraction,

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	<ul style="list-style-type: none"> • 	<p>multiplication and division</p> <ul style="list-style-type: none"> • use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy
Unit 3 Week 2	<ul style="list-style-type: none"> • read and write decimal numbers as fractions [for example, $0.71 = \frac{71}{100}$] • round decimals with two decimal places to the nearest whole number and to one decimal place • practise adding decimals, including complements of 1 (for example, $0.83 + 0.17 = 1$) * • recognise and describe linear number sequences involving decimals and find the term-to-term rule* [Number – Number and place value] • 	<ul style="list-style-type: none"> • identify the value of each digit in numbers given to three decimal places, and multiply and divide numbers by 10, 100 and 1000 giving the answers up to three decimal places • multiply decimals by whole numbers, starting with the simplest cases, such as $0.4 \times 2 = 0.8$, and in practical contexts, such as measures and money * • solve problems that require answers to be rounded to specified degrees of accuracy
Unit 3 Week 3 / Unit 6 Week 3	<ul style="list-style-type: none"> • convert between different units of metric measure (for example, gram and kilogram) • understand and use approximate equivalences between metric units and common imperial units such as pounds • use all four operations to solve problems involving measure [for example, mass] using decimal notation, including scaling 	<ul style="list-style-type: none"> • solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate • use, read, write and convert between standard units, converting measurements of mass from a smaller unit of measure to a larger unit, and vice versa, using decimal notation up to three decimal places
Unit 6 Week 3/ Unit 3 Week 3	<ul style="list-style-type: none"> • convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre) • understand and use approximate equivalences between metric units and common imperial units 	<ul style="list-style-type: none"> • solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate • use, read, write and convert between standard units, converting measurements of length from a smaller unit of

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	<p>such as inches</p> <ul style="list-style-type: none"> • use all four operations to solve problems involving measure [for example, length] using decimal notation, including scaling 	<p>measure to a larger unit, and vice versa, using decimal notation up to three decimal places</p> <ul style="list-style-type: none"> • convert between miles and kilometres
Unit 4 Week 1	<ul style="list-style-type: none"> • identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers • multiply numbers up to four digits by a one-digit number using a formal written method • multiply and divide numbers mentally drawing upon known facts • multiply whole numbers by 10, 100 and 1000 • recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) • solve problems involving multiplication and division, including using their knowledge of squares and cubes • solve problems involving addition, subtraction, multiplication and division, and a combination of these, including understanding the meaning of the equals sign 	<ul style="list-style-type: none"> • practise division for larger numbers, using the formal written method of short division * • divide numbers up to four digits by a two-digit number using the formal written method of short division where appropriate • perform mental calculations, including with large numbers • identify common factors, common multiples and prime numbers • solve problems involving addition, subtraction, multiplication and division • use estimation to check answers to calculations

Spring	Year 5	Year 6
Unit 4 Week 2	<ul style="list-style-type: none"> • identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers • know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers 	<ul style="list-style-type: none"> • Refer to the following units to consolidate Year 6 attainment targets taught in previous units on Number – Multiplication and division: • Unit 2, Week 1

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	<ul style="list-style-type: none"> establish whether a number up to 100 is prime and recall prime numbers up to 19 divide numbers mentally drawing upon known facts divide whole numbers by 10, 100 and 1000 solve problems involving multiplication and division, including using their knowledge of factors and multiples 	<ul style="list-style-type: none"> Unit 4, Week 1
Unit 8 Week 2 / Unit 4 Week 2	<ul style="list-style-type: none"> 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 solve problems that require knowing percentage and decimal equivalents of $\frac{1}{2}, \frac{1}{4}, \frac{1}{5}, \frac{2}{5}, \frac{4}{5}$ and those fractions with a denominator of a multiple of 10 and 25 make connections between percentages, fractions and decimals * 	<ul style="list-style-type: none"> 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 solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison [Ratio]
Unit 4 Week 3	<ul style="list-style-type: none"> solve problems involving converting between units of time use all four operations to solve problems involving measure, including scaling 	<ul style="list-style-type: none"> use, read, write and convert between standard units, converting measurements of time from a smaller unit of measure to a larger unit, and vice versa
4 Number – N&PV Number – M&D	<ul style="list-style-type: none"> divide numbers up to four digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context solve problems involving addition, subtraction, 	<ul style="list-style-type: none"> count in multiples 25 and 1000 multiply two-digit numbers by a one-digit number using formal written layout solve problems involving multiplying and adding, including

