FULWELL INFANT SCHOOL ACADEMY

Maths Whole School Progression guide

Year 2 Coverage

Year 2- Yearly Overview **Autumn Term**

		Week 1 – 3 (BLOCK 1)	Week 4 – 8 (BLOCK 2)	Week 9 – 10 (BLOCK 3)	Week 11 (BLOCK 4)	Week 12 (BLOCK 5)
		Number: Place Value	**Number: Addition and Subtraction**	**Measurement: Money**	**Number: Multiplication and Division**	**Consolidation**
White Rose Maths Small Steps		• Count forwards & backwards within 20 • Tens and ones within 20 • Count forwards & backwards within 50 • Tens and ones within 50 • Compare numbers within 50 • Count objects to 100 and read and write numbers in numerals and words. • Represent numbers to 100. • Tens and ones with a part whole model. • Tens and ones using addition. • Use a place value chart. • Compare objects. • Compare numbers. • Order objects and numbers. • Count in 2s • Count in 5s & 10s • Count in 3s.	• Fact families – Addition and subtraction bonds to 20. • Check calculations. • Compare number sentences. • Related facts. • Bonds to 100 (tens). • Add and subtract 1s. • 10 more and 10 less. • Add and subtract 10s. • Add by making 10 • Add a 2-digit and 1-digit number – crossing 10. • Subtraction – crossing 10 • Subtract a 1-digit number from a 2-digit number – crossing 10. • Add two 2-digit numbers – not crossing 10 – add ones and add tens. • Add two 2-digit numbers – crossing 10 – add ones and add tens. • Subtract a 2-digit number from a 2-digit number – not crossing 10. • Subtract a 2-digit number from a 2-digit number – crossing 10 – subtract ones and tens. • Find and make number bonds • Bonds to 100 (tens and ones). • Add three 1-digit numbers.	• Recognising coins & notes • Count money – pence. • Count money – pounds (notes and coins). • Count money – notes and coins. • Select money. • Make the same amount. • Compare money. • Find the total. • Find the difference. • Find change. • Two-step problems.	• Make equal groups. • Add equal groups. • Make arrays	All
National Curriculum Link		• Read and write numbers to at least 100 in numerals and in words. • 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. • Use place value and number facts to solve problems. • Count in steps of 2, 3 and 5 from 0, and in tens from any number, forward and backward.	• Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100. • Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones; a two-digit number and tens; two two-digit numbers; adding three one-digit numbers. • Show that the addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot. • Solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures; applying their increasing knowledge of mental and written methods. • Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.	• 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. • Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.	• Recall and use multiplication and division facts for the 2, 5 and 10 times tables, including recognising odd and even numbers. • Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) sign. • Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts. • Show that the multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.	All
TAF Statements 2018 – 2019	WT	• Read and write numbers in numerals up to 100. • Partition a two-digit number into tens and ones and demonstrate and understanding of place value, though they may use structured resources to support them.	• Add and subtract (one digit numbers) explaining their method verbally in pictures or using apparatus. • Recall at least four of the six number bonds for 10 and reason about associated facts.	• Know the value of different coins.	N/A	All
	WA	• Read scales in divisions of ones, twos, fives and tens. • Partition two digit numbers into different combinations of tens and ones, explaining their thinking verbally, in pictures or using apparatus.	• Recall all the number bonds to and within 10. and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships.	• Use different coins to make the same amount.	• Recall multiplication and division facts for 2, 5 and 10 and use them to solve simple problems, demonstrating and understanding of commutativity as necessary.	
	GD	• Read scales where not all numbers on the scale are given and estimate points in between. Use reasoning about numbers and relationships to solve more complex problems and explain their thinking. • Solve unfamiliar word problems that involves more than one step.	• Use reasoning about numbers and relationships to solve more complex problems and explain their thinking. • Solve unfamiliar word problems that involves more than one step.	• Use reasoning about numbers and relationships to solve more complex problems and explain their thinking. • Solve unfamiliar word problems that involves more than one step.	• Recall and use multiplication and division facts for 2, 5 and 10 and make deductions outside known multiplication facts. • Use reasoning about numbers and relationships to solve more complex problems and explain their thinking. • Solve unfamiliar word problems that involves more than one step.	

