

Mathematics

National Curriculum Aims and Objectives:

The national curriculum for maths aims to ensure that all pupils:

- become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils have conceptual understanding and are able to recall and apply their knowledge rapidly and accurately to problems
- **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can **solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

Vision for Subject at Queenborough School:

A high-quality mathematics education will help pupils gain 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.

Year 2

Terms 1 & 2

Oral and Mental calculation

- Count to and beyond 100 starting from any number
- Read and write numbers to at least 50 in numerals
- Read and write numbers to 30 in words
- Order a set of random numbers to at least 50
- Find 1 more/1 less of any number to at least 50
- Find 10 more / 10 less of any number to at least within 50
- Count on and back in 1s from any one or two-digit number.
- Count on and back in multiples of 2, 5 and 10.
- Count in multiples of 2, 5 and 10 from 0, forwards and backwards
- Recall addition and subtraction facts for each number up to at least 10.
- Recall doubles of simple 2-digit numbers i.e. numbers in which the ones total less than 10.
- Recall halves of simple even numbers i.e. numbers in which the tens are even.
- Add a single digit number to any 2-digit number.
- Take away a single digit number from 2-digit number.
- Tell the time using o'clock, half past, quarter past and quarter to.
- Recognise and count amounts of money.
- Revise names and properties of 2D and 3D shapes

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| <p>Week 1</p> | <p>Number and place value to solve problems</p> <ul style="list-style-type: none"> • Read and write numbers to at least 100 in numerals and in words • Read and write numbers to at least 50 in numerals and in words. • Recognise the place value of each digit in a two-digit number (tens, ones) up to at least 50 • Identify, represent and estimate numbers using different representations, including the number line <i>and a 100 square</i> • Partition two -digit numbers up to at least 50 into tens and ones using manipulatives • <i>Partition numbers in different ways (for example, $23 = 20 + 3$ and $23 = 10 + 13$) using manipulatives.</i> • Compare numbers for 0-100 -say which is more /less using $<$, $>$ and $=$ signs. • <i>Find 1 or 10 more or less than a given number using manipulatives</i> • Solve problems involving place value and number facts |
| <p>Week 2</p> | <p>Addition to solve problems</p> <ul style="list-style-type: none"> • Revise addition and subtraction pairs for 10 • Revise addition and subtraction pairs for all numbers to 10 • <i>Ensure children think -can I do it in my head, with some jottings or by using an expanded written method</i> • Estimate answers to calculations • Add a two-digit number and ones numbers using concrete objects and pictorial representations (<i>including crossing the tens boundary</i>) • Subtract ones from a two-digit number numbers using concrete objects and pictorial representations (<i>including crossing the tens boundary</i>) • Add three one-digit numbers mentally or by using object or pictures (<i>including crossing the tens boundary</i>) • Use inverse to check the answers to calculations • Solve problems involving addition |
| <p>Week 3</p> | <p>Subtraction to solve problems</p> <ul style="list-style-type: none"> • Revise addition and subtraction pairs for 10 • Revise addition and subtraction pairs for all numbers to 10 • <i>Ensure range of questions that require either take away or difference</i> • Find the difference between 2 numbers by counting up • <i>Ensure children think -can I do it in my head, with some jottings or by using an expanded written method</i> • Estimate answers to calculations • Subtract ones from a two-digit number numbers using concrete objects and pictorial representations (<i>including crossing the tens boundary</i>) • Use inverse to check the answers to calculations • Solve problems involving subtraction |