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	<p>multiplication and division, and a combination of these, including understanding the meaning of the equals sign</p>	<p>using the distributive law to multiply two-digit numbers by one digit, integer scaling problems, and harder correspondence problems such as n objects are connected to m objects</p>
5 Number - Fractions	<ul style="list-style-type: none"> compare and order fractions whose denominators are all multiples of the same number add and subtract fractions with the same denominator and denominators that are multiples of the same number recognise and use thousandths and relate them to tenths and hundredths 	<ul style="list-style-type: none"> extend the use of the number line to connect fractions, numbers and measures* understand the relation between non-unit fractions and multiplication and division of quantities, with particular emphasis on tenths and hundredths* count up and down in hundredths; recognise that hundredths arise when dividing an object by 100 and dividing tenths by 10 solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number
6 Measurement – length	<ul style="list-style-type: none"> convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre) understand and use approximate equivalences between metric units and common imperial units such as inches use all four operations to solve problems involving measure [for example, length] using decimal notation, including scaling 	<ul style="list-style-type: none"> convert between different units of measure [for example, kilometre to metre] estimate, compare and calculate different measures
7	<ul style="list-style-type: none"> read and write decimal numbers as fractions recognise and use thousandths and relate them to 	<ul style="list-style-type: none"> practise mental methods with increasingly large numbers to aid fluency*

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<p>Number – A&S</p> <p>Decimals</p>	<p>tenths, hundredths and decimal equivalents</p> <ul style="list-style-type: none"> • 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 • mentally add and subtract tenths, and one-digit whole numbers and tenths * • practise adding and subtracting decimals, including a mix of whole numbers and decimals, decimals with • different numbers of decimal places, and complements of 1 [for example, $0.83 + 0.17 = 1$] * [Number – Fractions (including decimals and percentages)] 	<ul style="list-style-type: none"> • add and subtract numbers with up to four digits using the formal written methods of columnar addition and subtraction where appropriate • estimate and use inverse operations to check answers to a calculation • solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why
<p>8</p> <p>Number – A&S</p> <p>Decimals</p>	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • As above
<p>9</p> <p>Stats</p>	<ul style="list-style-type: none"> • solve comparison, sum and difference problems using information presented in a line graph • complete, read and interpret information in tables, including timetables 	<ul style="list-style-type: none"> • interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs • solve comparison, sum and difference problems using

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		information presented in bar charts, pictograms, tables and other graphs
10 M&D	<ul style="list-style-type: none"> multiply numbers up to four digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers solve problems involving addition, subtraction, multiplication and division, and a combination of these, including understanding the meaning of the equals sign 	<ul style="list-style-type: none"> multiply three-digit numbers by a one-digit number using formal written layout solve problems involving multiplying and adding, including using the distribute law to multiply two-digit numbers by one digit, integer scaling problems, and harder correspondence problems such as n objects are connected to m objects
11 Number – Decimals Percentages (incl fractions and decimals)	<ul style="list-style-type: none"> 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 solve problems that require knowing percentage and decimal equivalents of $\frac{1}{2}, \frac{1}{4}, \frac{1}{5}, \frac{2}{5}, \frac{4}{5}$ and those fractions with a denominator of a multiple of 10 and 25 make connections between percentages, fractions and decimals* 	<ul style="list-style-type: none"> extend understanding of the number system and decimal place value to hundredths * recognise and write decimal equivalents of any number of hundredths 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 compare numbers with the same number of decimal places up to two decimal places

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<p>12</p> <p>Measurement – Perimeter and area</p>	<ul style="list-style-type: none"> measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm²) and square metres (m²), and estimate the area of irregular shapes 	<ul style="list-style-type: none"> measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres find the area of rectilinear shapes by counting squares relate area to arrays and multiplication *
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Summer	Year 5	Year 4
<p>1</p> <p>Number – N&PV</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 round any number up to 1 000 000 to the nearest 10, 100, 1 000, 10 000 and 100 000 solve number problems and practical problems that involve all of the above read Roman numerals to 1000 (M) and recognise years written in Roman numerals 	<ul style="list-style-type: none"> 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 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
<p>2</p> <p>Number – A&S</p>	<ul style="list-style-type: none"> add and subtract whole numbers with more than four digits, including using formal written methods (columnar addition and subtraction) practise adding and subtracting decimals, including a mix of whole numbers and decimals * [Number – 	<ul style="list-style-type: none"> add and subtract numbers with up to four digits using the formal written methods of columnar addition and subtraction where appropriate estimate and use inverse operations to check answers to a calculation