Year 2- Yearly Overview **Spring Term**

		Week 1 – 4 (BLOCK 1)	Week 5 – 6 (BLOCK 2)	Week 7 – 9 (BLOCK 3)	Week 10 – 12 (BLOCK 4)
		Number: Multiplication and Division	**Statistics**	**Geometry: Properties of Shape**	**Number: Fractions**
White Rose Maths Small Steps		• Recognise equal groups. • Make equal groups. • Add equal groups. • Multiplication sentences using the x symbol. • Multiplication sentences from pictures. • Use arrays. • 2 times-table. • 5 times-table. • 10 times-table. • Make equal groups – sharing. • Make equal groups – grouping. • Divide by 2. • Odd and even numbers. • Divide by 5. • Divide by 10.	• Make tally charts. • Draw pictograms (1-1). • Interpret pictograms (1-1). • Draw pictograms (2, 5 and 10). • Interpret pictograms (2, 5 and 10). • Block diagrams.	• Recognise 2D and 3D shapes. • Count sides on 2D shapes. • Count vertices on 2D shapes. • Draw 2D shapes. • Lines of symmetry. • Sort 2D shapes. • Make patterns with 2D shapes. • Count faces on 3D shapes. • Count edges on 3D shapes. • Count vertices on 3D shapes. • Sort 3D shapes. • Make patterns with 3D shapes.	• Make equal parts. • Recognise half. • Find half. • Recognise quarter. • Find a quarter. • Recognise a third. • Find a third. • Unit fractions. • Non-unit fractions. • Equivalence of ½ and $^2/_4$. • Find three quarters. • Count in fractions.
National Curriculum Link		• Recall and use multiplication and division facts for the 2, 5 and 10 times tables, including recognising odd and even numbers. • Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs. • Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts. • Show that the multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.	• Interpret and construct simple pictograms, tally charts, block diagrams and simple tables. • Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. • Ask and answer questions about totaling and comparing categorical data.	• Identify and describe the properties of 2-D shapes, including the number of sides and line 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.	• Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity. • Write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.
TAF Statements 2018 - 2019	WT	N/A	N/A	• Name some common 2D and 3D shapes from a group of shapes or from pictures of the shapes and describe some of their properties.	N/A
	WA	• Recall multiplication and division facts for 2, 5 and 10 and use them to solve simple problems, demonstrating and understanding of commutativity as necessary.	• Read scales in divisions of ones, twos, fives and tens.	• Name and describe properties of 2D and 3D shapes, including number of sides, vertices, edges, faces and lines of symmetry.	• Identify $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$, $\frac{2}{4}$, $\frac{3}{4}$ of a number or shape and know that all the parts must be equal parts of the whole.
	GD	• Recall and use multiplication and division facts for 2, 5 and 10 and make deductions outside known multiplication facts. • Use reasoning about numbers and relationships to solve more complex problems and explain their thinking. • Solve unfamiliar word problems that involves more than one step.	• Read scales where not all numbers on the scale are given and estimate points in between. • Use reasoning about numbers and relationships to solve more complex problems and explain their thinking. • Solve unfamiliar word problems that involves more than one step.	• Describe the similarities and differences of 2D and 3D shapes, using their properties. • Solve unfamiliar word problems that involves more than one step.	• Use reasoning about numbers and relationships to solve more complex problems and explain their thinking. • Solve unfamiliar word problems that involves more than one step.

Year 2- Yearly Overview **Summer Term**

		Week 1 - 2 BLOCK 1	Week 3 - 4 BLOCK 2	Week 5 - 6 BLOCK 3	Week 7 - 8 BLOCK 4	Week 9 - 11 BLOCK 5	Week 12 BLOCK 6
		Measurement: Length and Height	**Geometry: Position and Direction**	**Consolidation and Problem solving**	**Measurement: Time**	**Measurement: Mass, Capacity and Temperature**	**Consolidation**
White Rose Maths Small Steps		• Measure length (cm). • Measure length (m). • Compare lengths. • Order lengths. • Four operations with lengths.	• Describing movement. • Describing turns. • Describing movement and turns. • Making patterns with shapes.	All	• O'clock and half past. • Quarter past and quarter to. • Telling time to 5 minutes. • Minutes in an hour, hours in a day. • Find durations of time. • Compare durations of time.	• Compare mass. • Measure mass in grams. • Measure mass in kilograms. • Compare capacity. • Millilitres. • Litres. • Temperature.	All
National Curriculum Link		• 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. • Compare and order lengths, mass, volume/capacity and record the results using >, < and =.	• 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). • Order and arrange combinations of mathematical objects in patterns and sequences.	All	• 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. • Know the number of minutes in an hour and the number of hours in a day. • Compare and sequence intervals of time.	• 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. • Compare and order lengths, mass, volume/capacity and record the results using >, < and =.	All
TAF Statements 2018 - 2019	WT	N/A	N/A	All	• Read the time on a clock	N/A	All
	WA	N/A	N/A	All	• Read the time on a clock to the nearest 15 minutes.	N/A	All
	GD	• Use reasoning about numbers and relationships to solve more complex problems and explain their thinking. • Solve unfamiliar word problems that involves more than one step.	• Use reasoning about numbers and relationships to solve more complex problems and explain their thinking. • Solve unfamiliar word problems that involves more than one step.	All	• Read the time on a clock to the nearest 5 minutes. • Use reasoning about numbers and relationships to solve more complex problems and explain their thinking. • Solve unfamiliar word problems that involves more than one step.	• Use reasoning about numbers and relationships to solve more complex problems and explain their thinking. • Solve unfamiliar word problems that involves more than one step.	All

