

Enmore Church of England Primary School

'Those who are taught here must
go out and teach others'

Rev J. Poole, Founder, 1810



'I have set you an example that you
should do as I have done for you.'

John 13: 15

Maths at Enmore- for website

Background



Mathematics is the study of numbers, calculations, shapes and equations. It underpins all areas of human endeavour. Maths is all around us, in everything we do. It is the building block for everything in our daily lives

Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

Enmore follows the Early Years Foundation Stage Curriculum which can be found [here](#), and the National Curriculum programmes of study which can be found [here](#).

Vision

The school's vision and values underpin all subjects taught at Enmore. The page below illustrates how maths is influenced by these values and, as a result, illustrates what you would expect to see in classrooms.

Vision

- To have high expectations

What this looks like in maths

- Learning behaviours are excellent
- Poor behaviour is uncommon and is challenged
- Marking is high quality
- teaching spaces are kept tidy and are well- organised

Vision

- A broad curriculum offer

What this looks like in maths

- Displays and work in books reflects a broad curriculum
- classes have topics but discrete subjects are taught
- Cross- curricular links used when possible e.g. Roman numerals

Vision

- An inclusive curriculum

What this looks like in maths

- All children have access to the curriculum
- Pre, post and during interventions used as appropriate, aimed at removing barriers to learning
- differentiated textbooks available

Vision

- A mastery approach

What this looks like in maths

- Whole class teaching is predominant

- children who have mastered topics are given opportunities to support less confident
- low stakes testing and retrieval exercises used where appropriate

Vision

- Expose children to diversity

What this looks like in maths

- patterns from different cultures and beliefs

Vision

- Ask Big Questions

What this looks like in maths

- use opportunities to create moments of awe with huge numbers and find beauty in maths
- consider how maths is an essential element of all aspects of life

Vision

- Close vocabulary gap for disadvantaged children

What this looks like in maths

- emphasising vocabulary for operations and other areas

Vision

- Reinforce school, Christian and British values

What this looks like in

- show respect to the learning of others

Vision

- To develop the children as individuals and give responsibility

What this looks like in maths

- more able given helping responsibilities

Subject Intent

Year R (EYFS)

Intent- Year R

Number sense

- Recognise some numbers of personal significance
- Recognise numbers 1-5
- Count to 4 objects
- Counts objects to 10 and beyond
- Selects the correct numeral 1- 10
- Counts irregular arrangements of objects
- Estimates and counts to check
- Uses words: more less, fewer, greater
- Finds the total number of objects in two groups by counting them
- Says what is one more or less than a given number
- Use adding and subtracting vocabulary
- Begins to identify own mathematical problems

Geometric Reasoning

- Using mathematical terms for 2-D and 3-D shapes
- Selects specified shape
- Can describe position e.g. behind, under, next to
- Orders 3 items by length using appropriate vocabulary
- Orders two items by weight or capacity
- Uses shapes to create patterns or build models
- Uses time and money language
- Sequences familiar events
- Measures short periods of time in simple ways

ELG: Number

Children at the expected level of development will:

- Have a deep understanding of number to 10, including the composition of each number;
- Subitise (recognise quantities without counting) up to 5;

- Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.

ELG: Numerical Patterns

Children at the expected level of development will:

- Verbally count beyond 20, recognising the pattern of the counting system;
- Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity;
- Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

Year 1

<p>Y1 Pupils should be taught to:</p>	<p>count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number 1.1, 1.4, 1.5, 1.6, 1.8, 1.9, 1.11, 1.12</p> <p>count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens 1.1, 1.4, 1.6, 1.7, 1.8, 1.11, 1.13</p> <p>given a number, identify one more and one less 1.1, 1.2, 1.4, 1.5, 1.6, 1.8, 1.9, 1.11, 1.12</p> <p>identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least 1.1, 1.4, 1.6, 1.8, 1.11</p> <p>read and write numbers from 1 to 20 in numerals and words 1.11</p> <p>compare, describe and solve practical problems for:</p> <ul style="list-style-type: none"> - lengths and heights [for example, long / short, longer / shorter, tall / short, double / half] 1.1, 1.4 - mass or weight [for example, heavy / light, heavier than, lighter than] 1.1, 1.4 - capacity / volume [for example, full / empty, more than, less than, half, half full, quarter] 1.1, 1.4 - time [for example, quicker, slower, earlier, later] 1.4 <p>recognise and use language relating to dates, including days of the week, weeks, months and years 1.1, 1.2, 1.4, 1.9</p> <p>sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] 1.2, 1.9, 1.11</p> <p>recognise and know the value of different denominations of coins and notes 1.6, 1.7, 1.8, 1.11, 1.13</p> <p>measure and begin to record the following:</p> <ul style="list-style-type: none"> - lengths and heights 1.8, 1.11 - mass / weight 1.8, 1.11 - capacity and volume 1.8, 1.11 - time (hours, minutes, seconds) 1.11 	<p>count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number 1.1, 1.4, 1.5, 1.6, 1.8, 1.9, 1.11, 1.12</p> <p>given a number, identify one more and one less 1.1, 1.2, 1.4, 1.5, 1.6, 1.8, 1.9, 1.11, 1.12</p> <p>read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs 1.9, 1.12</p> <p>represent and use number bonds and related subtraction facts within 20 1.2, 1.5, 1.9, 1.12</p> <p>add and subtract one-digit and two-digit numbers to 20, including zero 1.9, 1.12</p> <p>solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \quad - 9$ 1.2, 1.5, 1.9, 1.12</p> <p>recognise and use language relating to dates, including days of the week, weeks, months and years 1.1, 1.2, 1.4, 1.9</p> <p>sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] 1.2, 1.9, 1.11</p>	<p>count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens 1.1, 1.4, 1.6, 1.7, 1.8, 1.11, 1.13</p> <p>solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher 1.7, 1.13</p> <p>recognise and know the value of different denominations of coins and notes 1.6, 1.7, 1.8, 1.11, 1.13</p> <p>recognise, find and name a half as one of two equal parts of an object, shape or quantity 1.13, 1.14</p> <p>recognise, find and name a quarter as one of four equal parts of an object, shape or quantity 1.13, 1.14</p> <p>tell the time to the hour and half past the hour and draw the hands on a clock face to show these times 1.13</p>	<p>recognise, find and name a half as one of two equal parts of an object, shape or quantity 1.13, 1.14</p> <p>recognise, find and name a quarter as one of four equal parts of an object, shape or quantity 1.13, 1.14</p> <p>recognise and name common 2-D and 3-D shapes, including:</p> <ul style="list-style-type: none"> - 2-D shapes [for example, rectangles (including squares), circles and triangles] 1.3, 1.10, 1.14 - 3-D shapes [for example, cuboids (including cubes), pyramids and spheres] 1.3, 1.10, 1.14 <p>describe position, direction and movement, including whole, half, quarter and three-quarter turns 1.3, 1.10, 1.14</p>
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Year 2



	Number Sense	Additive Reasoning	Multiplicative Reasoning	Geometric Reasoning
Y2 Pupils should be taught to:	<p>count in steps of 2, 3 and 5 from 0 and in tens from any number, forward and backward 2.1, 2.2, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 2.11, 2.12, 2.13</p> <p>recognise the place value of each digit in a two-digit number (tens, ones) 2.1, 2.2, 2.4, 2.5, 2.8, 2.9, 2.11, 2.12</p> <p>identify, represent and estimate numbers using different representations, including the number line 2.1, 2.4, 2.8, 2.11</p> <p>compare and order numbers from 0 up to 100; use >, < and = signs 2.1, 2.4, 2.8, 2.11</p> <p>read and write numbers to at least 100 in numerals and in words 2.1, 2.4, 2.8, 2.11</p> <p>use place value and number facts to solve problems 2.1, 2.2, 2.4, 2.5, 2.8, 2.9, 2.11, 2.12</p> <p>compare and order lengths, mass, volume / capacity and record the results using >, < and = 2.1, 2.4, 2.8, 2.11</p> <p>compare and sequence intervals of time 2.1, 2.4, 2.8, 2.11</p> <p>recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers 2.6, 2.7, 2.13</p> <p>choose and use appropriate standard units to estimate and measure length / height in any direction (m / cm); mass (kg / g); temperature (°C); capacity (litres / ml) to the nearest appropriate unit; using rulers, scales, thermometers and measuring vessels 2.8, 2.11</p> <p>interpret and construct simple pictograms, tally charts, block diagrams and simple tables 2.6, 2.11</p> <p>ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity 2.1, 2.4, 2.6, 2.11</p>	<p>count in steps of 2, 3 and 5 from 0 and in tens from any number, forward and backward 2.1, 2.2, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 2.11, 2.12, 2.13</p> <p>recognise the place value of each digit in a two-digit number (tens, ones) 2.1, 2.2, 2.4, 2.5, 2.8, 2.9, 2.11, 2.12</p> <p>use place value and number facts to solve problems 2.1, 2.2, 2.4, 2.5, 2.8, 2.9, 2.11, 2.12</p> <p>solve problems with addition and subtraction:</p> <ul style="list-style-type: none"> - using concrete objects and pictorial representations, including those involving numbers, quantities and measures 2.2, 2.5, 2.9, 2.12 - applying their increasing knowledge of mental methods and written methods 2.2, 2.5, 2.9, 2.12 <p>recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 2.2, 2.5, 2.9, 2.12</p> <p>add and subtract numbers using concrete objects, pictorial representations, and mentally, including:</p> <ul style="list-style-type: none"> - a two-digit number and ones - a two-digit number and tens - two two-digit numbers - adding three one-digit numbers 2.2, 2.5, 2.9, 2.12 <p>show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot 2.5, 2.9, 2.12</p> <p>recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems 2.5, 2.9, 2.12</p> <p>recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value 2.5, 2.7, 2.9</p> <p>find different combinations of coins to equal the same amounts of money 2.5, 2.7, 2.9</p> <p>solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change 2.2, 2.5, 2.9</p> <p>ask and answer questions about totaling and comparing categorical data 2.2, 2.5, 2.9, 2.12</p>	<p>count in steps of 2, 3 and 5 from 0 and in tens from any number, forward and backward 2.1, 2.2, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 2.11, 2.12, 2.13</p> <p>recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers 2.6, 2.7, 2.13</p> <p>calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) signs 2.7, 2.13</p> <p>show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot 2.7, 2.13</p> <p>solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts 2.7, 2.13</p> <p>recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value 2.5, 2.7, 2.9</p> <p>find different combinations of coins to equal the same amounts of money 2.5, 2.7, 2.9</p> <p>tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times 2.7, 2.13</p> <p>know the number of minutes in an hour and the number of hours in a day 2.7, 2.13</p> <p>recognise, find, name and write fractions $\frac{1}{5}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity 2.13, 2.14</p> <p>write simple fractions for example $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$ 2.13, 2.14</p>	<p>recognise, find, name and write fractions $\frac{1}{5}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity 2.13, 2.14</p> <p>write simple fractions for example $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$ 2.13, 2.14</p> <p>identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line 2.3, 2.10, 2.14</p> <p>identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces 2.3, 2.10, 2.14</p> <p>identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid] 2.3, 2.10, 2.14</p> <p>compare and sort common 2-D and 3-D shapes and everyday objects 2.3, 2.10, 2.14</p> <p>order and arrange combinations of mathematical objects in patterns and sequences 2.3, 2.10, 2.14</p> <p>use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise) 2.3, 2.10, 2.14</p>



