

Year 2 medium term plan

Problem Solving End of year expectations:

Problem Solving

- Try different approaches and find ways of overcoming difficulties that arise when solving problems.
- Begin to organize their work and check results
- Select the mathematics they use in a wider range of classroom activities
- Use mathematics as an integral part of classroom activities, e.g . engage with mathematical activities involving sorting, counting and measuring by direct comparison, begin to understand the relevance of mathematical ideas to everyday situations by using them in role play
- Select the mathematics they use in some classroom activities, e.g. find a starting point or identify key information
- Begin to use heuristics (apparatus, diagrams, role play etc) to represent and clarify a problem
- Move between different representations of a problem, e.g. words diagrams
- Adopt a suggested model or systematic approach to a problem
- Make connections and apply their knowledge to similar situations
- Begin to apply knowledge appropriately to problem-solving

Reasoning and Dialogue

- Review their work and reasoning
- Understand a general statement by finding particular examples that match it
- Use and interpret mathematical symbols and diagrams
- Discuss their mathematical work and explain their thinking
- Represent their work using objects or pictures
- Begin to discuss their work
- Begin to use some mathematical language when discussing their work
- Begin to use their work using symbols and simple diagrams
- Draw simple conclusions from their work
- Explain why an answer is correct
- Predict what comes next in a simple sequence and explain why

Autumn	Spring	Summer
<p>Number and place value:</p> <ul style="list-style-type: none"> • Continue to practice and extend counting skills – beginning to count forwards and 	<p>Number and place value:</p> <ul style="list-style-type: none"> • Continue to practise all counting skills so that these become increasingly fluent 	<p>Number and place value:</p> <ul style="list-style-type: none"> • Practise counting in 3’s forwards and backwards, using a class number line for

