



Amethyst Class Mathematics Curriculum overview 2018-2019



Autumn Term 1

This overview is used as a guide. It indicates the area of mathematics that teachers should focus on and outlines possible objectives from the National Curriculum which will be covered within each week. These are the main objectives but other areas of mathematics and objectives will be taught and developed alongside these. A pre learning task will be carried out for each area before teaching each concept to enable children to learn from individual starting points.

<p><u>Week 1</u> & <u>Week 2</u></p>	<p>Number (Number and place value) Y3: Read, write numbers up to 1000 in numerals and in words Identify, represent and estimate numbers using different representations Y3: Recognise the place value of each digit in a 3-digit number Y4: Recognise the place value of each digit in a 4-digit number</p>	
<p><u>Week 3</u></p>	<p>Number and place value starters</p>	<p>Number (Number and place value) Y3: Order and compare numbers up to 1000 Count forwards and backwards from any given number Y4: Order and compare numbers beyond 1000 Count backwards and forwards through zero including negative numbers</p>
<p><u>Week 4</u> & <u>Week 5</u></p>	<p>Count from 0 in multiples of 4, 8, 50 and 100</p>	<p>Number (Addition and subtraction) Y3: Add and subtract numbers mentally, including a 3-digit number and ones, a 3-digit number and tens, a 3-digit number and hundreds Y3: Add and subtract numbers with up to 3 digits (including using the written method of column addition and subtraction if ready) Y4: Add and subtract numbers with up to 4 digits using a formal written method.</p>
<p><u>Week 6</u></p>	<p>Find 10 and 100, 1000 more or less than a given number</p>	<p>Measurement Y3: Add and subtract amounts of money to give change, using both £ and p in practical contexts. Become fluent in recognising value of coins, by adding and subtracting amounts. Y4: Estimate and calculate measures, including money in pounds and pence. Solve problems using money. The decimal recording of money is introduced.</p>
<p><u>Week 7</u></p>		<p>Statistics Y3: Interpret and represent data using bar charts, pictograms and tables. Y4: Interpret and present discrete data using graphical methods such as bar charts and time graphs</p>

Autumn Term 2

<p><u>Week 1</u></p>	<p>Number (Number and place value)</p> <p>Y3: Compare and order numbers up to 1000. Solve number problems, including practically.</p> <p>Y4: Round any number to the nearest 10, 100 and 1000. Find 1000 more or less than a given number.</p>	
<p><u>Week 2</u> & <u>Week 3</u></p>	<p>Place value and number (developing reasoning)</p> <p>Recall multiplication facts and count in steps of multiples.</p>	<p>Number (multiplication and division)</p> <p>Y3: Recall and use different multiplication facts for the 3, 4 and 8 multiplication tables. Write and calculate mathematical statements for multiplication and division, including 2 digit numbers multiplied by one digit numbers (using mental methods, resources and written methods if ready)</p> <p>Y4: Recall multiplication and division facts for multiplication tables up to 12 x 12. Multiply 2 digits and 3 digit numbers by a one-digit number using formal written methods.</p>
<p><u>Week 4</u> & <u>Week 5</u></p>	<p>Recall multiplication facts and count in steps of multiples.</p>	<p>Number (Fractions)</p> <p>Y3 & Y4: Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators. Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators.</p> <p>Y4: Recognise and show, using diagrams, families of common denominators. Make connections between fractions of numbers and shape. Represent fractions in a range of ways and recognise equivalents.</p>
<p><u>Week 6</u> & <u>Week 7</u></p>		<p>Geometry (Properties of shape)</p> <p>Y3: Draw and recognise and describe 2D and 3D shapes, using modelling and materials. Recognise horizontal and vertical lines and pairs of perpendicular and parallel lines.</p> <p>Y4: Name, describe, compare and classify shapes, including quadrilaterals and triangles based on their properties and sizes.</p> <p><u>Y4: position and direction link: Describe position on a 2D grid using coordinates.</u></p>

Spring Term 1

<u>Week 1</u>	<p>Place value and number (developing reasoning)</p> <p>Count in equal steps and know multiples.</p>	<p>Number (addition and subtraction)</p> <p>Y3: Add and subtract mentally Estimate the answer to a calculation and use the inverse to check calculations.</p> <p>Y4: Continue to develop a range of mental methods, including rounding and estimating. Estimate and use the inverse to check answers.</p>
<u>Week 2</u>	<p>Use a variety of representations, including measures to show place value.</p>	<p>Number (addition and subtraction)</p> <p>Y3: Add and subtract numbers with up to 3 digits, using formal methods. Solve problems, including missing numbers.</p> <p>Y4: Refine written methods for subtraction and addition. Solve two step problems in contexts.</p>
<u>Week 3</u>	<p>Partition numbers flexibly.</p>	<p>Measurement</p> <p>Y3: Measure, compare, add and subtract units of length (m, cm, mm)</p> <p>Y4: Measure, and draw using given measurements. Convert between units of measure using multiplication and division.</p>
<u>Week 4</u>	<p>10, 100, 1000 more or less than a given number.</p>	<p>Measurement</p> <p>Y3: Draw and measure given lengths. Draw and measure the perimeter of shapes.</p> <p>Y4: Measure and calculate the perimeter of rectilinear shapes in centimetres and metres. Perimeter to be expressed as $a + b + c + d$ or $2a + 2b$ etc. Find the area of rectilinear shapes by counting squares (link to arrays)</p>