	Number Sense	Additive Reasoning	Multiplicative Reasoning	Geometric Reasoning
Y3 Pupils should be taught to:	<p>count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number 3.1, 3.3, 3.5, 3.8, 3.10, 3.13</p> <p>recognise the place value of each digit in a three-digit number (hundreds, tens, ones) 3.1, 3.5, 3.10</p> <p>compare and order numbers up to 1000 3.1, 3.5, 3.10</p> <p>identify, represent and estimate numbers using different representations 3.1, 3.5, 3.7, 3.10, 3.12</p> <p>read and write numbers up to 1000 in numerals and in words 3.1, 3.5, 3.10</p> <p>solve number problems and practical problems involving these ideas 3.1, 3.5, 3.10</p> <p>count up and down in tenths, recognising that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10 3.5, 3.7, 3.8, 3.12, 3.13</p> <p>recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators 3.7, 3.12</p> <p>recognise and show, using diagrams, equivalent fractions with small denominators 3.12</p> <p>add and subtract fractions with the same denominator within one whole [for example, $\frac{1}{2} + \frac{1}{2} = 1$] 3.7, 3.12</p> <p>compare and order unit fractions and fractions with the same denominator 3.7, 3.12</p> <p>solve problems that involve all of the above (fractions) 3.7, 3.8, 3.12, 3.13</p> <p>tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks 3.5, 3.10</p> <p>estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m. / p.m., morning, afternoon, noon and midnight 3.10, 3.11</p> <p>know the number of seconds in a minute and the number of days in each month, year and leap year 3.10, 3.11, 3.13</p> <p>compare durations of events, [for example, to calculate the time taken by particular events or tasks] 3.10, 3.11</p>	<p>add and subtract numbers mentally, including:</p> <ul style="list-style-type: none">- a three-digit number and ones- a three-digit number and tens- a three-digit number and hundreds <p>3.2, 3.6</p> <p>add and subtract numbers with up to three digits using formal written methods of columnar addition and subtraction 3.2, 3.6, 3.11</p> <p>estimate the answer to a calculation and use inverse operations to check answers 3.2, 3.6, 3.11</p> <p>solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction 3.2, 3.6, 3.11</p> <p>measure, compare, add and subtract: lengths (m / cm / mm); mass (kg / g); volume / capacity (l / ml) 3.2, 3.6, 3.11</p> <p>add and subtract amounts of money to give change, using both £ and p in practical contexts 3.2, 3.6, 3.11</p> <p>interpret and present data using bar charts, pictograms and tables 3.2, 3.5, 3.6, 3.11</p> <p>solve one-step and two-step questions [for example, "How many more?" and "How many fewer?"] using information presented in scaled bar charts and pictograms and tables 3.2, 3.6, 3.11</p> <p>estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m. / p.m., morning, afternoon, noon and midnight 3.10, 3.11</p> <p>know the number of seconds in a minute and the number of days in each month, year and leap year 3.10, 3.11, 3.13</p> <p>compare durations of events, [for example, to calculate the time taken by particular events or tasks] 3.10, 3.11</p>	<p>count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number 3.1, 3.3, 3.5, 3.8, 3.10, 3.13</p> <p>recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators 3.8, 3.13</p> <p>solve problems that involve all of the above (fractions) 3.7, 3.8, 3.12, 3.13</p> <p>recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables 3.3, 3.8, 3.13</p> <p>write and calculate mathematical statements for multiplication and division using the multiplication tables that students know, including for two-digit numbers times one-digit numbers using mental and progressing to formal written methods 3.3, 3.8, 3.13</p> <p>solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects 3.3, 3.8, 3.13</p> <p>count up and down in tenths; recognize that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10 3.5, 3.7, 3.8, 3.12, 3.13</p> <p>know the number of seconds in a minute and the number of days in each month, year and leap year 3.10, 3.11, 3.13</p>	<p>draw 2-D shapes and make 3-D shapes using modelling materials; recognize 3-D shapes in different orientations; and describe them 3.4, 3.9</p> <p>recognise that angles are a property of shape or a description of a turn 3.4, 3.9, 3.14</p> <p>identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle 3.4, 3.9, 3.14</p> <p>identify horizontal and vertical lines and pairs of perpendicular and parallel lines 3.9, 3.14</p> <p>measure the perimeter of simple 2-D shapes 3.14</p>



	Number Sense	Additive Reasoning	Multiplicative Reasoning	Geometric Reasoning
Y4 Pupils should be taught to:	<p>count in multiples of 6, 7, 9, 25 and 1000 4.1, 4.3, 4.5, 4.8, 4.10, 4.13</p> <p>find 1000 more or less than a given number 4.1, 4.5, 4.10</p> <p>count backwards through zero to include negative numbers 4.5, 4.10</p> <p>recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) 4.1, 4.5, 4.10</p> <p>order and compare numbers beyond 1000 4.1, 4.5, 4.10</p> <p>identify, represent and estimate numbers using different representations 4.1, 4.5, 4.10</p> <p>round any number to the nearest 10, 100 or 1000 4.1, 4.5, 4.10</p> <p>solve number and practical problems that involve all of the above and with increasingly large positive numbers 4.1, 4.5, 4.10</p> <p>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 4.5</p> <p>recognise and show, using diagrams, families of common equivalent fractions 4.7, 4.12</p> <p>count up and down in hundredths; recognize that hundredths arise when dividing an object by one hundred and dividing tenths by ten 4.7, 4.12</p> <p>add and subtract fractions with the same denominator 4.7, 4.12</p> <p>recognise and write decimal equivalents of any number of tenths or hundredths 4.7, 4.12</p> <p>recognise and write decimal equivalents to $\frac{1}{10}$, $\frac{1}{100}$, $\frac{7}{10}$ 4.7, 4.12</p> <p>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 4.7, 4.12</p> <p>round decimals with one decimal place to the nearest whole number 4.7, 4.12</p> <p>compare numbers with the same number of decimal places up to two decimal places 4.7, 4.12</p> <p>convert between different units of measure [for example, kilometre to metre, hour to minute] 4.7, 4.10, 4.12</p> <p>solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days 4.9, 4.10, 4.13</p> <p>read, write and convert time between analogue and digital 12 and 24-hour clocks 4.10</p>	<p>add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate 4.2, 4.6, 4.11</p> <p>estimate and use inverse operations to check answers to a calculation 4.2, 4.6, 4.11</p> <p>solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why 4.2, 4.6, 4.11</p> <p>estimate, compare and calculate different measures, including money in pounds and pence 4.2, 4.6, 4.11</p> <p>interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs 4.2, 4.6, 4.11</p> <p>solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs 4.2, 4.6, 4.11</p> <p>solve simple measure and money problems involving fractions and decimals to two decimal places 4.11</p>	<p>count in multiples of 6, 7, 9, 25 and 1000 4.1, 4.3, 4.5, 4.8, 4.10, 4.13</p> <p>recall multiplication and division facts for multiplication tables up to 12×12 4.3, 4.8, 4.13</p> <p>use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers 4.3, 4.8, 4.13</p> <p>recognise and use factor pairs and commutativity in mental calculations 4.3, 4.8, 4.13</p> <p>multiply two-digit and three-digit numbers by a one-digit number using formal written layout 4.13</p> <p>solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling and harder correspondence problems such as n objects are connected to m objects 4.3, 4.8, 4.13</p> <p>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 4.8, 4.13</p> <p>solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days 4.8, 4.10, 4.13</p>	<p>compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes 4.4, 4.9, 4.14</p> <p>identify acute and obtuse angles and compare and order angles up to two right angles by size 4.4, 4.14</p> <p>identify lines of symmetry in 2-D shapes presented in different orientations 4.4, 4.14</p> <p>describe positions on a 2-D grid as coordinates in the first quadrant 4.9</p> <p>describe movements between positions as translations of a given unit to the left / right and up / down 4.9</p> <p>plot specified points and draw sides to complete a given polygon 4.9</p> <p>complete a simple symmetric figure with respect to a specific line of symmetry 4.14</p> <p>measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres 4.14</p> <p>find the area of rectilinear shapes by counting squares 4.14</p>