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| <p>Week 4</p> | <p><i>Measures -Money to solve problems</i></p> <ul style="list-style-type: none"> • Recognise coinage 1p, 2p, 5p, 20p and 50p • Recognise and use symbol p for pence • find combinations of coins to make a value within 20p • find different combinations of coins to make 20p • <i>Ensure children think -can I do it in my head, with some jottings or by using an expanded written method</i> • Estimate answers to calculations • Add three one-digit numbers mentally or by using object or pictures <i>(including crossing the tens boundary)</i> • Add a two-digit number and ones numbers of pence using coinage and/or pictorial representations <i>(including crossing the tens boundary)</i> • Add three one-digit amounts of money mentally or by using coinage or pictures <i>(including crossing the tens boundary)</i> • Subtract ones from a two-digit number of pence using coinage and/or pictorial representations <i>(including crossing the tens boundary)</i> • Use inverse to check the answer to calculations • Solve simple problems in a practical context involving addition and subtraction of money |
| <p>Week 5</p> | <p><i>Measures-length and height to solve problems</i></p> <ul style="list-style-type: none"> • <i>Work practically with length</i> • <i>Understand how to use and read a ruler or tape measure to measure length/height accurately</i> • Estimate and measure using standard units i.e. cm and m using rulers <i>or tapes</i> • Compare and order lengths or heights and record the results using >, < and = • Solve problems involving length/height |
| <p>Week 6</p> | <p><i>Fractions to solve problems</i></p> <ul style="list-style-type: none"> • Count in halves to 10 • Recognise and practically find and name $\frac{1}{2}$ of a length, shape, number or quantity • Recognise and practically find and name $\frac{1}{4}$ of a length, shape, number or quantity • Recognise and practically find and name $\frac{3}{4}$ of a length, shape, number or quantity • <i>Begin to understand the terms numerator and denominator.</i> • <i>Understand that the larger the denominator is, the more pieces it is split into and therefore the smaller each part will be.</i> • Solve problems involving simple fractions |
| <p>Week 7</p> | <p><i>Multiplication and division to solve problems</i></p> <ul style="list-style-type: none"> • <i>Make arrays or patterns to show "groups of "such as 2 lots of 3 and count in groups (multiples) not ones (year1)</i> • <i>Understand division as sharing and grouping.</i> • <i>Group and share small quantities (year 1)</i> • Recall the multiplication and division facts for 2 and 10 x tables • <i>Understand multiplication as repeated addition using manipulatives .</i> • Calculate multiplication number sentences for 2x and 10x <i>(using repeated addition)using manipulatives</i> • Record multiplication number sentences for 2x and 10x tables using x and = |

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| | <ul style="list-style-type: none"> Record division number sentences for 2x and 10x tables using \div and $=$ Use inverse to check the answer to calculations Solve one-step problems involving multiplication and division by calculating the answer using concrete objects, pictorial representations and arrays |
| Week 8 | <p>Shape to solve problems</p> <ul style="list-style-type: none"> Revise basic 3D shapes Introduce cuboids, prisms and cones Compare and sort shapes and everyday objects i.e. boxes Order 3D shapes into patterns and/or sequences Identify and describe the properties of 3D shapes -edges, vertices and faces Identify 2-D shapes on the surface of 3-D shapes, (for example, a circle on a cylinder and a triangle on a pyramid) Solve problems involving 3D shapes |
| Week 9 | <p>Statistics to solve problems</p> <ul style="list-style-type: none"> Construct simple pictograms, tally charts, diagrams and tables 1:1 Answer simple questions involving totalling and comparing Solve problems involving statistics |
| Week 10 | <p>Time to solve problems</p> <ul style="list-style-type: none"> Compare and sequence times Tell the time -o'clock, half past, quarter to and quarter past Draw hands on a clock face to show o'clock, half past, quarter to and quarter past Begin to know the number of minutes in an hour and the number of hours in a day. Solve problems involving time |
| Week 11 | <p>Assess and review</p> |

Oral and Mental calculation

- Count to and beyond 100 starting from any number
- Read and write numbers to 100 in numerals
- Read and write numbers to 50 in words
- Order a set of random numbers to 100.
- Recognise odd and even numbers.
- Find 1 more/1 less of any number to 100
- Find 10 more / 10 less of any number within 100
- Count on and back in 1s from any one or two-digit number
- Recall addition and subtraction facts for each number up to at least 10
- Recall doubles of numbers to 20
- Recall halves of even numbers to 50
- Add a single digit number to any 2-digit number.
- Subtract a single digit number from 2-digit number
- Find the difference between two number within 50
- Find the answers to missing number problems i.e. $2+?=9$
- Recall multiplication facts for the 2x, 5x and 10x tables.
- Count in multiples of 2, 5 and 10 from 0, forwards and backwards
- Count in 10s from any number forwards and backwards
- Names and properties of 2D shapes
- Recall multiplication division facts for 2 and 10 tables
- Find doubles +1 and doubles +2
- Use "see nine think ten" and adjust for addition and subtraction
- Revise names and properties of 2D and 3D shapes