<p><u>Week 5</u> & <u>Week 6</u></p>		<p>Statistics / Measurement (link to measures of mass or volume)</p> <p>Y3: Understand simple scales of 2, 5, 10 units per cm) Create bar charts using collected data (using units of measure) Interpret data collected.</p> <p>Y4: Create bar charts by collecting data (using units of measure) Understand and use a greater range of scales. Solve comparison sum and difference problems linked to the data.</p>
--	--	---

Spring Term 2

<p><u>Week 1</u></p>	<p>Know the number of seconds in a minute, days in a month, months in a year and leap year.</p>	<p>Number (Fractions)</p> <p>Y3: Compare and order units of fractions and fractions with the same denominators. Recognise and show, using diagrams, equivalent fractions with small denominators.</p> <p>Y4: Solve problems involving fractions to calculate quantities and fractions to divide quantities, including non-unit fractions where the answer is a whole number. Solve simple measures and money problems using fractions and decimals to 2 decimal places.</p>
<p><u>Week 2</u></p>	<p>Know and spell days of the week, months of the year, seasons.</p>	<p>Number (Fractions)</p> <p>Y3: Add and subtract fractions with the same denominator within one whole. Recognise that tenths arise from dividing an object by 10 into equal parts and dividing by 10.</p> <p>Y4: Add and subtract fractions with the same denominator including going beyond a whole. Find the effect of dividing a one or two-digit number by 10 and 100., identify the value of the digit's n the answer as ones, tenths and hundredths. Know that decimals and fractions are ways to represent proportions and numbers.</p>
<p><u>Week 3</u></p>	<p>Count up and down in tenths. (Y3)</p> <p>Count up and down in</p>	<p>Number (multiplication and division)</p> <p>Y3: Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. Refine knowledge of doubling and halving to apply this. Derive related facts. Solve problems, including missing numbers, including scaling problems and corresponding problems in which n objects are connected to m objects (algebraic thinking)</p>

	<p>simple fractions and decimals (Y4)</p> <p>Know that fractions can be expressed as decimals.</p>	<p>Y4: Use place value, known derived facts to multiply and divide mentally, including multiplying by 0 and 1 and dividing by 1. Multiply together 3 numbers.</p>
<u>Week 4</u>		<p>Number (multiplication and division)</p> <p>Y3: Write and calculate mathematical statements for multiplication and division using tables, including 2 digit numbers times a one-digit number, using mental and formal written methods. Solve problems including using measures.</p> <p>Y4: Become fluent in the formal written method for multiplication and division. Solve expressions such as $39 \times 7 = 30 \times 7 + 9$</p>
<u>Week 5</u>		<p>Measurement (time)</p> <p>Y3: Tell and write the time from an analogue clock, including using Roman numerals. Using 12 and 24 hour clocks. Estimate and read the time with accuracy to the nearest minute. Record and compare time in seconds, minutes, use o'clock, am, pm, morning, afternoon, noon and midnight.</p> <p>Y4: Read, write and convert time between analogue and digital 12 and 24 hour clocks. Solve problems involving converting time from hours to minutes, minutes to seconds, years to month, weeks to days.</p>
<u>Week 6</u>		<p>Geometry (Properties of shape)</p> <p>Y3: Recognise and describe properties of polygons (2D), using length of lines, sides, acute and obtuse angles. Recognise angles as a property of shape. Identify right angles and whether angles are greater than or less than a right angle. Draw lines and shapes, including using decimals and measuring straight lines using cm.</p> <p>Y4: Identify acute and obtuse angles and compare to other angles up to 2 right angles by size. Compare and order angles, decide is a shape is regular or irregular. Identify lines of symmetry in 2d shapes presented in different orientations. Complete a simple symmetric figures with respect to a specific line of symmetry. Draw symmetric patterns,</p>