	Number Sense	Additive Reasoning	Multiplicative Reasoning	Geometric Reasoning
Y5 Pupils should be taught to:	<p>read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit 5.1, 5.5, 5.10</p> <p>count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 5.1, 5.5, 5.10</p> <p>interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers including through zero 5.5, 5.10</p> <p>round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 5.1, 5.5, 5.10</p> <p>solve number problems and practical problems that involve all of the above 5.1, 5.5, 5.10</p> <p>multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 5.1, 5.3, 5.5, 5.7, 5.8, 5.10, 5.12, 5.13</p> <p>read and write decimal numbers as fractions [for example, $0.71 = \frac{71}{100}$] 5.1, 5.5, 5.7, 5.10, 5.12</p> <p>recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents 5.1, 5.5, 5.7, 5.10, 5.12</p> <p>round decimals with two decimal places to the nearest whole number and to one decimal place 5.1, 5.5, 5.10</p> <p>read, write, order and compare numbers with up to three decimal places 5.1, 5.5, 5.10</p> <p>solve problems involving number up to three decimal places 5.1, 5.5, 5.6, 5.10, 5.14</p> <p>convert between different units of metric measure (for example, kilometre and metre, centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) 5.1, 5.5, 5.10, 5.12</p> <p>solve problems involving converting between units of time 5.1, 5.5, 5.10, 5.11, 5.13</p> <p>read Roman numerals to 1000 (M) and recognize years written in Roman numerals 5.5</p> <p>compare and order fractions whose denominators are all multiples of the same number 5.7, 5.10, 5.12</p> <p>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, $\frac{5}{2} + \frac{2}{2} = 1\frac{1}{2}$] 5.7, 5.10, 5.11, 5.12</p> <p>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 5.7, 5.12</p>	<p>solve problems involving number up to three decimal places 5.1, 5.5, 5.6, 5.10, 5.11</p> <p>add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) 5.2, 5.6, 5.11</p> <p>add and subtract numbers mentally with increasingly large numbers 5.2, 5.6, 5.11</p> <p>use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy 5.2, 5.6, 5.11</p> <p>solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why 5.2, 5.6, 5.11</p> <p>use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation including scaling 5.2, 5.3, 5.6, 5.8, 5.11, 5.13</p> <p>solve comparison, sum and difference problems using information presented in a line graph 5.2, 5.6, 5.11</p> <p>complete, read and interpret information in tables, including timetables 5.2, 5.6, 5.11</p> <p>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, $\frac{2}{2} + \frac{3}{2} = 1\frac{1}{2}$] 5.7, 5.10, 5.11, 5.12</p> <p>add and subtract fractions with the same denominator and denominators that are multiples of the same number 5.11</p> <p>measure and calculate the perimeter of composite rectilinear shapes in centimeters and metres 5.6, 5.14</p>	<p>use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation including scaling 5.2, 5.3, 5.6, 5.8, 5.11, 5.13</p> <p>identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers 5.3, 5.8, 5.13</p> <p>multiply numbers up to 4 digits by a one- or two-digit number using a formal written method including long multiplication for two-digit numbers 5.3, 5.8, 5.13</p> <p>multiply and divide numbers mentally drawing upon known facts 5.3, 5.8, 5.13</p> <p>divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context 5.3, 5.8, 5.13</p> <p>multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 5.1, 5.3, 5.5, 5.7, 5.8, 5.10, 5.12, 5.13</p> <p>recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) 5.8, 5.13</p> <p>solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes 5.3, 5.8, 5.13</p> <p>solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign 5.3, 5.8, 5.13</p> <p>know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers 5.8, 5.13</p> <p>establish whether a number up to 100 is prime and recall prime numbers up to 19 5.8, 5.13</p> <p>solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates 5.8, 5.13</p> <p>solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{4}$, $\frac{1}{5}$, $\frac{2}{5}$ and those with a denominator of a multiple of 10 or 25 5.8, 5.13</p> <p>identify, name and write equivalent fractions of a given fraction, represented visually including tenths and hundredths 5.7, 5.13</p> <p>multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams 5.13</p> <p>understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints 5.13</p>	<p>identify 3-D shapes, including cubes and other cuboids, from 2-D representations 5.4, 5.9</p> <p>know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles 5.4, 5.9</p> <p>draw given angles, and measure them in degrees ($^{\circ}$) 5.4, 5.9</p> <p>identify:</p> <ul style="list-style-type: none"> angles at a point and one whole turn (total 360°) 5.4, 5.9 angles at a point on a straight line and $\frac{1}{2}$ a turn (total 180°) 5.4, 5.9 other multiples of 90° 5.4, 5.9 <p>use the properties of rectangles to deduce related facts and find missing lengths and angles 5.4, 5.9, 5.14</p> <p>distinguish between regular and irregular polygons based on reasoning about equal sides and angles 5.4, 5.9, 5.14</p> <p>identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed 5.9, 5.14</p> <p>measure and calculate the perimeter of composite rectilinear shapes in centimeters and metres 5.6, 5.14</p> <p>calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes 5.14</p> <p>estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water] 5.14</p>

	Number Sense	Additive Reasoning	Multiplicative Reasoning	Geometric Reasoning
Y6 Pupils should be taught to:	<p>read, write, order and compare numbers up to 10 000 000 and determine the value of each digit 6.1, 6.5, 6.10</p> <p>round any whole number to a required degree of accuracy 6.1, 6.5, 6.10</p> <p>use negative numbers in context, and calculate intervals across zero 6.5, 6.6, 6.10</p> <p>solve number and practical problems that involve all of the above 6.1, 6.5, 6.10</p> <p>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 6.1, 6.5, 6.7, 6.10, 6.12</p> <p>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 6.1, 6.2, 6.3, 6.5, 6.6, 6.7, 6.8, 6.10, 6.11, 6.12, 6.13</p> <p>convert between miles and kilometers 6.1, 6.8, 6.10</p> <p>express missing number problems algebraically 6.2, 6.3, 6.4, 6.6, 6.7, 6.8, 6.9, 6.11, 6.12, 6.13, 6.14</p> <p>use simple formulae 6.2, 6.3, 6.4, 6.6, 6.7, 6.8, 6.9, 6.11, 6.12, 6.13, 6.14</p> <p>generate and describe linear number sequences 6.2, 6.3, 6.6, 6.7, 6.8, 6.11, 6.12, 6.13</p> <p>find pairs of numbers that satisfy an equation with two unknowns 6.2, 6.3, 6.4, 6.6, 6.7, 6.8, 6.9, 6.11, 6.12, 6.13, 6.14</p> <p>interpret and construct pie charts and line graphs and use these to solve problems 6.2, 6.3, 6.6, 6.7, 6.8, 6.11, 6.12, 6.13</p> <p>use common factors to simplify fractions; use common multiples to express fractions in the same denominator 6.7, 6.10, 6.12</p> <p>compare and order fractions, including fractions >1 6.7, 6.10, 6.12</p> <p>associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{3}{8}$] 6.7, 6.12</p> <p>recall and use equivalences between simple fractions, decimals and percentages, including in different context 6.7, 6.12</p>	<p>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 6.1, 6.2, 6.3, 6.5, 6.6, 6.7, 6.8, 6.10, 6.11, 6.12, 6.13</p> <p>perform mental calculations, including with mixed operations and large numbers 6.2, 6.3, 6.6, 6.8, 6.11, 6.13</p> <p>use their knowledge of the order of operations to carry out calculations involving the four operations 6.2, 6.3, 6.6, 6.8, 6.11, 6.13</p> <p>solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why 6.2, 6.6, 6.11</p> <p>solve problems involving addition, subtraction, multiplication and division 6.2, 6.3, 6.6, 6.8, 6.9, 6.11, 6.13</p> <p>use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy 6.2, 6.3, 6.6, 6.8, 6.11, 6.13</p> <p>solve problems which require answers to be rounded to specified degrees of accuracy 6.2, 6.6, 6.11</p> <p>express missing number problems algebraically 6.2, 6.3, 6.4, 6.6, 6.7, 6.8, 6.9, 6.11, 6.12, 6.13, 6.14</p> <p>use simple formulae 6.2, 6.3, 6.4, 6.6, 6.7, 6.8, 6.9, 6.11, 6.12, 6.13, 6.14</p> <p>generate and describe linear number sequences 6.2, 6.3, 6.6, 6.7, 6.8, 6.11, 6.12, 6.13</p> <p>find pairs of numbers that satisfy an equation with two unknowns 6.2, 6.3, 6.4, 6.6, 6.7, 6.8, 6.9, 6.11, 6.12, 6.13, 6.14</p> <p>enumerate possibilities of combinations of two variables 6.2, 6.3, 6.4, 6.6, 6.8, 6.9, 6.11, 6.13, 6.14</p> <p>solve problems involving the calculation and conversion of units of measure, using decimal notation to three decimal places where appropriate 6.2, 6.3, 6.6, 6.7, 6.8, 6.11, 6.12, 6.13</p> <p>interpret and construct pie charts and line graphs and use these to solve problems 6.2, 6.3, 6.6, 6.7, 6.8, 6.11, 6.12, 6.13</p> <p>calculate and interpret the mean as an average 6.3, 6.8, 6.11, 6.13</p> <p>add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions 6.11</p>	<p>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 6.1, 6.2, 6.3, 6.5, 6.6, 6.7, 6.8, 6.10, 6.11, 6.12, 6.13</p> <p>solve problems involving addition, subtraction, multiplication and division 6.2, 6.3, 6.6, 6.8, 6.11, 6.13</p> <p>express missing number problems algebraically 6.2, 6.3, 6.4, 6.6, 6.7, 6.8, 6.9, 6.11, 6.12, 6.13, 6.14</p> <p>use simple formulae 6.2, 6.3, 6.4, 6.6, 6.7, 6.8, 6.9, 6.11, 6.12, 6.13, 6.14</p> <p>generate and describe linear number sequences 6.2, 6.3, 6.6, 6.7, 6.8, 6.11, 6.12, 6.13</p> <p>find pairs of numbers that satisfy an equation with two unknowns 6.2, 6.3, 6.4, 6.6, 6.7, 6.8, 6.9, 6.11, 6.12, 6.13, 6.14</p> <p>enumerate possibilities of combinations of two variables 6.2, 6.3, 6.4, 6.6, 6.8, 6.9, 6.11, 6.13, 6.14</p> <p>solve problems involving the calculation and conversion of units of measure, using decimal notation to three decimal places where appropriate 6.2, 6.3, 6.6, 6.7, 6.8, 6.11, 6.12, 6.13</p> <p>interpret and construct pie charts and line graphs and use these to solve problems 6.2, 6.3, 6.6, 6.7, 6.8, 6.11, 6.12, 6.13</p> <p>multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication 6.2, 6.3, 6.12</p> <p>divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context 6.2, 6.3, 6.8, 6.12</p> <p>divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context 6.2, 6.3, 6.12</p> <p>perform mental calculations, including with mixed operations and large numbers 6.2, 6.3, 6.6, 6.8, 6.11, 6.13</p> <p>identify common factors, common multiples and prime numbers 6.3, 6.8, 6.12</p> <p>use their knowledge of the order of operations to carry out calculations involving the four operations 6.2, 6.3, 6.6, 6.8, 6.11, 6.13</p> <p>use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy 6.2, 6.3, 6.6, 6.8, 6.11, 6.13</p> <p>multiply one-digit numbers with up to two decimal places by whole numbers 6.2, 6.3, 6.12</p> <p>use written division methods in cases where the answer has up to two decimal places 6.2, 6.3, 6.12</p> <p>solve problems involving the calculation of percentages [for example, of measures and such as 15% of 360] and the use of percentages for comparison 6.3, 6.8, 6.12</p> <p>calculate and interpret the mean as an average 6.3, 6.8, 6.11, 6.13</p> <p>convert between miles and kilometres 6.1, 6.8, 6.10</p> <p>solve problems involving the relative sizes of two quantities, where missing values can be found by using integer multiplication and division facts 6.2, 6.12</p> <p>solve problems involving unequal sharing and grouping using knowledge of fractions and multiples 6.2, 6.12</p> <p>multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $\frac{3}{4} \times \frac{1}{2} = \frac{3}{8}$] 6.12</p> <p>divide proper fractions by whole numbers [for example, $\frac{3}{4} \div 2 = \frac{3}{8}$] 6.12</p>	<p>express missing number problems algebraically 6.2, 6.3, 6.4, 6.6, 6.7, 6.8, 6.9, 6.11, 6.12, 6.13, 6.14</p> <p>use simple formulae 6.2, 6.3, 6.4, 6.6, 6.7, 6.8, 6.9, 6.11, 6.12, 6.13, 6.14</p> <p>find pairs of numbers that satisfy an equation with two unknowns 6.2, 6.3, 6.4, 6.6, 6.7, 6.8, 6.9, 6.11, 6.12, 6.13, 6.14</p> <p>enumerate possibilities of combinations of two variables 6.2, 6.3, 6.4, 6.6, 6.8, 6.9, 6.11, 6.13, 6.14</p> <p>draw 2-D shapes using given dimensions and angles 6.4, 6.9, 6.14</p> <p>recognise, describe and build simple 3-D shapes, including making nets 6.4, 6.9, 6.14</p> <p>compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons 6.4, 6.9, 6.14</p> <p>illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius 6.4, 6.9, 6.14</p> <p>recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles 6.4, 6.14</p> <p>recognise that shapes with the same areas can have different perimeters and vice versa 6.4, 6.14</p> <p>calculate the area of parallelograms and triangles 6.4, 6.9, 6.14</p> <p>recognise when it is possible to use the formulae for area and volume of shapes 6.4, 6.9, 6.14</p> <p>describe positions on the full coordinate grid (all four quadrants) 6.9, 6.14</p> <p>draw and translate simple shapes on the coordinate plane, and reflect them in the axes 6.9, 6.14</p> <p>calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3) and extending to other units, [for example, mm^3 and km^3] 6.9, 6.14</p> <p>solve problems involving similar shapes where the scale factor is known or can be found 6.9, 6.14</p>

Rationale/ Progression

The progression and breadth of skills in maths is laid out in great detail within the National Curriculum.