Week 1**Number and place value**

- Identify, represent and estimate numbers using different representations, including the number line *and 100 square*.
- Partition two -digit numbers up to at least 50 into tens and ones *using manipulatives*
- *Partition numbers in different ways (for example, $23 = 20 + 3$ and $23 = 10 + 13$) using manipulatives.*
- Order random numbers 0-100 *and explain reasoning*
- Compare numbers for 0-100 -say which is more /less using $<$ or $>$ *and explain reasoning*
- *Partition numbers in different ways (for example, $23 = 20 + 3$ and $23 = 10 + 13$) using manipulatives.*
- Solve problems involving place value and number facts

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| 2 | <p>Addition to solve problems</p> <ul style="list-style-type: none"> • Recall addition and subtraction facts for numbers 11-20 , including missing number problems • <i>Ensure children think -can I do it in my head, with some jottings or by using an expanded written method</i> • <i>Estimate answers to calculations</i> • Add a two-digit number and a ones numbers or a two-digit number and tens using concrete objects and pictorial representations <i>(including crossing the tens boundary)</i> • Add three <i>or more</i> one-digit numbers mentally or by using object or pictures<i>(including crossing the tens boundary)</i> • Use inverse to check the answers to calculations • Solve problems with addition |
| 3 | <p>Subtraction to solve problems</p> <ul style="list-style-type: none"> • Recall addition and subtraction facts for numbers 11-20 , including missing number problems • <i>Ensure range of questions that require either take away or difference for subtraction</i> • <i>Ensure children think -can I do it in my head, with some jottings or by using an expanded written method</i> • <i>Estimate answers to calculations</i> • Subtract ones from a two-digit number numbers or tens from a two-digit number using concrete objects and pictorial representations <i>(including crossing the tens boundary)</i> • Use inverse to check answers to calculations • Solve problems with subtraction |
| 4 | <p>Measures -Money to solve problems</p> <ul style="list-style-type: none"> • Recognise and use symbols £ for pounds and p for pence. • Recognise coinage 1p, 2p, 5p, 20p , 50p, £1 • find combinations of coins to make a value within 50p • find different combinations of silver coins to make amounts e.g. 50p • <i>Ensure range of questions that require either take away or difference for subtraction</i> • <i>Ensure children think -can I do it in my head, with some jottings or by using an expanded written method</i> • <i>Estimate answers to calculations</i> • Add a two-digit number and a ones numbers of pence or a two-digit number and a tens number of pence using coins and/or pictorial representations <i>(including crossing the tens boundary)</i> • Subtract ones from a two-digit number of pence or tens from a two-digit number of pence using coins and /or pictorial representations <i>(including crossing the tens boundary)</i> • Add three <i>or more</i> one-digit numbers of pence mentally or by using object or pictures<i>(including crossing the tens boundary)</i> • <i>Ensure range of questions that require either take away or difference for subtraction</i> • Subtract ones from a two-digit number of pence or tens from a two-digit number of pence using coins and /or pictorial representations to give change <i>(including crossing the tens boundary)</i> • Use inverse to check the answers to calculations • Solve simple problems in a practical context involving addition and subtraction of money. |