<p><u>Week 1</u></p>	<p>Developing reasoning skills using starters for number and place value.</p>	<p>Number (Addition and Subtraction)</p> <p>Y3: Develop fluency when adding and subtracting mentally, using a range of strategies. Partition numbers with fluency in a variety of ways.</p> <p>Y4: Develop fluent methods to recall addition and subtraction facts. Number/ fractions: estimate and 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.</p>
<p><u>Week 2</u></p>	<p>Time starters including telling the time.</p>	<p>Number (Addition and subtraction)</p> <p>Y3: Refine adding and subtracting numbers using place value and partitioning and using the columnar written methods, using 3 digit numbers. Complete more complex problems, including measures.</p> <p>Y4: Refine formal methods to add and subtract, choosing appropriate contexts and methods. Problem solve using a range of measures. Use increasingly large positive numbers and some negative numbers in context.</p>
<p><u>Week 3 & Week 4</u></p>	<p>Roman numeral starters. Estimate numbers.</p>	<p>Geometry (Properties of shape)</p> <p>Y3 & Y4: Draw and make 3D shapes using modelling materials, recognise 3D shapes in different orientations.</p> <p>Y3: Sort and classify 2D and 3D shapes according to properties. Problem solve using shape and refine knowledge through reasoning.</p> <p>Y4: Classify and sort 2D and 3D shapes according to properties. Problem solve using shape and refine knowledge through reasoning. Including types of triangles and quadrilaterals.</p>
<p><u>Week 5</u></p>		<p>Statistics / Measurement</p> <p>Y3: Interpret and present data appropriate to the context. Solve one and two step questions (how many fewer, how many more?) using information presented in scaled bar charts and pictogram tables. (Including pictograms and bar charts) Y3: Measure, compare, add and subtract units of mass. (Kg/g) Use and apply and problem solving using grams and kg. Collect appropriate tools and units, use and apply skills. Make comparisons and use simple scaling.</p> <p>Y4: Interpret and present data appropriate to the context. (including over time) Interpret information presented in bar charts. Pictograms, tables and other graphs. Y4: Refine knowledge of measures for mass. (include objectives above. Convert between kg and g and problem solve using these in context.</p> <p>Estimate and round units of measures. Use place value and decimal notation to record measures, including money.</p>

Summer Term 2

<p><u>Week 1</u></p>	<p>Order simple fractions and place on a number line.</p>	<p>Number (Multiplication and division)</p> <p>Y3: Refine fluent methods to multiply and divide mentally, choosing appropriate methods. Fraction link: connect decimals to tenths when dividing one digit numbers or quantities by 10.</p> <p>Y4: Recognise and use factor pairs and commutativity mental calculations. Solve problems involving multiplying and dividing, including distributive law to multiply 2 digit numbers by a 1-digit integer, scaling problems and harder problems such as n objects are connected as m objects.</p>
<p><u>Week 2</u></p>	<p>Problem solving starters using place value and number.</p> <p>Reasoning starters using geometry.</p>	<p>Number (Multiplication and division)</p> <p>Y3: Refine methods when writing and calculating mathematical statements for multiplication and division. Develop reliable written methods and progress to more formal methods. Solve problems in contexts including measures and scaling.</p> <p>Y4: Solve one and two step problems using all 4 operations, work with increasing harder numbers. Practise methods using derived facts. Include decimals (money and measures and considering tenths).</p>
<p><u>Week 3</u> & <u>Week 4</u></p>	<p>Y4: Count in multiples of 6, 7, 9, 25 and 1000.</p>	<p>Number (Fractions):</p> <p>Y3: Refine recognising, finding and writing fractions of objects. Recognise and use fractions of number, including unit and non-unit fractions. Solve problems using fractions.</p> <p>Y4: Refine fraction knowledge, including problem solving when find fractions of shape, quantities, comparing and ordering fractions.</p>
<p><u>Week 5</u></p>		<p>Measurement</p> <p>Y3: Measure, compare, add and subtract units of capacity/ volume. (l, ml) Use and apply and problem solving using litres and ml. Collect appropriate tools and units, use and apply skills. Make comparisons and use simple scaling.</p> <p>Y4: Refine knowledge of measures for capacity. (include objectives above. Convert between ml and l and problem solve using these in context.</p>

<u>Week 6</u>		<p>Measurement</p> <p>Y3 & Y4: Compare durations of events, select units of measure and tools to measure. Refine knowledge of time using both analogue and digital 12 hour clocks.</p> <p>Y4: Include 24-hour clock.</p>
<u>Week 7</u>		<p>Geometry (position and direction)</p> <p>Y3: Recognise angles as a property of shape or description of a turn. Use positional language.</p> <p>Y4: Describe positions on a 2D grid as coordinates in the first quadrant. Describe movements between positions as translations of a given unit (left/ right/ up/ down) Plot specified points and draw sides to complete polygons. Draw axes and use ICT plotting tools.</p>

Y4: Roman numerals to be taught during the topic on the Romans. Read Roman numerals to 100 and know that over time, the numeral system changed to include the concept of zero and place value.

Roman numerals to be used to write the date on a daily basis.

Please also refer to the non-statutory guidance in the National Curriculum 2014.