Subject Implementation



Planning

Class teachers use unit objectives to plan individual lessons and blocks of work. The EYFS planning document can be found [here](#). Classes 2-5 use this weekly planning format for mathematics:

Maths Weekly Planner		Teacher:	Year:	Term: Aut/Sp/Su	W/B
Objectives:					Vocabulary
Resources	Mental/Oral	Main Teaching Activity			Plenary
Monday					
Tuesday					
Wednesday					
Thursday					
Friday					

1 - Planning should sit alongside details of those children working at, below or above age related expectations.

Targets in the Foundation Stage are taken from the EYFS guidance document. KS1 and KS2 units are taught following the Rising Stars curriculum. An example of a teaching sequence can be seen below.

YEAR 4	
Sequence 1	<ul style="list-style-type: none"> count in multiples of 1000 find 1000 more or less than a given number recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) order and compare numbers beyond 1000 identify, represent and estimate numbers using different representations 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
Sequence 2	<ul style="list-style-type: none"> add and subtract numbers with up to 4 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, including money in pounds and pence 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
Sequence 3	<ul style="list-style-type: none"> count in multiples of 6, 7, 9, 25 and 1000 recall multiplication and division facts for multiplication tables up to 12×12 use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers recognise and use factor pairs and commutativity in mental calculations solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, in teger scaling and harder correspondence problems which n objects are connected to m objects
Sequence 4	<ul style="list-style-type: none"> compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes identify acute and obtuse angles and compare and order angles up to two right angles by size identify lines of symmetry in 2-D shapes presented in different orientations
Sequence 5	<ul style="list-style-type: none"> count in multiples of 1000 find 1000 more or less than a given number 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 identify, represent and estimate numbers using different representations 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

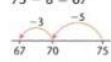
In classes 3-5 these teaching sequences are stuck into exercise books prior to the commencement of a new unit.

A range of text books and resources are used to support the teaching of maths. Some of these are detailed below.

TARGET To use different strategies to +/- mentally one-digit numbers to or from 2-digit numbers.

Examples

BRIDGING
 $75 - 8 = 67$



START WITH LARGEST
 Add 7, 8, 19 and 4

- 19 + 8 + 7 + 4
- 27 + 7 + 4
- 34 + 4
- 38

MAKE 10

- 5 + 7 + 8 + 3
- 10 + 8 + 5
- 18 + 5
- 23
- 4 + 9 + 7 + 6
- 10 + 9 + 7
- 19 + 7
- 26

A
 Work out by bridging.

1 7 + 6	9 16 - 9
2 8 + 4	10 13 - 8
3 9 + 7	11 15 - 6
4 6 + 8	12 12 - 5
5 15 + 6	13 24 - 7
6 18 + 7	14 23 - 5
7 17 + 9	15 21 - 9
8 19 + 5	16 26 - 7

Work out

17 8 + 25	21 9 + 68
18 6 + 46	22 4 + 27
19 5 + 38	23 8 + 46
20 7 + 54	24 6 + 39

Find the totals.

25 9 + 8 + 1
26 5 + 6 + 5
27 6 + 9 + 4
28 5 + 3 + 7
29 2 + 7 + 8
30 3 + 15 + 5

B
 Work out by bridging.

1 56 + 7	9 75 - 8
2 48 + 4	10 53 - 5
3 95 + 9	11 81 - 7
4 73 + 8	12 38 - 9
5 87 + 6	13 96 - 9
6 59 + 7	14 44 - 8
7 34 + 8	15 67 - 9
8 68 + 6	16 72 - 6

Copy and complete.

17 5 + 3 + 26 = <input type="text"/>
18 4 + 38 + <input type="text"/> = 49
19 <input type="text"/> + 23 + 6 = 37
20 9 + <input type="text"/> + 35 = 48

Copy and complete.

21 4 + 9 + 6 + 2 = <input type="text"/>
22 <input type="text"/> + 3 + 5 + 7 = 21
23 5 + <input type="text"/> + 8 + 5 = 25
24 6 + 8 + <input type="text"/> + 12 = 39
25 11 + 2 + 9 + 5 = <input type="text"/>
26 6 + <input type="text"/> + 17 + 3 = 30

C
 Copy and complete.

1 97 + <input type="text"/> = 105
2 95 + <input type="text"/> = 102
3 98 + <input type="text"/> = 104
4 92 + <input type="text"/> = 101
5 43 - <input type="text"/> = 26
6 76 - <input type="text"/> = 52
7 82 - <input type="text"/> = 47
8 65 - <input type="text"/> = 32

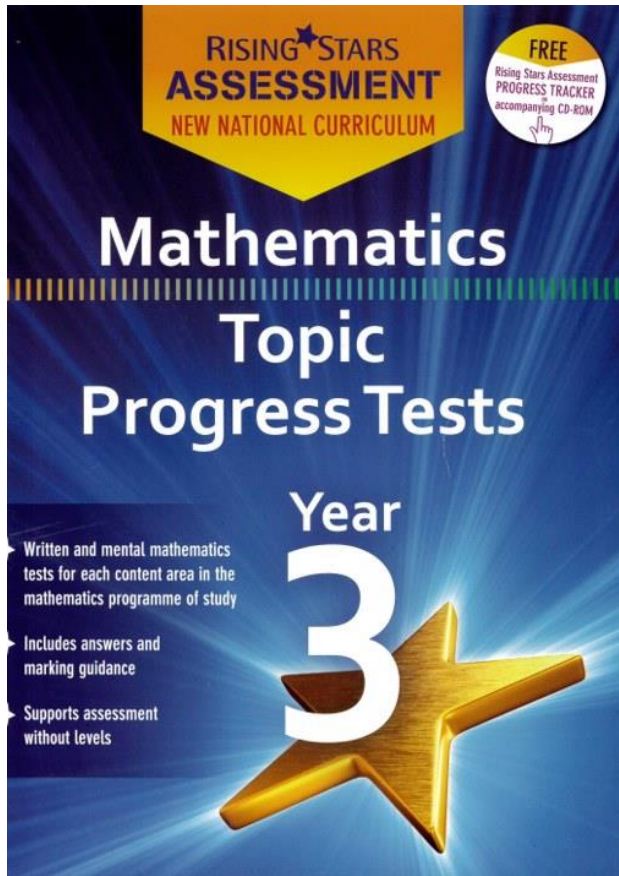
Add up each set of numbers.

9 15, 9, 36, 8
10 8, 55, 17, 6
11 7, 14, 5, 29
12 4, 9, 48, 13
13 6, 37, 19, 5
14 20, 30, 60, 70
15 50, 30, 40, 50
16 80, 50, 20, 40
17 60, 10, 80, 90
18 40, 70, 50, 60

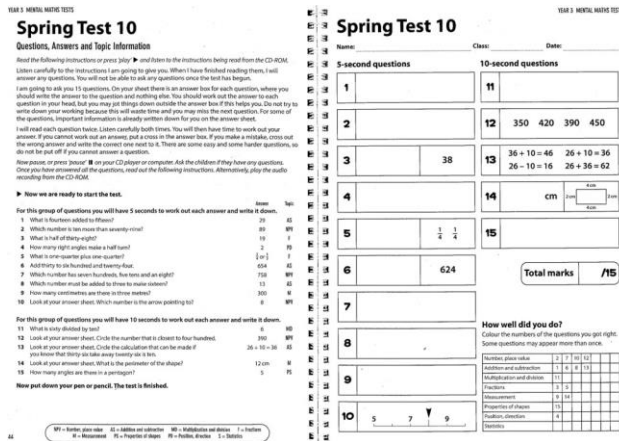
2 - Target Your Maths is a useful textbook. Each objective has three levels of challenge with part B equating to age-related expectations and part A and C broadly equating to work a year below and above the expected level. This facilitates differentiation within a topic and helps children to determine their own level of challenge when appropriate.

The image shows two pages from a textbook. The top page is titled 'Angles in circles, triangles and straight lines' and contains several diagrams and questions. It includes a circle with a central angle of 300 degrees, a triangle with angles 70, 65, and 7, and a straight line with angles 30 and 7. The bottom page is also titled 'Angles in circles, triangles and straight lines' and contains more diagrams and questions, including a circle with a central angle of 180 degrees and a triangle with angles 30, 60, and 90.

3 - Medal Maths books also provide 3 levels of differentiated work by topic.



4 - The Rising Stars Topic Progress Tests provide Diagnostic, Mid- Topic, End of Topic and Extension Tests in all areas and therefore support a mastery approach where progress is monitored and gaps addressed before moving on.



5 - The Rising Stars Mental Maths Tests provide weekly tests for all year groups so the progress of mental strategies can be monitored.

Assessment Timetable

Phonic phase assessment is on- going

	Autumn	Spring	Summer
Class 1- year R	Reception Baseline Assessment (Sept 2020) Development Matters Grid on entry Reading age test for more able Bespoke maths assessment	Development Matters Grid progress Reading age test for more able Bespoke maths assessment Writing- teacher assessed	Foundation Stage Profile Development Matters Grid Progress Bespoke maths assessment PIRA and PUMA Writing- teacher assessed
Class 1- year 1	PIRA and PUMA Reading age test Writing- teacher assessed All data and Science level on tracker	PIRA and PUMA Writing- teacher assessed Reading level- teacher assessed Reading age test All data and Science level on tracker	PIRA and PUMA Spelling age test Writing- teacher assessed All data and Science level on tracker
Class 2	PIRA and PUMA Reading age test Spelling age test Writing- teacher assessed All data and Science level on tracker	PIRA and PUMA Writing- teacher assessed Reading age test All data and Science level on tracker	Spelling age test statutory testing for year 2s. PIRA and PUMA All data and Science level on tracker
Class 3	PIRA and PUMA Reading age test Spelling age test Writing- teacher assessed All data and Science level on tracker	PIRA and PUMA Writing- teacher assessed Reading age test All data and Science level on tracker	Spelling age test statutory testing for year 2s. PIRA and PUMA All data and Science level on tracker
Class 4	PIRA and PUMA Reading age test Spelling age test Writing- teacher assessed All data and Science level on tracker	PIRA and PUMA Writing- teacher assessed Reading age test All data and Science level on tracker	Spelling age test PIRA and PUMA Statutory Tables testing All data and Science level on tracker
Class 5	PIRA and PUMA Reading age test Spelling age test Writing- teacher assessed All data and Science level on tracker	PIRA and PUMA Writing- teacher assessed Reading age test All data and Science level on tracker	Spelling age test statutory testing Year 6 Statutory T.A PIRA and PUMA All data and Science level on tracker

Maths is an important part of both statutory and non- statutory assessment. In addition to teachers' on-going assessment of mathematics, termly PUMA testing is conducted from year 1 and recorded on the school's pupil tracking software, DCPro. All children are discussed at termly Pupil Progress Meetings with those achieving a Standardised Score below 95 being flagged up.