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| 5 | <p><i>Measures-mass to solve problems</i></p> <ul style="list-style-type: none"> • <i>Work practically with mass /weight</i> • <i>Understand how to use weighing scales to measure/weight accurately</i> • <i>Understand how to read a simple scale on weighing scales</i> • <i>Estimate and measure using standard units i.e 100 g and 1 kg</i> • <i>Compare and order mass and record the results using >, < and =.</i> • <i>Solve problems involving weight/mass</i> |
| 6 | <p><i>Fractions to solve problems</i></p> <ul style="list-style-type: none"> • <i>Count forwards and backwards in halves and /or quarters to 10</i> • <i>Recognise and practically find and name $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{3}{4}$ of a length, shape, number or quantity</i> • <i>Recognise the equivalence of $\frac{1}{2}$ and $\frac{2}{4}$</i> • <i>Begin to understand and use the terms numerator and denominator.</i> • <i>Understand that the larger the denominator is, the more pieces it is split into and therefore the smaller each part will be.</i> • <i>Solve problems involving simple fractions</i> |
| 7 | <p><i>Multiplication and division to solve problems</i></p> <ul style="list-style-type: none"> • <i>Recall multiplication and division facts for 2 x, 5x and 10 x tables</i> • <i>Make arrays or patterns to show "groups of "such as 2 lots of 3 and count in groups (multiples) not ones (year1)</i> • <i>Understand division as sharing and grouping.</i> • <i>Group and share small quantities (year 1)</i> • <i>Understand multiplication as repeated addition using manipulatives .</i> • <i>Calculate multiplication number sentences for 2x ,5x and 10x (using repeated addition)using manipulatives</i> • <i>Record multiplication number sentences for 2x, 5x and 10x tables using x and =</i> • <i>Calculate division number sentences for 2x ,5x and 10x (using repeated addition)using manipulatives</i> • <i>Record division number sentences for 2x and 10x tables using ÷ and =</i> • <i>Use inverse to check the answers to calculations</i> • <i>Solve problems involving multiplication, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.</i> • <i>Solve problems involving division, using materials, arrays, repeated subtraction and sharing, mental methods, and multiplication and division facts, including problems in contexts.</i> |
| 8 | <p><i>Shape and position and directions to solve problems</i></p> <ul style="list-style-type: none"> • <i>Identify and describe the properties of 2-D shapes, including the number of sides and angles</i> • <i>Identify and describe the properties of 2-D shapes, including reflectional symmetry</i> • <i>Arrange 2D shapes in patterns and/or sequences.</i> • <i>Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and as turning.</i> • <i>Solve problems involving shape</i> • <i>Solve problems involving position or direction</i> |

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| 9 | <p><i>Statistics to solve problems</i></p> <ul style="list-style-type: none"> • Construct simple pictograms, tally charts , diagrams and tables 1:1 • <i>Read and interpret scales including hose marked in one but numbered in twos or fives</i> • Ask and answer simple questions involving totalling and comparing • Solve problems involving statistics |
| 10 | <p><i>Time to solve problems</i></p> <ul style="list-style-type: none"> • Compare and sequence times • Tell the time -o'clock , half past , quarter to and quarter past • Begin to tell the time to five minutes -link to o'clock , half past , quarter to and quarter past • Draw hands on a clock face to show given times • Begin to know the number of minutes in an hour and the number of hours in a day. • Solve simple problems involving time |
| 11 | <p><i>Assess and review</i></p> |

Year 2

Terms 5 & 6

Oral and Mental calculation

- Count to and beyond 100 starting from any number
- Read and write numbers to 100 in numerals
- Read and write numbers to 100 in words
- Order a set of random numbers to 100.
- Find 1 more/1 less of any number to 100
- Find 10 more / 10 less of any number within 100
- Count in tens from any number, forwards and backwards
- Count on and back in 1s from any number to 100
- Count on and back in steps of 2, 3 and 5 from 0
- Count on and back in 10s from any number.
- Recall multiplication facts for the 2x, 5x and 10x tables
- Recognise odd and even numbers.
- Recall addition and subtraction facts for each number up to 20 including missing number questions
- Begin to recall related facts up to 100 i.e. $2+8=10$ so $20+80=100$
- Recall doubles of numbers to at least 50
- Recall halves of even numbers to 100
- Round number to 100 to the nearest 10
- Add a single digit number to any 2-digit number.
- Take away a single digit number from 2-digit number
- Find the difference between two numbers within 50
- Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot
- Use the inverse relationship between addition and subtraction to check calculations and solve missing number problems
- Use the inverse relationship between addition and subtraction to solve missing number problems
- Recall multiplication division facts for 2x, 5x and 10 tables
- Revise names and properties of 2D and 3D shapes

Week 1

Number and place value to solve problems

- Partition two -digit numbers up to 99 into tens and ones Recognise the place value of each digit in a two-digit number (tens, ones).
- Identify, represent and estimate numbers using different representations, including the number line.
- Compare and order numbers from 0 up to 100; use $<$, $>$ and $=$ signs *and explain reasoning.*
- *Partition numbers in different ways (for example, $45 = 20 + 25$ and $45 = 30 + 13$).*
- Use place value and number facts to solve problems.

