| Year group | EYFS | Yr 1 | Yr 2 |
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| Conjecture | Describe what they notice. Suggest what will come next in a pattern or when counting. Fill in missing numbers or complete symmetrical patterns. | Predict the next few in a sequence. Begin to work out the $10^{\text {th }}$ in a sequence. Describe what is changing in a sequence. Begin to use age appropriate mathematical vocabulary. | Identify patterns in number sequences and predict what will come next. Describe what is changing and what is staying the same in sequences. Use age appropriate mathematical vocabulary. Begin to explain why. Begin to identify and explain rules when calculating from given examples. |
| Convince | With support, use non specialised language to explain why they gave their answers. | Begin to use mathematical terminology independently. With support, use equipment to aid their explanation. | With the support of a scaffold, write explanations that use mathematical terminology. Select equipment that supports their explanations. |
| Organise | Order numbers and objects by size, shape and/or colour. Put things that are the same together and recognise when things are different. Begin to group numbers in twos to count. | Independently set their own criteria for sorting. Identify when items do not fit their criteria. Begin to understand why grouping can make counting easier. With support, record in a systematic way. | Use venn diagrams which overlap to identify when objects, shapes or numbers belong in multiple groups. Identify mathematical criteria for sorting with increasing independence. Use grouping to make calculations easier. Begin to understand what systematic means and use tables and grids to record. |
| Classify | Identify odd and even numbers. Sort shapes with the same properties and identify lines of symmetry. Begin to explain to an adult why they have grouped items. | Describe what is the same about items in a group and what is different from other groups. With support, give explanations for their criteria when sorting. | Begin to explain why some items belong or do not belong in a group. Explain their own choices for sorting using some mathematical vocabulary. Explain why some items belong in multiple groups. Describe what is the same and what is different when looking at groups of numbers e.g odd and even, multiples of 3. |
| Imagine | Given a range of concrete objects and pictorial images. | Select concrete objects and pictorial images to support learning. Use given bar models, relationship triangles and part-part-whole diagrams. | Explain why they have selected concrete of pictorial resources to support learning. Use jottings to support calculations. Independently select resources to support with problem solving and to explain their learning to others. Draw bar models, relationship triangles and part-part-whole diagrams to support with problem solving. |
| Express | Talk about Mathematical problems. Select their own resources. Make their own marks to help them solve problems. | Talk about maths problems with an adult and with their peers. Use different resources and representations. | Present a problem and its solution to adults and their peers. Ask mathematical questions. |
| Specialise | Guided by an adult to explore maths in a systematic way. Complete Maths activities either independently or with support. Explore the Maths activities in the role play area and in the outdoor areas. | Begin to prove/disprove given rules by testing examples with support. | Begin to prove/disprove given rules by testing examples. |
| Generalise | Identify things that always happen e.g. when we add the number gets bigger. | Begin to explain rules using sometimes, always, never questions. | With some support, identify rules for times tables, shape names, finding fractions, adding and subtracting odd numbers. Use a scaffold, to record rules. |


| Year group | Yr 3 | Yr 4 | Yr 5 | Yr 6 |
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| Conjecture | Work out the $10^{\text {th }}$ in a sequence. Describe multiple changes. Explain why. Identify rules when calculating. Begin to generate their own examples to find rules. | Work out the hundredth in a sequence. Use accurate Mathematical vocabulary to describe what is changing and what is staying the same. Begin to explain why with examples. Identify some rules when calculating using their own examples. | Begin to work out the nth in a sequence. Explain why with clear examples. Identify rules when calculating using their own examples. | Work out the nth in a sequence. Begin to write their own formula. Explain calculation rules and use examples independently. |
| Convince | Use the correct/accurate mathematical terminology to persuade others that their conjecture is correct. Begin to use examples to support their ideas. | Begin to use diagrams to persuade others that their conjecture is correct. Use examples and accurate mathematical terminology. Begin to connect Mathematical concepts together to support their explanations. | Use some diagrams, example and correct/accurate mathematical terminology to begin to persuade different audiences that their conjectures are correct. | Use a range of diagrams, examples and correct/accurate mathematical terminology to persuade a range of audiences that their conjectures are correct. Connect knowledge of a range of Mathematical concepts to support explanation e.g. use understanding of area to explain the formula for volume. |
| Organise | Use venn diagrams and begin to use carrol diagrams to sort objects, shapes and numbers with multiple criteria. Understand what systematic means. | Sort objects, shapes, numbers and calculations using multiple criteria. Set their own criteria and begin to explain their choices. Use diagrams to support sorting. Begin to create their own tables and grids to record information systematically. | Use more complex mathematical criteria when sorting shapes, objects, numbers or calculations. Select their own criteria and explain their choices. Use tables and grids independently to record information. Begin to use subgroups to classify further. | Record work systematically to identify all possible answers and allow for identification of patterns and formulas. |
| Classify | Explain why some items belong or do not belong in a group using mathematical vocabulary. Begin to explain why multiple criteria were used. | Explain their choices for multiple criteria. Describe what is the same and different in sets of calculations e.g. they all give the same answers; they all have answers that are multiples of 8 . Classify different types of triangle and quadrilateral. | Explain their choices for their criteria using mathematical vocabulary. Use more complex groupings for numbers e.g. prime numbers, square numbers, factors. | Use formula and rules to explain the criteria for groups and sub-groups. |
| Imagine | Organise their jottings to support problem solving. Begin to draw diagrams for support. Draw bar models, relationship triangles and part-part-whole diagrams to support with more complex problem solving. | Draw their own images to support their problem solving. Begin to use diagrams to explain patterns and rules. | Use grids and tables to record information more clearly. Begin to select a range of representations to explain rules and patterns. | Use grids and tables to identify patterns. Use a range of representations to explain rules and patterns. Use algebra to solve problems. |


| Express | Present a problem and a solution <br> to a range of audiences and begin <br> to explain their thinking. | Present a problem and a solution <br> to a range of audiences <br> explaining their thinking. <br> Challenge others mistakes in an <br> appropriate way. | Begin to discuss common <br> misconceptions and explain why they <br> are incorrect. Use representations <br> and/or resources to support their <br> explanations. | Discuss misconceptions and explain <br> why they arise. Describe patterns and <br> why they occur. Explain formula they <br> have written. Use a range of <br> representations and resources to <br> support their explanations. |
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| Specialise | Prove/disprove given rules by <br> testing examples. With scaffolding, <br> test in a systematic way. | Prove/disprove given rules by <br> testing examples. Test in a <br> systematic way. | Test examples to answer their own <br> questions. Begin to collect and record <br> in an appropriate, systematic way and <br> select appropriate start and end <br> points. | Collect and record in an appropriate, <br> systematic way and select appropriate <br> start and end points. |
| Generalise | Identify rules for given examples <br> and being to identify rules for their <br> own examples. Record their rules. | Identify rules for their own <br> examples and record them. Begin <br> to link back to their examples to <br> prove their rules. | Identify rules and patterns and explain <br> how they know they are a rule. Use <br> different representations to prove <br> their rules. Begin to write formula. | Write formula for their rules and use a <br> range of representations to prove their <br> rules are correct. |