It may be decided that a short- term intervention is required. This is typically actioned via an Intervention Request Form:

Intervention Request and Feedback Form

Name of Pupil/s <small>(recommended maximum of 3)</small>			
Learning Objective			
Length of Intervention <small>(maximum 5 weeks)</small>		Frequency <small>(maximum 3 times a week)</small>	
Summary of Intervention	Assessment Methods	Review/ Feedback	
Date submitted			
Date of start of intervention			
Date returned to class teacher			

If longer- term intervention looks likely to be required the child could also join Mathematics intervention. Mathematics is an online maths program that can easily be personalised to individual learning needs.

Currently, catch- up funding can also be used to identify children for individual or very small group tutoring if they have been adversely effected by the pandemic.

Children may also be entered into a specific Times Tables intervention if the learning of their tables is not being supported at home.

Moderation/evidence sheets are kept in the back of year 2 exercise books:

Maths Moderation Grid						
Name of Child:		Class:		Objective Achieved		
Working Towards the Expected Standard				<u>1</u>	<u>2</u>	<u>3</u>
WT1	read and write numbers in numerals up to 100					
WT2	partition a two-digit number into tens and ones to demonstrate an understanding of place value, though they may use structured resources to support them (base ten/part-part-whole/column method)					
WT3	add and subtract two-digit numbers and ones, and two-digit numbers and tens, where no regrouping is required, explaining their method verbally, in pictures or using apparatus (e.g. $23 + 5$; $46 + 20$; $16 - 5$; $85 - 30$) Key number bonds to 10 are: $0 + 10$, $1 + 9$, $2 + 8$, $3 + 7$, $4 + 6$, $5 + 5$.					
WT4	recall at least four of the six number bonds for 10 and reason about associated facts (e.g. $6 + 4 = 10$, therefore $4 + 6 = 10$ and $10 - 6 = 4$)					
WT5	count in twos, fives and tens from 0 and use this to solve problems					
WT6	know the value of different coins					
WT7	name some common 2-D and 3-D shapes from a group of shapes or from pictures of the shapes and describe some of their properties (e.g. triangles, rectangles, squares, circles, cuboids, cubes, pyramids and spheres)					
Working At the Expected Standard				<u>1</u>	<u>2</u>	<u>3</u>
E1	read scales* in divisions of ones, twos, fives and tens The scale can be in the form of a number line, a practical situation or a graph axis.					
E2	partition any two-digit number into different combinations of tens and ones, explaining their thinking verbally, in pictures or using apparatus					
E3	add and subtract any 2 two-digit numbers using an efficient strategy, explaining their method verbally, in pictures or using apparatus (e.g. $48 + 35$; $72 - 17$)					
E4	recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships (e.g. If $7 + 3 = 10$, then $17 + 3 = 20$; if $7 - 3 = 4$, then $17 - 3 = 14$; leading to if $14 + 3 = 17$, then $3 + 14 = 17$, $17 - 14 = 3$ and $17 - 3 = 14$)					
E5	recall multiplication and division facts for 2, 5 and 10 and use them to solve simple problems, demonstrating an understanding of commutativity as necessary					
E6	identify $1/4$, $1/3$, $1/2$, $2/4$, $3/4$, of a number or shape, and know that all parts must be equal parts of the whole					
E7	use different coins to make the same amount					
E8	read the time on a clock to the nearest 15 minutes					
E9	name and describe properties of 2-D and 3-D shapes, including number of sides, vertices, edges, faces and lines of symmetry					
Working at Greater Depth within the Expected Standard				<u>1</u>	<u>2</u>	<u>3</u>
GD1	read scales where not all numbers on the scale are given and estimate points in between. The scale can be in the form of a number line, a practical situation or a graph axis.					
GD2	recall and use multiplication and division facts for 2, 5 and 10 and make deductions outside known multiplication facts					
GD3	use reasoning about numbers and relationships to solve more complex problems and explain their thinking (e.g. $29 + 17 = 15 + 4 + \text{together Jack and Sam have } \text{€}14$. Jack has $\text{€}2$ more than Sam. How much money does Sam have? etc.)					
GD4	solve unfamiliar word problems that involve more than one step (e.g. which has the most biscuits, 4 packets of biscuits with 5 in each packet or 3 packets of biscuits with 10 in each packet?)					
GD5	read the time on a clock to the nearest 5 minutes					
GD6	describe similarities and differences of 2-D and 3-D shapes, using their properties (e.g. that two different 2-D shapes both have only one line of symmetry, that a cube and a cuboid have the same number of edges, faces and vertices, but different dimensions).					

I can statements are used in other year groups so children can be involved in their assessment and target setting at an age- appropriate level:

MATHS TARGETS

I can read Roman numerals to 1000 (M) and recognise years written in Roman numerals.	I can solve problems involving \times and \div including scaling by simple fractions and problems involving simple rates.	I can use all four operations to solve problems involving measure using decimal notation, including scaling.	I can write % as a fraction		
I can solve number problems and practical problems that involve all of the below.	I can solve problems involving \times and \div including using factors and multiples, squares and cubes.	I can solve problems involving converting between units of time	I can recognise the % symbol and understand what it means	I can identify, describe and represent the position of a shape following a reflection or translation.	
I can round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000	I can recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3)	I can estimate volume and capacity.	I can solve problems involving number up to 3d.p	I can distinguish between regular and irregular polygons.	
I can use addition and subtraction to solve multi-step problems.	I can \times and \div whole numbers and those involving decimals by 10, 100 and 1000	I can estimate the area of irregular shapes.	I can round decimals with 2 decimal places to the nearest whole number and to one decimal place.	I can use the properties of rectangles to deduce related facts and find missing lengths and angles	
I can use negative numbers in context: count forwards and backwards with positive and negative whole numbers through zero.	I can multiply and divide numbers mentally.	I can calculate and compare the area of rectangles (including squares)	I can recognise and use 1000ths and relate them to 10ths, 100ths and decimal equivalents.	I can identify other multiples of 90°	I can complete, read and interpret information in tables including timetables.
I can use rounding to check answers to calculations.	I can divide numbers up to 4 digits by a one-digit number.	I can measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres.	I can read, write decimal numbers as fractions.	I can identify angles at a point on a straight line and $\frac{1}{2}$ a turn	I can solve 'difference' problems using information presented in a line graph.
I can subtract mentally using increasingly large numbers.	I can multiply numbers up to 4 digits by a one- or two-digit number	I understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints	I can multiply proper fractions and mixed numbers by whole numbers	I can identify angles at a point and one whole turn.	I can solve 'sum' problems using information presented in a line graph.
I can add mentally using increasingly large numbers.	I can establish whether a number up to 100 is prime and recall prime numbers up to 19.	I can convert between different units of metric measure.	I can $+$ and $-$ fractions with the same denominator and denominators that are multiples of the same number.	I can draw given angles, and measure them in degrees ($^\circ$)	I can solve 'comparison' problems using information presented in a line graph.
I know what each digit represents in numbers to 1 000 000.	I can subtract whole numbers with more than 4 digits.		I can recognise mixed numbers and convert from one form to the other	I know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles	
I can read, write, order and compare numbers to at least 1 000 000.	I can add whole numbers with more than 4 digits.		I can identify, name and write equivalent fractions of a given fraction.	I can compare and order fractions whose denominators are all multiples of the same number	
Number and Place Value	Addition and Subtraction	Multiplication and Division	Measurements	Fractions and Decimals	Geometry
					Statistics

Examples of Work



Class 1

Maths in the EYFS is very practical, often with children working in small groups.

An activity involved the children taking turns rolling a dice and collecting that many cubes to add to their cube 'snake'. They had 3 mins (sand timer). At the end they had to compare the length of their snakes to see which one was longer. The objective was to learn/ develop their understanding of the cardinality of numbers, subitise to 6 and to count cubes accurately. It also required the children to understand how to compare length. It builds on the work we have done previously where they are shown the importance of starting their objects from the same point when comparing. These children clearly understood this as they did it independently.

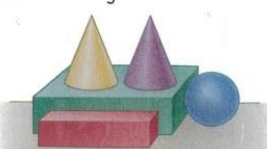
*Children working together to read numbers to 10 and show on the fingers (gloves filled with sand).
Learning to subitise.*

This video shows children exploring balancing scales and developing an understanding of heavier/ lighter through an adult led game. The children had 5 turns at picking up cards which told them how much rice to scoop into their bucket. At the end, the card in the envelope informed them whether the lighter/ heavier side was the winner. Adult's role was to support fair play and model/ check for understanding of the language of weight.

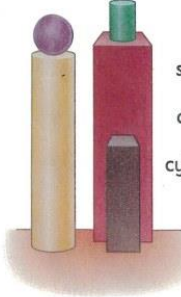
Shape work with year 1 children in class 1.

ko - Learn to identify 3D shapes. Homework: Please return by Thursday 17th Dec. 2

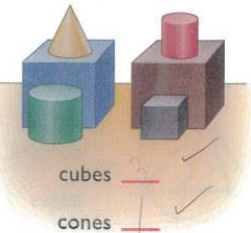
How many?