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| <p>Week 2</p> | <p>Addition to solve problems</p> <ul style="list-style-type: none"> Recall and use addition and subtraction facts to 20 with increasing fluently <i>Ensure range of questions that require either take away or difference for subtraction</i> Begin to find and use related facts addition and subtraction facts up to 100 <i>Ensure children think -can I do it in my head, with some jottings or by using an expanded written method</i> <i>Estimate answers to calculations</i> Add numbers including: a two-digit number and ones; a two-digit number and tens; two two-digit numbers; using concrete objects and pictorial representations (<i>including crossing the tens boundary</i>) Subtract numbers including: a two-digit number and ones; a two-digit number and tens; two two-digit numbers; add three <i>or more</i> one-digit numbers. using concrete objects and pictorial representations (<i>including crossing the tens boundary</i>) use inverse to check the answers to calculations Solve problems with addition |
| <p>Week 3</p> | <p>Subtraction to solve problems</p> <ul style="list-style-type: none"> Recall and use addition and subtraction facts to 20 with increasing fluently <i>Ensure range of questions that require either take away or difference for subtraction</i> Begin to find and use related facts addition and subtraction facts up to 100 <i>Ensure children think -can I do it in my head, with some jottings or by using an expanded written method</i> <i>Estimate answers to calculations</i> Subtract numbers including: a two-digit number and ones; a two-digit number and tens; two two-digit numbers Use inverse to check the answers to calculations Solve problems with subtraction |
| <p>Week 4</p> | <p>Measures -Money to solve problems</p> <ul style="list-style-type: none"> Recognise and use symbols £ for pounds and p for pence. Recognise coinage 1p, 2p, 5p, 20p , 50p, £1 and £2 Find combinations of coins to make a value within £1 Find different combinations of silver coins to amounts e.g. make £1 <i>Ensure children think -can I do it in my head, with some jottings or by using an expanded written method</i> <i>Estimate answers to calculations</i> Add pence including: a two-digit number and ones; a two-digit number and tens; two two-digit numbers; using coins and/or pictorial representations (<i>including crossing the tens boundary</i>) <i>Ensure range of questions that require either take away or difference for subtraction</i> Subtract pence including: a two-digit number and ones; a two-digit number and tens; two two-digit numbers; add three <i>or more</i> one-digit amounts of pence using coins and pictorial representations (<i>including crossing the tens boundary</i>) <i>Subtract pence to give change</i> Use inverse to check the answers to calculations Solve simple problems in a practical context involving addition and subtraction of money |

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| <p>Week 5</p> | <p>Multiplication and division to solve problems</p> <ul style="list-style-type: none"> • <i>Make arrays or patterns to show "groups of "such as 2 lots of 3 and count in groups (multiples) not ones (year1)</i> • Recall and use multiplication and division facts for the 2x, 5x and 10 x tables, • <i>Understand multiplication as repeated addition using manipulatives .</i> • <i>Understand division as both sharing and grouping using manipulatives .</i> • Calculate multiplication number sentences for 2x ,5x and 10x <i>(using repeated addition)using manipulatives</i> • Record multiplication number sentences for 2x, 5x and 10x tables using x and • Calculate division number sentences for 2x ,5x and 10x <i>(using sharing or grouping)using manipulatives</i> • Record division number sentences for 2x and 10x tables using ÷ and = • Use inverse to check the answers to calculations • Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. |
| <p>Week 6</p> | <p>Fractions to solve problems</p> <ul style="list-style-type: none"> • Count forwards and backwards in in $\frac{1}{2}$, and $\frac{1}{4}$ to 10 • Count forwards in 1/3 • Continue to recognise, practically find and name $\frac{1}{2}$ or $\frac{1}{4}$ of length, shape, number or quantity • Recognise, practically find and name 1/3 of length, shape, number or quantity • Write fractions in number sentences e.g. , $\frac{1}{2}$ of 6 = 3 • <i>Understand and use the terms numerator and denominator.</i> • Recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$. • Solve problems with fractions |
| <p>Week 7</p> | <p>STATUTORY ASSESSMENT WEEK</p> |
| <p>Week 8</p> | <p>Statistics to solve problems</p> <ul style="list-style-type: none"> • Construct simple pictograms, tally charts block diagrams and simple tables • Read and interpret scale including 1:1 and /or 1:2:1:5 and 1:10 • Ask and answer question about totalling and comparing categorical data • Solve problems involving statistics. |