<p>backwards in steps of 2 and 5. Use a class number line for support.</p> <ul style="list-style-type: none"> • Write numbers to at least 100 in numerals and words • Build upon work from year one to consolidate understanding of place value in two digit numbers. • Begin to develop estimation skills, using grouping in tens to check. • Compare and order numbers to 100, using $<$, $>$ and $=$ symbols. • Consolidate secure understanding of “=” as equivalence. • Continue to consolidate known number facts. • Begin to apply knowledge of place value and number facts to solving problems. <p>Addition and subtraction:</p> <ul style="list-style-type: none"> • Solve problems with addition and subtraction • use a number line to support mental strategies for addition – jumping in steps of ten and one. • Use knowledge of number pairs and partitioning to bridge through tens numbers when adding / subtracting • Use and apply known and quickly recalled facts to solve addition and subtraction problems • Practice recalling and using addition facts to ten / twenty 	<ul style="list-style-type: none"> • Continue to use and apply knowledge of writing numbers in numerals and words (to at least 100) • Routinely practise and check estimation skills • Consolidate use of $<$, $>$ and $=$ symbols when comparing numbers. • Use and apply confidently known and quickly recalled number facts and knowledge of place value to problem solving and investigations. <p>Addition and subtraction:</p> <ul style="list-style-type: none"> • Add/subtract multiples of ten mentally by applying knowledge of addition and subtraction facts to 10 / 20. • Continue to refine addition and subtraction strategies, using mental skills and strategies (see progression in calculation document) • Confidently use a number line to add and subtract two digit numbers, using jumps of ten and one or multiples of ten and one, and bridging through ten. • Practise addition and subtraction skills in a range of contexts, problems and investigations. • Continue to use the inverse operation as a checking strategy <p>Geometry:</p> <ul style="list-style-type: none"> • identify 2-D shapes on the surface of 3-D shapes, for example a circle on a cylinder 	<p>support</p> <ul style="list-style-type: none"> • Recognize the place value of each digit in a two-digit number. • identify, represent and estimate numbers using different representations, including the number line • confidently compare and order numbers to 100, using $<$, $>$ = symbols correctly. • Read and write numbers to 100 in numerals and words • Use knowledge of place value and quickly recalled number facts to solve problems apply to investigations <p>Addition and subtraction:</p> <ul style="list-style-type: none"> • Solve a range of addition and subtraction problems, choosing a suitable strategy based on the numbers involved (mental methods, number line jottings) • Confidently apply known and quickly recalled facts to addition and subtraction calculations • Add and subtract numbers using concrete objects, pictorial representations and mental methods, including a two-digit number and ones, a two digit number and tens, two two-digit numbers and adding three one-digit numbers. • Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot. • Confidently solve problems using addition
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<ul style="list-style-type: none"> • Use practical resources (counting apparatus / diennes) to model addition / subtraction. • Explore the relationship between addition and subtraction – begin to use the inverse operation as a checking strategy. • Begin to use known addition and subtraction facts to 20 to generate new known facts to 100. <p>Geometry</p> <ul style="list-style-type: none"> • Identify and describe the properties of a range of 2D shapes (including irregular shapes) – including number of sides and line symmetry. • identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces • compare and sort 2D and 3D shape according to different criteria • order and arrange combinations of mathematical objects in patterns and sequences <p>Measures</p> <ul style="list-style-type: none"> • compare and order lengths and record the results using >, < and = • choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); • compare and sequence intervals of time • tell and write the time including quarter past/to the hour and draw the hands on a clock face to show these times. 	<p>and a triangle on a pyramid</p> <ul style="list-style-type: none"> • compare and sort common 2-D and 3-D shapes and everyday objects, recognising and describing their properties. • Use mathematical vocabulary to describe position, direction and movement • Investigate the concept of rotation or “turn” – in relation to angle as a movement. • Continue to use and apply knowledge of quarter, half and three-quarter turns (clockwise and anti-clockwise) <p>Measures</p> <ul style="list-style-type: none"> • recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value • find different combinations of coins that equal the same amounts of money (Link to addition and subtraction) • solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change (Link to addition and subtraction) • compare and order mass and record the results using >, < and = choose and use appropriate standard units to estimate and measure mass (kg/g); <p>Fractions</p> <ul style="list-style-type: none"> • Introduce $\frac{3}{4}$ as the first non-unit fraction • Solve problems involving fractions of shapes and quantities using practical resources and making links to division. 	<p>and subtraction.</p> <p>Geometry</p> <ul style="list-style-type: none"> • Relate quarter turns to right angles • compare and sort common 2-D and 3-D shapes and everyday objects. • identify and describe the properties of 2-D shapes, including the number of sides and symmetry in a vertical line • identify and describe the properties of 3-D shapes, including the number of 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 compare and sort common 2-D and 3-D shapes and everyday objects <p>Measures</p> <ul style="list-style-type: none"> • Time (hours, minutes, seconds) • 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. • choose and use appropriate standard units to estimate and measure capacity (litres/ml) to the nearest appropriate unit, measuring vessels • compare and order volume/capacity and record the results using >, < and = • solve problems involving all measures in practical contexts • tell and write the time to five minutes, including quarter past/to the hour and
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<p>Fractions</p> <ul style="list-style-type: none"> • Solve problems involving halves and quarters of shape and quantities • Make links between unit fractions and equal sharing and grouping • Link fractions understanding to measures • Begin to place fractions (half, quarter) on a number line to reinforce the concept of as numbers – and that they can add up to more than one. • Encourage children to use a range of visualisations and resources to support their understanding of fractions. • Continue to reinforce the concept that fractions of shapes must be equal in size, but might look different. <p>Multiplication and division</p> <ul style="list-style-type: none"> • Continue counting in steps of 2, 5 and 10 forwards and backwards • Begin to relate counting in different steps to the 2, 5 and 10 times tables • Recognise the pattern when counting 2, 5 and 10. • Solve problems involving counting in steps of 2, 5 and 10. • Continue to build upon understanding of repeated addition to solve problems <p>Statistics</p> <ul style="list-style-type: none"> • interpret and construct simple pictograms, tally charts, block diagrams and simple tables • ask and answer simple questions by 	<ul style="list-style-type: none"> • Begin to explore the concept of equivalence – such as $\frac{2}{4}$ is equivalent to $\frac{1}{2}$. • Continue to place known fractions on a number line • Make connections to “time” (half past, quarter past etc. <p>Make links between fractions and measures.</p> <p>Multiplication and Division:</p> <ul style="list-style-type: none"> • Solve problems involving counting in steps of 2, 5 and 10. • Continue to solve problems involving grouping and sharing using practical apparatus and pictorial representations. • Continue to build upon understanding of repeated addition to solve problems • Begin to develop use of the arrays to explore the relationship between multiplication and division. • Build upon understanding of repeated addition as multiplication. • Begin to develop understanding from repeated addition model towards multiplication using the x symbol. • Begin to introduce the ÷ symbol. • Know that multiplication can be done in any order (commutative) but division cannot. <p>Statistics</p> <ul style="list-style-type: none"> • Pupils should have opportunities to make cross-curricular links, using and applying their skills in this domain to a range of topic-related data, with a particular focus 	<p>draw the hands on a clock to show these times.</p> <ul style="list-style-type: none"> • Where possible make links to understanding of number and calculation. <p>Fractions</p> <ul style="list-style-type: none"> • Count to ten on a number line in steps of $\frac{1}{4}$ and $\frac{1}{2}$. • Solve problems involving known fractions, using practical resources and a range of representations.– e.g. dividing/sharing by 2 means half each. <p>Multiplication and Division:</p> <ul style="list-style-type: none"> • Begin to use known multiplication and division facts for 2, 5 and 10 times tables to solve problems. • Use known multiplication facts to derive new known division facts. • Solve problems involving odd and even numbers, • Build on use of ÷ symbol to solve calculations, • Know that multiplication can be done in any order (commutative) but division cannot. • Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, include problems in contexts. <p>Statistics</p> <ul style="list-style-type: none"> • Pupils should have opportunities to make cross-curricular links, using and applying
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<p>counting the number of objects in each category and sorting the categories by quantity ask and answer questions about totalling and comparing categorical data.</p>	<p>on interpreting data and answering questions about the information in a range of representations. Ensure these opportunities are explicit in topic planning and used to assess knowledge and understanding of statistics. This should also link to computing, with explicit links and assessment opportunities.</p>	<p>their skills in this domain to a range of topic-related data, with a particular focus on interpreting data and answering questions about the information in a range of representations. Ensure these opportunities are explicit in topic planning and used to assess knowledge and understanding of statistics. This should also link to computing, with explicit links and assessment opportunities.</p>
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