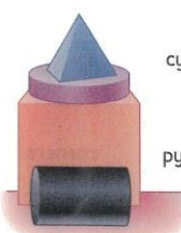
cuboids 2 ✓
spheres 1 ✓
cones 2 ✓



spheres 1 ✓
cuboids 1 ✓
cylinders 2 ✓

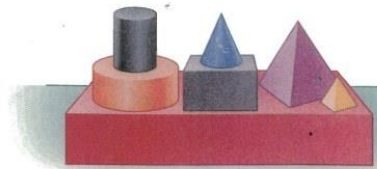


cubes 2 ✓
cones 1 ✓
cylinders 2 ✓



cylinders 2 ✓
cubes 1 ✓
pyramids 1 ✓

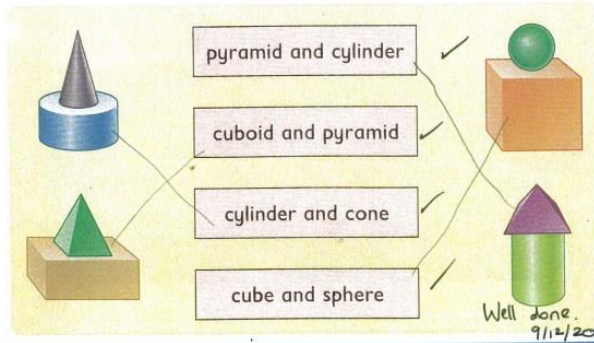
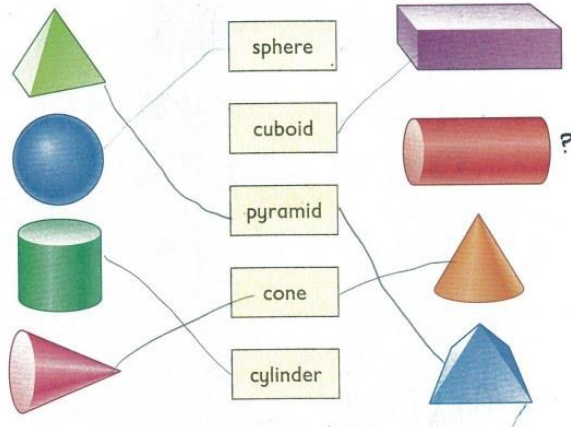
☆ Super work 14/12/20



cones 1 ✓
pyramids 2 ✓
cylinders 2 ✓
cuboids 2 ✓

Lo - Learn to identify 3D shapes.

Match.



Shape	How many corners?	How many sides?	Does it have any curved sides?	Does it have any straight sides?
Triangle	3	3	No	No yes
Oblong	4	4	No	Yes ✓
Circle	0	0	Yes	No ✓
Square	4	4	No	Yes ✓
Pentagon	5	5	No	Yes ✓
Hexagon	6	6	No	Yes ✓

Lo - Learn to identify the properties of 2D shapes. Good effort. Homework please return by 10/12/20

Class 2

Practical measuring activities and number displays in class 2.



The work below shows work of a secure year 2 level. The child is confidently adding and subtracting money in order to calculate change.

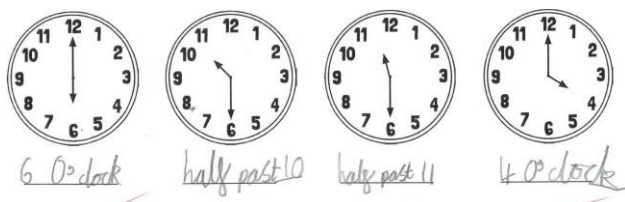
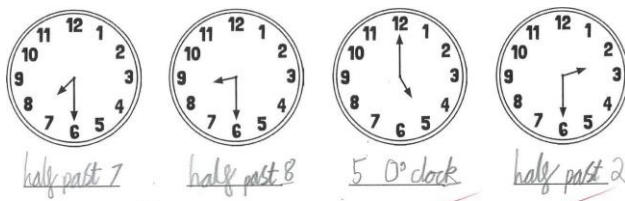
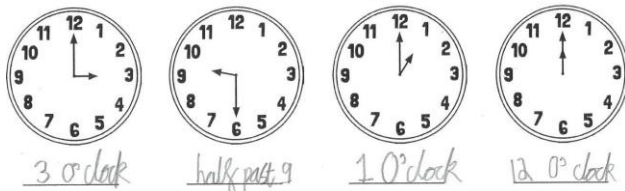
$68 = \frac{2.66}{68} =$	$68 =$	$68 = \frac{0.68}{68} =$	$68 = \frac{65.3}{68} =$
$91 = \frac{90.1}{91} =$	$91 =$	$91 = \frac{60.31}{91} =$	$91 = \frac{0.91}{91} =$
3. $47 = \frac{0.47}{47} =$	$47 =$	$47 = \frac{40.7}{47} =$	$47 = \frac{45.2}{47} =$
$93 = \frac{90.3}{93} =$	$93 = \frac{0}{93} =$	$93 = \frac{63.30}{93} =$	$93 = \frac{92.1}{93} =$
5. $42 = \frac{0.42}{42} =$	$42 = \frac{41}{42} =$	$42 = \frac{20.22}{42} =$	$42 = \frac{40.1}{42} =$
$79 = \frac{70.9}{79} =$	$79 =$	$79 = \frac{76.3}{79} =$	$79 = \frac{73.6}{79} =$
$51 = \frac{50.1}{51} =$	$51 =$	$51 = \frac{40.11}{51} =$	$51 = \frac{40.3}{51} =$
$99 = \frac{0.99}{99} =$	$99 =$	$99 = \frac{61+30}{99} =$	$99 = \frac{56.43}{99} =$
$78 = \frac{8.70}{78} =$	$78 =$	$78 = \frac{8.75}{78} =$	$78 = \frac{77.1}{78} =$
10. $85 = \frac{0.85}{85} =$	$85 =$	$85 = \frac{86.4}{85} =$	$85 = \frac{84.1}{85} =$

The work below shows adding 2- digit numbers with a formal, written method, leading on to the year 3 requirement to do so with 3 digit numbers.

Addition (Some you will have to cross the 10s)

$55 + 13 =$ $\begin{array}{r} 55 \\ + 13 \\ \hline 68 \end{array}$	$46 + 19 =$ $\begin{array}{r} 46 \\ + 19 \\ \hline 65 \end{array}$	$28 + 53 =$ $\begin{array}{r} 28 \\ + 53 \\ \hline 81 \end{array}$
$52 + 28 =$ $\begin{array}{r} 52 \\ + 28 \\ \hline 80 \end{array}$	$37 + 29 =$ $\begin{array}{r} 37 \\ + 29 \\ \hline 66 \end{array}$	$56 + 35 =$ $\begin{array}{r} 56 \\ + 35 \\ \hline 91 \end{array}$
$45 + 34 =$ $\begin{array}{r} 45 \\ + 34 \\ \hline 79 \end{array}$	$78 + 13 =$ $\begin{array}{r} 78 \\ + 13 \\ \hline 91 \end{array}$	$12 + 78 =$ $\begin{array}{r} 12 \\ + 78 \\ \hline 90 \end{array}$

The work below shows working at the year 1 expected level- telling time to the hour and half hour. Year 2 will progress to 1/4 past and to and then to 5 minute intervals.



Shape work in class 2.

13.10.20

WALT: describe the properties of 3D shapes including the number of edges, vertices and faces. 2

Cone
Faces: 2
Edges: 1
Vertices: 1

Cylinder
Faces: 3
Edges: 2
Vertices: 0

Cube
Faces: 6
Edges: 12
Vertices: 8

Pyramid
Faces: 5
Edges: 9
Vertices: 5

Cuboid
Faces: 6
Edges: 12
Vertices: 8

Sphere
Faces: 1
Edges: 0
Vertices: 0

12.10.20

WALT: Identify and describe the properties of 2-D shapes 2

Match the shapes to the right set

pentagons 5

hexagons 6

octagons 8

Can you spot the mistake? Which shape does not fit into any of these three answers?

Super Link!

Class 3

In the work below M indicates that this concept has been mastered and the pupil is able to support a child finding the method difficult. Mastery of this task requires an understanding of the place value of a 3 digit number - a year 3 objective as is +/- 1, 10, 100 from a 3 digit number.

Examples of mastery approach in class 3.

- add and subtract numbers mentally, including:
 - a three-digit number and ones
 - a three-digit number and tens
 - a three-digit number and hundreds
- add and subtract numbers with up to three digits
- estimate the answer to a calculation and use inverse operations to check answers
- solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction
- measure, compare, add and subtract lengths (m/cm/mm), mass (kg/g), volume/capacity (l/ml)
- add and subtract amounts of money to give change, using both £ and p in practical contexts
- interpret and present data using bar charts, pictograms and tables
- solve one-step and two-step questions (for example, 'How many more?' and 'How many fewer?') using information presented in scaled bar charts and pictograms and tables

Find

- 17 9 more than 342
- 18 4 more than 496
- 19 8 less than 562
- 20 6 less than 711
- 21 5 more than 198
- 22 8 more than 382
- 23 9 less than 400
- 24 4 less than 872
- 25 7 more than 359
- 26 6 more than 894
- 27 5 less than 544
- 28 7 less than 173

11

Write the answer only.

- 1 $273 + 100$
- 2 $539 + 400$
- 3 $406 + 200$
- 4 $151 + 300$
- 5 $324 + 500$
- 6 $300 + 498$
- 7 $200 + 262$
- 8 $100 + 515$
- 9 $400 + 387$
- 10 $200 + 646$
- 11 $527 - 100$
- 12 $774 - 500$
- 13 $836 - 700$
- 14 $591 - 500$
- 15 $919 - 300$
- 16 $456 - 100$
- 17 $682 - 400$
- 18 $805 - 300$
- 19 $948 - 200$
- 20 $364 - 300$

Write the answer only.

- 1 $149 + 20$
- 2 $404 + 30$
- 3 $598 + 50$
- 4 $767 + 40$
- 5 $282 + 70$
- 6 $923 + 40$
- 7 $356 + 60$
- 8 $835 + 40$
- 9 $171 + 50$
- 10 $619 + 70$
- 11 $474 - 50$
- 12 $391 - 30$
- 13 $122 - 40$
- 14 $658 - 60$
- 15 $805 - 70$
- 16 $543 - 80$
- 17 $789 - 50$
- 18 $916 - 30$
- 19 $231 - 90$
- 20 $467 - 70$

Super

11/19

Wrote all 19

$$\begin{array}{r} 35 \\ + 23 \\ \hline 58 \end{array}$$

$$\begin{array}{r} 60 \\ + 27 \\ \hline 87 \end{array}$$

In the book below A indicates that the child has not yet mastered this method. They will be paired with a child who has, in order to work together.

Mastery approach - Class 3

80 cm = 5.11 m
 200 cm = 2.00 m
 100 cm = 1.00 m

WA J. - Mently

70m barometer
 near 100

Wood

Just say 24th September
 2019 24/09/19

WA J. rounding

B numbers to 10/100

- 51 → 50 ✓
- 62 → 60 ✓
- 35 → 40 ✓
- 11 → 100 ✓
- 60 → 80 ✓
- 56 → 60 ✓
- 8 → 9 ✓
- 12 → 12 ✓
- 110 → 120 x
- 127 → 207 x
- 1238 → 338 x look at thousand
- 107 → 207 x ones
- 45 → 55 x
- 82 → 62 x

A

B
 Write the answers only.

1 268 + 7	9 257 + 8
2 187 + 4	10 946 + 5
3 653 + 9	11 788 + 6
4 326 + 6	12 395 + 7
5 107 - 8	13 145 - 6
6 572 - 5	14 693 - 4
7 453 - 9	15 214 - 7
8 290 - 7	16 527 - 9

Find.

17 9 more than 342	351
18 4 more than 496	500
19 8 less than 562	554
20 6 less than 711	705
21 5 more than 198	203
22 8 more than 382	390
23 9 less than 400	309
24 4 less than 872	868
25 7 more than 359	366
26 6 more than 894	900
27 5 less than 544	539
28 7 less than 173	166


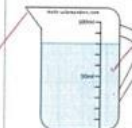
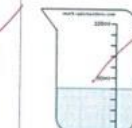
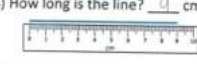
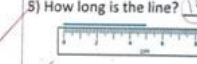
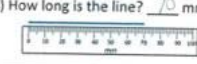
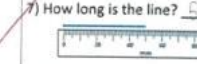


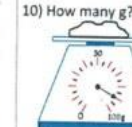
Year 2 age related expectations are evidenced through a series of specific tasks to ensure the knowledge has stuck. The example below shows paying for the same amount using different coins and reading scales that go up in different intervals.

Examples of @ARF work produced in year 2.

H 61 p

20p 20p 1p
 20p 10p 10p
 1p
 30 10p
 40 1p

I

1) How many fl oz? <u>7</u> 	2) How many ml? <u>80</u> 	3) How many ml? <u>40</u> 
4) How long is the line? <u>9</u> cm 	5) How long is the line? <u>15</u> cm 	
6) How long is the line? <u>70</u> mm 	7) How long is the line? <u>60</u> mm 	
8) How many g? <u>52</u> 	9) How many oz? <u>66</u> 	10) How many g? <u>58</u> 

Class 4

Development of written method in class 4 to meet year 4/5 objectives.

214721
 XXI:IV:XXI
 VAT: multiply by 10, 100 and 1000.
 You can multiply by 10, 100 and 1000.

A. 1. $58.0 \times 10 = 580$ ✓
 2. $631.0 \times 10 = 6310$ ✓
 3. $72.0 \times 10 = 720.0$ ✓
 4. $896 \times 10 = 8960$ ✓
 5. $47.0 \times 10 = 470$ ✓
 6. $145 \times 10 = 1450$ ✓
 7. $7.0 \times 100 = 700.0$ ✓
 8. $3 \times 100 = 300$ ✓
 9. $26 \times 100 = 2600$ ✓
 10. $48 \times 100 = 4800$ ✓
 11. $93 \times 100 = 9300$ ✓
 12. $100 \times 100 = 10000$ ✓
 B. 1. $473 \times 10 = 4730$ ✓
 2. $7.80 \times 100 = 780$ ✓
 3. $15.6 \times 100 = 1560$ ✓
 4. $55 \times 100 = 5500$ ✓
 5. $64000 \times 10 = 640000$ ✓
 6. $1810 \times 10 = 18100$ ✓
 C. 1. $260000 \div 100 = 2600$ ✓
 2. $760000 \div 100 = 7600$ ✓
 3. 22421
 4. 22421
 5. 22421
 6. 22421
 7. 22421
 8. 22421
 9. 22421
 10. 22421
 11. 22421
 12. 22421
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 21. 22421
 22. 22421
 23. 22421
 24. 22421
 25. 22421
 26. 22421
 27. 22421
 28. 22421
 29. 22421
 30. 22421

Calculating percentages- meeting a year 6 objective.

7. Some children take part in an Easter egg hunt. Complete the table to show how long it took them, converting between minutes and hours.

Name	Minutes	Hours and minutes
Samir	150	2 hours 30 mins ✓
Praneet	135	2 hours 15 mins ✓
Madison	175 ×	3 hours 5 minutes ✓
Daria	260 ×	4 hours 45 minutes ✓
Leo	222	3 hours 42 mins ✓

Working towards objective

10.04.18

WALT: find percentages of amounts: 2

1.) Starting number: 160

- Find: 1% = 1.6 ✓
- 10% = 16 ✓
- 20% = 32 ✓
- 23% = 36.8 ✓

2.) Starting number: 180

- Find: 1% = 1.8 ✓
- 10% = 18 ✓
- 36% = 64.8 ✓
- 43% = 77.4 ✓ *silly, that's 100%*

3.) Starting number: 220

- Find: 11% = 24.2
- 25% = 55
- 76% = 167.2

10.04.18

WALT: find percentages of amounts: 1

1.) Starting number: 200

- Find: 10% = 20 ✓
- 20% = 40 ✓
- 40% = 80 ✓
- 80% = 160 ✓

2.) Starting number: 200

- Find: 20% = 40 ✓
- 25% = 50 ✓
- 50% = 100 ✓
- 90% = 180 ✓

3.) Starting number: 400

- Find: 10% = 40 ✓
- 25% = 100 ✓
- 30% = 120 ✓
- 70% = 280 ✓

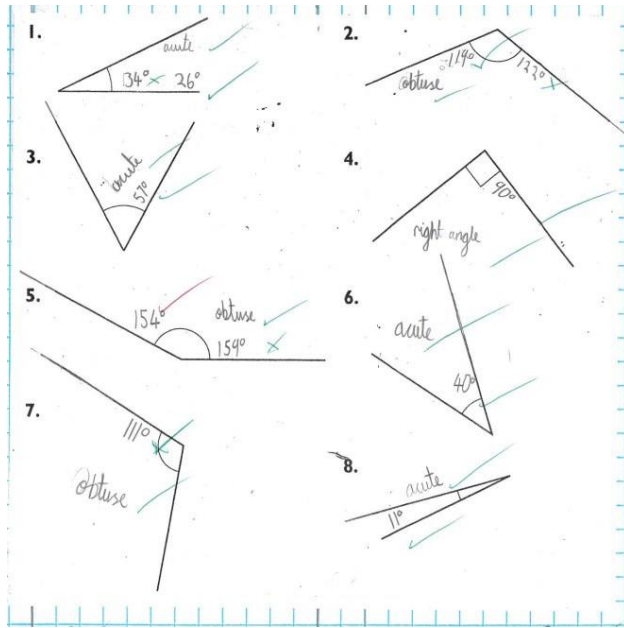
4.) Starting number: 500

- Find: 10% = 50 ✓
- 30% = 150 ✓
- 60% = 300 ✓
- 90% = 450 ✓

5.) Starting number: 800

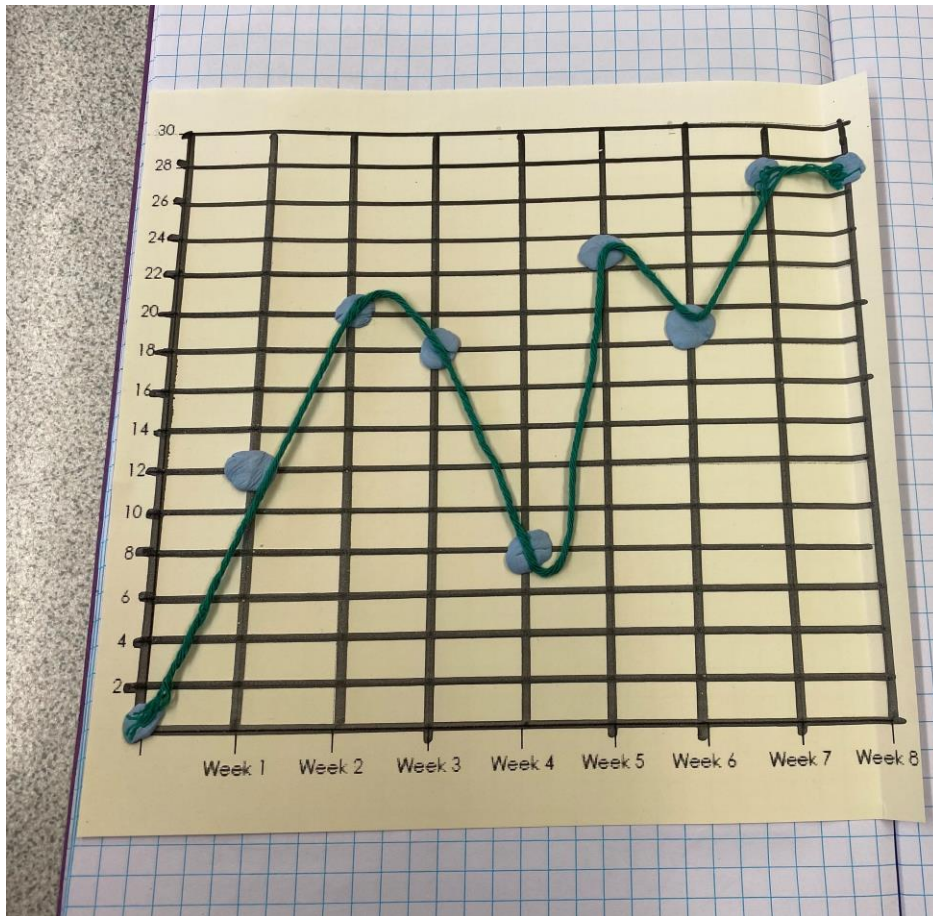
- Find: 10% = 80 ✓
- 20% = 160 ✓
- 25% = 200 ✓
- 75% = 600 ✓

Super work!



Reading scales and converting between different units.

Child with EHCP graphing and ordering numbers to 3 decimal places with specialist equipment.



Class 5

The book below evidences year 6 children working at age related expectations, using complex written procedures to solve word problems.

$$\begin{array}{r} 3670524 = \\ 672000 \\ \hline \end{array}$$

Year 6 working @ ARE examples

$$\begin{array}{r} 80862314 = \\ 81000000 \\ \hline \end{array}$$

Easter Maths

4. Mini-chocolate Easter bunnies are sold in packets of 12, 15 and 20. 732 packets of 12 are sold, 1146 packets of 15 are sold and 431 packets of 20 are sold.

How many mini-chocolate bunnies were sold altogether?

$$\begin{array}{r} 732 \\ \times 12 \\ \hline 1464 \\ 732 \\ \hline 21960 \end{array}$$

$$\begin{array}{r} 1146 \\ \times 15 \\ \hline 5730 \\ 1146 \\ \hline 68760 \end{array}$$

$$\begin{array}{r} 431 \\ \times 26 \\ \hline 2586 \\ 862 \\ \hline 11418 \end{array}$$

$$\begin{array}{r} 21960 \\ 18760 \\ + 34480 \\ \hline 72520 \end{array}$$

(1)

$$\begin{array}{r} 78862314 \\ + 20000000 \\ \hline 98862314 \end{array}$$

Easter Maths

5. Daniel is making Easter biscuits. Here is his recipe.

- 80g flour
- 40g butter
- 15g lemon zest
- 25ml water



He has 120g of butter. How much of the other ingredients will he need for his recipe?