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| <p>Week 9</p> | <p>Shape and position and direction to solve problems</p> <ul style="list-style-type: none"> • Continue to name and describe the properties of 2D and 3D shapes • Continue to make patterns with shapes • Explore the reflectional symmetry of shapes • Use the correct language of position and/or direction to give and follow instructions • Identify a right angle(as a square corner) in the environment • Describe rotation in terms of 1,2 3 or 4 right angles leading to quarter , half, three quarter or complete turn • Identify clock wise turns and anti-clock wise turns • Use the correct vocabulary to describe rotation as a turn and give and follow instructions • Solve problems involving shape • Solve problems involving position or direction |
| <p>Week 10</p> | <p>Measures-capacity/volume and temperature to solve problems</p> <ul style="list-style-type: none"> • <i>Work practically with capacity /volume</i> • <i>Understand how to use measuring jugs and containers to measure capacity / volume accurately</i> • <i>Understand how to read simple scale on measuring jugs or containers</i> • Estimate and measure using standard units i.e. litre • Compare and order capacity/volume recording the results using < or > and = • Use appropriate standard units to estimate temperature e.g. 30° C hot , 5° C is cold and 16 °C is about right • <i>Understand how to use a thermometer to measure temperature</i> • <i>Understand how to read the scale on a thermometer</i> • Practically measure temperature to the nearest degree (°C) using thermometers. • Solve problems involving capacity/ volume • Solve problems involving temperature |
| <p>Week 11</p> | <p>Time to solve problems</p> <ul style="list-style-type: none"> • Tell the time to five minutes -link to o'clock , half past , quarter to and quarter past • Draw hands on a clock face to show given times • <i>Write times to match clock faces</i> • Know the number of minutes in an hour and the number of hours in a day • Solve problems involving time <i>including using a number line</i> |

Non-negotiable requirements for the provision of Subject:

- Each classroom will have a visible number line to 100
- Each classroom will have a maths resource stacker with equipment that the children will have access to in any maths lesson

Promoting Pupils' Spiritual, Moral, Social and Cultural Development:

Spiritual Development

- Encouraging pupils to reflect and learn from reflection
- Develop a climate or ethos within which all pupils can grow and flourish, respect others and be respected
- Monitoring, in simple, pragmatic ways, the success of what is provided
- Promote teaching styles which:
 - Value pupils' questions and give them space for their own thoughts, ideas and concerns
 - Enable pupils to make connections between aspects of their learning
 - Encourage pupils to relate their learning to a wider frame of reference - for example, asking 'why?', 'how?' and 'where?' as well as 'what?'

Moral Development

- Providing a clear moral code as a basis for behaviour which is promoted consistently through all aspects of the school
- Developing an open and safe learning environment in which pupils can express their views and practise moral decision-making

Social Development

- Encouraging pupils to work co-operatively

Cultural Development

- Recognising and nurturing particular gifts and talents

Year 2

Suggested Activities

| NUMBER | Children should have opportunities to |
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| Number and place value | <ul style="list-style-type: none"> • link the reciting of number names to counting by using visual images of numbers - number tracks, counting stick, fingers and 100 squares -and groups of objects, pictures and manipulatives • visualise a number track in their head for steps of 2,3 and 5 • find number patterns on number lines and 100 squares i.e. odd and even numbers • Use 100 bead string , 10p coins Number grid ITP and a 100 square to support counting on or back in 10s from any given number.show the pattern $6+10=16$, $16+10 =26$ etc Link to addition and subtraction. • use concrete objects, partially marked number lines ,place value cards ,manipulatives and money to <ul style="list-style-type: none"> - count in tens/hundreds to establish 10 tens make 1 hundred - represent and compare numbers • Link number lines to scales • Use $<$, $>$ or $=$ when ordering numbers • make sense of the size of 100 and use it to estimate the number of objects in a group • use manipulatives, place value cards or money to partition 2-digit numbers into tens and ones and later to re-partition $46=40+6$, $46=30+16$, $46=20+26$ etc • use manipulatives or money to represent a number that is 1 or 10 more than/less than a 2-digit number • use place-value cards to illustrate and explain place values, e.g. the digit 3 stands for 30 or 3 depending on where it appears in a number. • use place-value cards to compare numbers digit by digit from left to right, and use language such as 'greater than', 'greatest', 'smaller than', 'smallest' and 'the same as' to describe the comparison. |
| Addition and subtraction | <ul style="list-style-type: none"> • Recognise and used to language of addition and subtraction such as add, subtract, difference, plus, minus, count on , count back, less than , more than, fewer than , greater than , less than and difference • Use Numicon or tens frames to support learning of number bonds for 20. • Learn, rehearse and apply number facts-Use kinaesthetic, coat hangers and pegs, number trio cards ,visual, slidey boxes, oral, written and ICT activities. • Use manipulatives and known facts to say what need to be added to a two-digit number to reach the next multiple of 10 • Experience subtraction as take away and work out such number sentences by counting on or back. • Experience subtraction as difference and work out this difference by comparison -towers of cubes , bead strings , Difference ITP • Use objects, manipulatives, pictures, jottings and /or partially marked number lines to support calculations. • Use a bead string and known facts to support mental calculations i.e. $27+5 =27+3$ and then $+2$ or $32-5 =32 -2$ and then -3 • write addition and subtraction number sentences for number stories and explain the meaning of the equal sign as "balance" |

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| | <p>rather than "makes"</p> <ul style="list-style-type: none"> • know, understand and apply the addition and subtraction facts within 20 including writing a family of 4 basic facts within 20 given any one of the basic facts (e.g. $9 + 7 = 16$, $7 + 9 = 16$, $16 - 9 = 7$ and $16 - 7 = 9$ are a family of addition and subtraction facts) • Work through missing number problems and sue the inverse • Use number facts for 20 to derive facts for 100 i.e. $3+7=10$ so $30+70 =100$ • create word problems involving addition and subtraction for others to solve. • use strategies such as 'count on', 'count back', 'make ten' and 'subtract from 10' for addition and subtraction within 20 (before committing the number facts to memory) and thereafter, within 100. • compare two numbers within 20 to tell how much one number is greater (or smaller) than the other by subtraction. • achieve mastery of basic addition and subtraction facts within 20 through playing a wide range of games. • use the base-ten set to illustrate the standard algorithms for addition and subtraction of 2-digit numbers • understand and use language such as sum , difference and total |
| Multiplication and division | <ul style="list-style-type: none"> • link the reciting of tables and related division facts to visual images of numbers, number tracks, counting stick, fingers and 100 squares, groups of objects, pictures and manipulatives and physical actions • Learn multiplication and division facts by <ul style="list-style-type: none"> - using multiplication-fact cards and division-fact cards. - playing games • Link 10 x table to place value • Link 5 x table to the divisions into minutes in a clock face • Link" What is three fives?" to $5 \times 3=?$ And $5+5+5=$ and illustrate with concrete "groups of " 5 objects and the rows and columns of an array • make multiplication and division stories, write a multiplication or division equation for each story and explain the meaning of the equal sign. • use concrete objects and pictorial representations to make arrays and repeated addition or subtraction to illustrate the concepts of multiplication and division such as 'multiplying 2 by 5' and 'dividing 15 by 5'. • Relate multiplication to division • Use contexts that require division by sharing and grouping • Link division to arrays • Understand that some groups do not divided equally and this means you may have a remainder. • explore number patterns in the multiplication tables of 2, , 5 and 10 through activities such as colouring the hundred chart. • Fine the family of 4 facts within the multiplication tables (e.g. $2 \times 4 = 8$, $4 \times 2 = 8$, $8 \div 4 = 2$ and $8 \div 2 = 4$ are a family of multiplication and division facts). • create word problems (with pictorial representation if necessary) involving multiplication and division for other groups to solve. |
| Fractions | <ul style="list-style-type: none"> • use concrete objects, fraction images , strips of paper and pictorial representations to represent and interpret fractions($\frac{1}{2}$, $\frac{1}{4}$, $1/3$ and $\frac{3}{4}$) of lengths , shapes, and numbers. |