Problem Solving Progression Reception-Year 2

Reception

Problem Solving Skills

Engage with mathematical activities and problems (sorting, counting, measuring) within a range of contexts and with clear links made to the wider curriculum, real-life and role-play
Concrete: real objects
Concrete: mathematical equipment or other real objects to represent the context
Pictorial: pictures of real objects

Use trial and trial strategy
Try something out to give insight into the context

Use trial and improvement strategy
Use ideas gained from a trial to decide what to do next

With support find some possibilities that match the context

With support check their work
Continue looking for other possibilities

With support pattern spot and copy and continue a pattern with actions

With support pattern spot and copy and continue a pattern with objects

With support pattern spot and copy and continue a pattern with shapes

With support pattern spot and copy and continue a pattern with numbers

Reasoning Skills
STAGE 1 DESCRIBE

With support describe their work verbally with simple conclusions and appropriate language
Different ways they have sorted objects: what is the same and what is different, which set has most/least, which object is biggest/smallest/tallest etc.
Numbers and calculations: how many: altogether, used, hidden, left, each etc.
Patterns spotted
Respond to questions and ideas from peers and adults
Refer to the materials they have used when talking about what they have done

With support describe how a pattern (actions, shapes, objects and numbers) will develop using appropriate language

Listen to others' descriptions

(Unless pupils are ready to record in written form, pupils' verbal reasoning should be captured by an adult)

Year 1

Problem Solving Skills

Make links and move between different representations (concrete, pictorial, abstract) of a problem, with clear links made to the wider curriculum and real-life and those based in mathematics
Abstract: Verbal description of a problem
Concrete: real objects and mathematical equipment to represent the context
Pictorial: pictures of real objects and mathematical equipment to represent the context
Abstract: mathematical notation (numerals and symbols)

With support choose to scaffold thinking using concrete and pictorial representations if appropriate

With support choose to represent thinking using concrete, pictorial or abstract representations as appropriate

With support (classroom discussion, paired work, guided group) find a starting point to break into a problem

Use trial and improvement strategy
Use ideas gained from a trial to decide what to do next

Independently find some possibilities

With support check their work
Continue looking for other possibilities
Check for repeats
Check for missing answers

Independently pattern spot and copy and continue a pattern with objects, predicting what will come next

Independently pattern spot and copy and continue a pattern with shapes, predicting what will come next

Independently pattern spot and copy and continue a sequence with numbers, predicting what will come next

Independently pattern spot and copy and continue a spatial pattern, predicting what will come next

Reasoning Skills STAGE 1 DESCRIBE STAGE 2 EXPLAIN

With support describe and explain with reasons their work, verbally, using appropriate mathematical language
Strategies and methods used
Patterns spotted
Respond to questions and ideas from peers and adults
Refer to the materials they have used and their work when describing about what they have done

Describe how a pattern/sequence (shapes, objects, numbers, spatial) will continue and explain their reasons using appropriate language

Listen to others' explanations and try to make sense of them

(Unless pupils are ready to record in written form, pupils' verbal reasoning should be captured by an adult)

Year 2

Problem Solving Skills

Independently choose to scaffold and represent thinking using concrete, pictorial or abstract representations if and as appropriate

With support (classroom discussion, paired work, guided group) find a starting point to break into a problem
Identifying key facts/relevant information

With support work systematically
Adopt a model suggested by others: peer or adult
Make connections and apply knowledge to similar problems
Spot patterns

Find most possibilities that match the context

Check their work
Continue looking for other possibilities
Check for repeats
Check for missing answers

Predict what will come next in a sequence with numbers

Predict what will come next in a pattern with shapes

Predict what will come next in a spatial pattern

With support, investigate statements and conjectures
Conjectures: something unproven may use the sentence stem: 'I think .....' Statement: something proven

Reasoning Skills STAGE 1 DESCRIBE STAGE 2 EXPLAIN

Explain their work, verbally and where and when appropriate in written form, using precise mathematical language
Strategies and methods used
Reference to patterns spotted
Respond to questions and ideas from peers and adults
Refer to the materials they have used and their work when talking about what they have done
Begin to use given sentence stems and connectives to expand, such as: 'I know that ..... because .....'

Give an explanation for their prediction of what will come next in a simple pattern/sequence (numbers, shape, spatial) using precise mathematical language

Explain why a statement or conjecture is correct or incorrect using precise mathematical language

Listen to others' explanations, make sense of them and compare and evaluate

Begin to edit and improve their own and a peer's explanation

With support investigate 'what if?' questions

(If pupils are not ready to record in written form or have a weakness, pupils' verbal reasoning should be captured by an adult)