(30g)

- flour - 160g x
- lemon zest - 95g x
- water - 105ml x

Easter Maths

6. The Easter bunny has a team of 32 helpers. Each helper makes 13 Easter eggs every day and works 6 days a week. How many eggs do the helpers make each week?



$$\begin{array}{r} 32 \\ \times 16 \\ \hline 192 \\ 32 \\ \hline 2240 \end{array}$$

$$\begin{array}{r} 2240 \\ \times 6 \\ \hline 13440 \end{array}$$

year 5

- identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers
- multiply numbers up to 4 digits by a one-digit number using a formal written method
- multiply and divide numbers mentally drawing upon known facts
- divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context
- multiply and divide whole numbers and those involving decimals by 10, 100 and 1000

- solve problems involving multiplication and division including using their knowledge of factors and multiples
- solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign
- use all four operations to solve problems involving measure (for example, length, mass, volume, money) using decimal notation including scaling

year 6

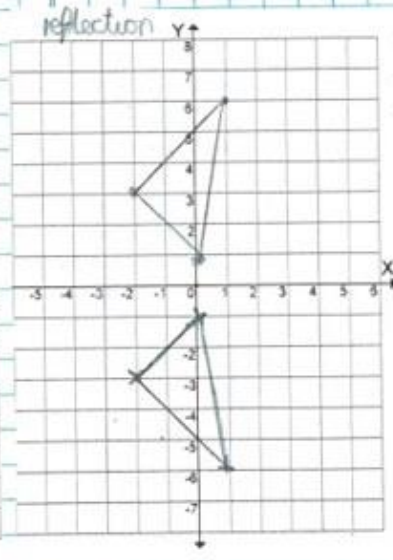
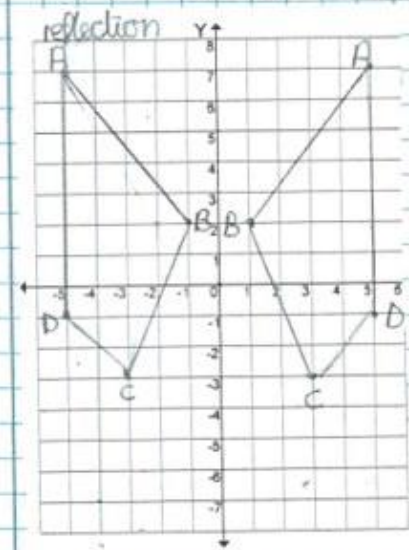
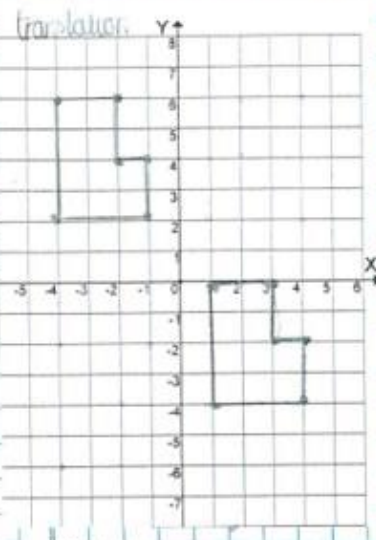
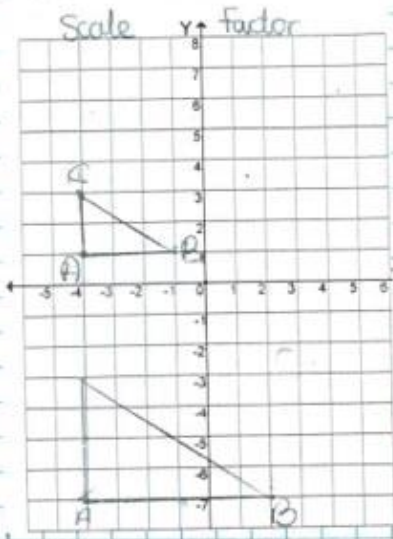
- multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication
- divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context
- divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context
- 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 four operations
- 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
- multiply one-digit numbers with up to two decimal places by whole numbers
- use written division methods in cases where the answer has up to two decimal places

- solve problems involving the calculation of percentages (for example, of measures, and such as 15% of 360) and the use of percentages for comparison
- 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
- 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 up to three decimal places
- interpret and construct pie charts and line graphs and use these to solve problems
- calculate and interpret the mean as an average

9.10.17
 WAPT: Multiply 10×10 THHTU

1	$\begin{array}{r} 2493 \\ \times 3 \\ \hline 7479 \end{array}$	Year 5	5	$\begin{array}{r} 4728 \\ \times 6 \\ \hline 28368 \end{array}$
2	$\begin{array}{r} 8241 \\ \times 3 \\ \hline 24723 \end{array}$	(I)	6	$\begin{array}{r} 7236 \\ \times 6 \\ \hline 43416 \end{array}$
3	$\begin{array}{r} 2854 \\ \times 4 \\ \hline 11416 \end{array}$		7	$\begin{array}{r} 2143 \\ \times 7 \\ \hline 15001 \end{array}$
4	$\begin{array}{r} 6178 \\ \times 4 \\ \hline 24712 \end{array}$		8	$\begin{array}{r} 5942 \\ \times 7 \\ \hline 41594 \end{array}$
			9	$\begin{array}{r} 1487 \\ \times 8 \\ \hline \end{array}$

2.5.18



You can use all 4 quadrants.

Knowledge of angles in a circle and percentage work to produce pie charts.

Handwritten mathematical work on grid paper, including calculations, diagrams, and multiplication problems. The work is organized into sections for Year 5 Unit 8 and Year 6 Unit 8.

Year 5 Unit 8

- Multiply and divide whole numbers and whole numbers by 10, 100 and 1000 mentally and understand how the position of the digits in the number is affected.
- Solve problems involving multiplication and division, including problems involving the knowledge of factors and multiples, square and cube numbers.
- Mental arithmetic involving addition, subtraction, multiplication and division and a combination of these, including understanding the ordering of the operations.
- Use of four operations to solve problems involving money (for example, length, area, volume), metric units, mass and time, including problems involving simple conversion.

Year 6 Unit 8

- Solve problems involving the calculation of percentages, for example, of interest, and work with 10%, 100% and the use of percentages for comparison.
- Solve problems involving the relative size of quantities, where mental calculation is encouraged by using integer multiplication and division facts.
- Solve problems involving simple addition and subtraction using knowledge of factors and multiples.
- Use of four operations to solve problems involving money (for example, length, area, volume), metric units, mass and time, including problems involving simple conversion.
- Use of four operations to solve problems involving money (for example, length, area, volume), metric units, mass and time, including problems involving simple conversion.

Handwritten notes include: "You can simplify ratios (yr 6)", "74/82/11/4/1 we take a ratio", "Great effort!", "Scale drawing".

Handwritten multiplication problems:

Formal Multiplication 1: 2012×24

```

  2012
x   24
-----
  8048
 4024
-----
 48288
  
```

Formal Multiplication 2: 3079×32

```

   3079
x    32
-----
  6158
 9236
-----
 98528
  
```

Formal Multiplication 3: 4862×57

```

   4862
x    57
-----
 33934
24314
-----
277134
  
```

Subject Impact

Impact

The Foundation Stage

"Children make rapid progress in Reception and, by the time they begin year 1, standards are above average in all areas, including literacy and numeracy." Ofsted 2009

• Data shows accelerated progress in terms of development matters age related expectations.

• In 2018 76.2% reached a GLD.

• In 2019 85% reached a GLD.

- In 2020 61% reached a GLD.

- In 2021 63%

- In 2022 67%

Key Stage 1

Key Stage 1 results have consistently been above national results although with each child constituting 5% of the year group, these have the potential to fluctuate.

2022 Results-

Reading

	BWT	WT	WA	GD
Number	2	0	14	5
%	10	0	67	24

Writing

	BWT	WT	WA	GD
Number	2	2	14	3
%	10	10	67	14

Maths

	BWT	WT	WA	GD
Number	2	3	11	5
%	10	14	52	24

2019 Results- National figures in red

Reading

	BWT	WT	WA	GD
Number	0	2	13	6
%	0	10	62 50	29 25

Writing

	BWT	WT	WA	GD
Number	0	4	13	4
%	0	19	62 54	19 15

Maths

	BWT	WT	WA	GD
Number	0	3	14	4
%	0	14	67 54	19 22

2018 Results

Reading

	BWT	WT	WA	GD
Number	1	2	14	4
%	5	10	67	19

Writing

	BWT	WT	WA	GD
Number	1	4	14	2
%	5	19	67	10

Maths

	BWT	WT	WA	GD
Number	0	3	14	4
%	0	14	67	19

MTC

Year 4 Multiplication Tables Check

8/20 achieved full marks 25/25= 40%. 30% nationally get full marks

16/20 achieved 20-25 marks= 80%

18/20 achieved 17-25 marks= 90%

1 child scored 16/20 and 1 was absent but would have achieved a low score

Key Stage 2

Key Stage 2 results have consistently been well above national results, at times significantly so, despite small cohorts producing wide confidence intervals.

Key Stage 2 SATs

An excellent set of results considering the year group in question has a child with no vision and a child who was absent for the entire week of testing.

	School AS	National AS	School GD	School Scaled Scores*	National Scaled Scores
Reading	88% (15/17)	74%	41%	107.6	105
Writing	82% (14/17)	69%	29%	n/a	n/a
Maths	82% (14/17)	71%	24%	105.7	104
SPAG	88% (15/17)	72%	53%	109	105
RWM	76% (13/17)	59%	18%		

*divided by 16 as one child absent

KS2 results over time

2019

	National pass rate (2018)	Target School pass rate	Actual	Difference	Average Standardised Score
SPAG	78		85	+7	105
Reading	75		85	+10	106
Maths	76		80	+4	105
Writing (TA)	78		85	+7	
Expected level in all 3 areas (reading, writing and maths)	64	75-80	70	+6	

KS2 results over time

2018

	National pass rate	Target School pass rate	Actual	Difference	Average Standardised Score
SPAG	78	95	95	+17	110
Reading	75	95	95	+20	112
Maths	76	90	89	+13	109
Writing (TA)	78	85	84	+6	
Expected level in all 3 areas (reading, writing and maths)	64	84	84	+20	

2017

	National pass rate	Target School pass rate	Actual	Difference	Average Standardised Score
SPAG	77	81	100	+23	109
Reading	71	81	90	+20	108
Maths	75	76	85	+10	105
Writing (TA)	76	86 (19GD)	86	+10	
Expected level in all 3 areas	61	67	76	+15	

Impact- Subject Discussions

Subject Monitoring Interview

Interview with group of pupils from class 5.

What is Maths?

Use of numbers using calculations and operations.

Use in everyday life.

Also in physics and explains how it works.

Why is this subject important?

It can be used in everyday life.

You need it in virtually everything- even writing a book.

What have you been learning about this year?

Mental maths.

BODMAS

Fractions and improper fractions and how to multiply and divide them.

Word problems.

Children very keen on maths.

What can you remember about what you learned about in the past?

Times tables and procedures in class 3.

Difficult as things the same but the numbers get bigger.

Area and perimeter and Roman numerals in class 3.

What do you know about decimals?

Half equals 0.5

Connected to fractions and per centages and can be changed from one to another.

Say as a list nought point two five not nought point twenty- five.

Everything 0. something is not a whole number yet.

One fifth is 0.2

Why is a third tricky?

Because it is endless- it is recurring

You would do it for your whole life and not get to the end

What is pi?

The circumference divided by the diameter