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| | <ul style="list-style-type: none"> • Read and write fractions they have made • Know that the denominator tells you how many equal parts the "whole" is divided into. • Practically explore the idea of equivalent fractions such as $\frac{1}{4} + \frac{1}{4}$ is $\frac{2}{4}$ and $\frac{2}{4}$ can also be written as $\frac{1}{2}$ because it is the same. • Link fraction and division -use shapes divided in $\frac{1}{2}$ or $\frac{1}{4}$ and then share out cubes or counters s equally onto each part |
| MEASUREMENT | |
| | <ul style="list-style-type: none"> • Discuss and compare measures using non-standard units enabling them to recognise the need for a standard unit. Be introduced to common standard measures • estimate length/mass/volume before measuring it and use the word 'about' (e.g. about 20 cm) to describe the estimation and measurement • relate number lines- horizontal , vertical and curved - to scales • Make their own scales, using uniform measure - i.e. table spoons to fill a bottle. • compare measures using $<$, $>$ or $=$ • describe comparisons as "twice as long" or "3 times as heavy" • Mass -use bucket scales and weighing scale that are easy to read. • Compare masses of objects using balance scales. • Use everyday examples to develop a sense of how heavy 1 kg/1 g is, e.g. using a packet of sugar/flour/ rice, a pin, a piece of paper. • Length - avoid rulers with mm • use everyday examples to develop a sense of how long 1 m/1 cm is, e.g. using a metre ruler, width of a fingernail. • Use their arm span to show 1 m and estimate length in metres. • measure the length of curves using a string • draw lines and measure given line to the nearest cm • Capacity • Use every day example sto develop a sense of - how much 1 litre of liquid is, e.g. using a bottle of mineral water/cooking oil, and 1-litre containers in different shapes • Sort objects into holds less than a litre , holds 1 litre, holds less than a litre • MONEY • Know how many pennies each coin is worth • Count in 2s ,5s and 10s, • write prices in pounds and pence and in decimal notation, e.g. £3.45 is 3 pounds and 45 pence • use coinage to make different amounts of money • use money to make up a given amount of money in different ways (e.g. £1 is made up of 2 fifty pence coins or 5 twenty pence coins. • use money up to 99 p to add during shopping activities and write the number sentences to match.- link to multiplication ie If apples are 8p ; how much will 2 apples cost? • use money up to 99 p to subtract to calculate change during shopping activities and write the number sentences to |

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| | <ul style="list-style-type: none"> match. create word problems involving shopping for others to solve. TIME use a geared clock to tell time to 5 minutes count aloud in steps of 5 while the minute hand of a geared clock moves from one number to the next and make connections to the multiplication table of 5. Link half an quarter turns to half and quarter hours show time using a geared clock for others to read the time. tell time and relate words such as 'morning', 'afternoon', 'night' to a.m. and p.m., and give examples such as "I watched a movie with my father at 7.30 p.m." use everyday examples such as TV programme and bus schedules to tell and write time and to identify events that last about 1 hour/half hour, e.g. the Mathematics lesson lasted half an hour. |
| GEOMETRY | |
| Properties of shapes | <ul style="list-style-type: none"> Name and identify the properties of common 2 shapes including quadrilateral and polygons guess the 2D shapes from a given descriptions recognise and describe the differences/similarities between two 2D shapes according to attributes such as straight lines, sides , vertices, curves and sizes. identify the 2D faces on 3D shapes find "the odd one out " from 3 shapes Draw shapes on squared or isometric paper Identify 3D shapes in the environment recognise, name and describe common 3D shapes including cuboids, prisms and cones realise that two cuboids may differ in either/ or shape and size name the 3D shapes in a bag by touch and feel only. recognise and describe the differences/similarities between two 3D shapes according to attributes such as faces, edges, vertices, sizes and rolling. |
| Position and direction | <ul style="list-style-type: none"> Sort shapes using sorting tables , Venn and Carroll diagrams Create sequences using objects , cubes and shapes Create patterns using objects , cubes or shapes Practical work with routes Relate turns to hands on a clock |
| STATISTICS | |
| | <ul style="list-style-type: none"> Provide opportunities for children to sort real objects by a given criteria and by their own Provide opportunities make simple lists Model conventions such as need for title , key and scales Draw a table on the playground and have children stand in the correct place Link counting stick to scale. |

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| | <ul style="list-style-type: none">• Create 1:1 horizontal and vertical block diagrams using cubes• Create 1: 1 horizontal and vertical pictograms after collecting real data• Create 1:1 tally charts after collecting real data• Use the same information for a pictogram, a tally chart and a block diagram. Discuss "What is the same and what is different?"• Give examples of data with information missing• Model asking and answering questions about data such as "How many more....?" , "How many fewer ...? " or "What is the difference between?" |
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