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<p>Measurement – Money</p>	<p>Fractions (including decimals and percentages)</p> <ul style="list-style-type: none"> • add and subtract numbers mentally with increasingly large numbers • use rounding to check answers to calculations and determine in the context of a problem, levels of accuracy • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why 	<ul style="list-style-type: none"> • solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why • estimate, compare and calculate different measures,
<p>3 Geometry – properties of shapes</p>	<ul style="list-style-type: none"> • use the properties of rectangles to deduce related facts and find missing lengths and angles • distinguish between regular and irregular polygons based on reasoning about equal sides and angles • use angle sum facts and other properties to make deductions about missing angles and relate these to missing number problems * • use the term diagonal and make conjectures about the angles formed between sides, and between diagonals and parallel sides, and other properties of quadrilaterals * • use conventional markings for parallel lines and right angles 	<ul style="list-style-type: none"> • compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes
<p>4 Number - M&D Measurement - money</p>	<ul style="list-style-type: none"> • multiply and divide numbers mentally drawing upon known facts • multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 • solve problems involving multiplication and division, including scaling by simple fractions and 	<ul style="list-style-type: none"> • multiply three-digit numbers by a one-digit number using formal written layout • solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by one digit, integer scaling problems, and harder correspondence problems such as n objects are connected to m objects

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	<p>problems involving simple rates</p> <ul style="list-style-type: none"> use all four operations to solve problems involving measure [for example, money] using decimal notation, including scaling 	
5 Number – Fractions	<ul style="list-style-type: none"> 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, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$] multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams 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 * 	<ul style="list-style-type: none"> use factors and multiples to recognise equivalent fractions and simplify where appropriate [for example, $\frac{6}{9} = \frac{2}{3}$ or $\frac{1}{4} = \frac{2}{8}$] * recognise and show, using diagrams, families of common equivalent fractions add and subtract fractions with the same denominator solve simple measure and money problems involving fractions
6 Measurement – V&C	<ul style="list-style-type: none"> convert between different units of metric measure (for example litre and millilitre) understand and use approximate equivalences between metric units and common imperial units such as pints estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water] use all four operations to solve problems involving measure [for example volume] using decimal notation, including scaling 	<ul style="list-style-type: none"> convert between different units of measure estimate, compare and calculate different measures

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<p>7 Number – A&S</p> <p>Measurement – Money</p>	<ul style="list-style-type: none"> • add and subtract whole numbers with more than four digits, including using formal written methods (columnar addition and subtraction) • add and subtract numbers mentally with increasingly large numbers • use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use • use all four operations to solve problems involving measure [for example, money] using decimal notation, including scaling 	<ul style="list-style-type: none"> • add and subtract numbers with up to four digits using the formal written methods of columnar addition and subtraction where appropriate • estimate and use inverse operations to check answers to a calculation • solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why • estimate, compare and calculate different measures,
<p>8 Number – Decimals</p>	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • extend understanding of the number system and decimal place value to tenths and then hundredths * • 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

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		<ul style="list-style-type: none"> • solve simple measure and money problems involving decimals to two decimal places •
9 Number - Percentages	<ul style="list-style-type: none"> • 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 • solve problems that require knowing percentage and decimal equivalents of $\frac{1}{2}, \frac{1}{4}, \frac{1}{5}, \frac{2}{5}, \frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25 • make connections between percentages, fractions and decimals* • 	<ul style="list-style-type: none"> •
10 Geometry – P&D	<ul style="list-style-type: none"> • identify, describe and represent the position of a shape following a reflection, using the appropriate language, and know that the shape has not changed • 	<ul style="list-style-type: none"> • describe positions on a 2-D grid as coordinates in the first quadrant • plot specified points and draw sides to complete a given polygon
11 Number – M&D	<ul style="list-style-type: none"> • multiply numbers up to four digits by a two-digit number using a formal written method, including long multiplication for two-digit numbers • divide numbers up to four digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context • solve problems involving addition, subtraction, multiplication and division, and a combination of these, including understanding the meaning of the 	<ul style="list-style-type: none"> • use place value, known and derived facts to divide mentally, including dividing by 1 • practise to become fluent in the formal written method of short division with exact answers * • solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by one digit, integer scaling problems, and harder correspondence problems such as n objects are connected to m objects •

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	<p>equals sign</p> <ul style="list-style-type: none">• solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates• use all four operations to solve problems involving measure [for example, money] using decimal notation, including scaling	
12 Stats	<ul style="list-style-type: none">• solve comparison, sum and difference problems using information presented in a line graph• complete, read and interpret information in tables	<ul style="list-style-type: none">• interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs• solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs