Maths Curriculum Overview: **Lesson Design**   Year 2 - **2019-2020**

<mark>**Yellow highlight indicates additional to National Curriculum**</mark>

At Woodhouse Primary School we encourage our pupils to be confident, resilient mathematicians with a love of learning and no fear of 'grappling' with difficult concepts and those expressed in an unfamiliar way.
In our school, children are scaffolded, extended and supported through rapid teacher intervention, use of equipment and choice of strategies e.g. jottings/mental/resources. As such teaching is both enabling and extending.

Term :	Lesson Design : Curriculum objectives	Any adjustments/comments
Autumn 1	**Number: Place Value** • count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward • recognise the place value of each digit in a two-digit number (tens, ones) • compare and order numbers from 0 up to 100; use <, > and = signs • read and write numbers to at least 100 in numerals and in words • use place value and number facts to solve problems. **Number: Addition and Subtraction** solve problems with addition and subtraction: • using concrete objects and pictorial representations, including those involving numbers, quantities and measures • 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 **Number: Multiplication and Division** recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables **Measurement : Length and Height** • choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels • compare and order lengths, and record the results using >, < and = **Measurement : Money** • 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 **Geometry : Properties of Shapes** • identify and describe the properties of 2-D shapes, including the number of sides **Geometry: Position and Direction** • 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). **PE link** **Statistics** • 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 totalling and comparing categorical data. **Science link**	

Autumn 2	**Number: Place Value**
	 • identify, represent and estimate numbers using different representations, including the number line
	 • compare and order numbers from 0 up to 100; use <, > and = signs
	 • read and write numbers to at least 100 in numerals and in words
	 • use place value and number facts to solve problems.
	
	 Number: Addition and Subtraction
	  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
	 • 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
	
	 Number: Multiplication and Division
	 • recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers
	
	 Measurement: Mass and Weight
	
	 • choose and use appropriate standard units to estimate and measure mass (kg/g); to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels
	 • compare and order, mass, record the results using >, < and =
	 Measurement: Money	

	- 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 **Statistics** - 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 totalling and comparing categorical data. **Science link**	
Spring 1	**Number: Place Value** - count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward - 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 - read and write numbers to at least 100 in numerals and in words - use place value and number facts to solve problems. **Number: Addition and Subtraction** 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 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 addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot - recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.	

Number: Multiplication and Division
- recall and use multiplication and division facts for the 2, 5 and 10 multiplication 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

Measurement: Temperature

- choose and use appropriate standard units to estimate and measure ~~(m/cm); mass (kg/g);~~ temperature (°C); to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels

- compare, order and record the results using >, < and = (temperature)

Measurement : Length and Height
- choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels
- compare and order lengths, and record the results using >, < and =

Geometry: Properties of Shapes
- 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.

Statistics
- 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 totalling and comparing categorical data. **Science link.**

Spring 2	**Number: Place Value** • count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward

- recognise the place value of each digit in a two-digit number (tens, ones)
- compare and order numbers from 0 up to 100; use <, > and = signs
- read and write numbers to at least 100 in numerals and in words
- use place value and number facts to solve problems.

Number: Addition and Subtraction

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
- 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

Number: Multiplication and Division

- 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 multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot

Number: Fractions

- recognise, find, name and write fractions 1/3 ¼, 2/4 ¾ and of a length, shape, set of objects or quantity
- write simple fractions for example,1/2 of 6 = 3 and recognise the equivalence of and ½ and 2/4

Measurement: Capacity and Volume

- choose and use appropriate standard units to estimate and measure capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels
- compare and order volume/capacity and record the results using >, < and =

Measurement: Time

- tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock

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	face to show these times • know the number of minutes in an hour and the number of hours in a day. **Geometry: Properties of Shapes** • 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. **Geometry – Position and Direction** • order and arrange combinations of mathematical objects in patterns and sequences • 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). Link to **CCLTransport topic.** **Statistics** • 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 totalling and comparing categorical data.	

Summer 1	**Number :Place Value**
	• count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward
	• recognise the place value of each digit in a two-digit number (tens, ones)
	• compare and order numbers from 0 up to 100; use <, > and = signs
	• read and write numbers to at least 100 in numerals and in words
	• use place value and number facts to solve problems.
	
	Number: Addition and Subtraction
	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
	• 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 addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot
- recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.

Number: Multiplication and Division

- solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.

Measurement: Money

- 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

Measurement: Mass and Weight

- choose and use appropriate standard units to estimate and measure mass (kg/g); to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels
- compare and order, mass, record the results using >, < and =

Geometry: Properties of Shapes

- 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.

Geometry. Position and Direction

- order and arrange combinations of mathematical objects in patterns and sequences
- 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). **PE link**

Summer 2	**Number: Place Value**	
	• count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward (focussing on 3s)	
	Number :Addition and Subtraction	
	solve problems with addition and subtraction:	
	• using concrete objects and pictorial representations, including those involving numbers, quantities and measures	
	• 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 (by bridging) / a two-digit number and tens	
	❖ near doubles	
	❖ pairs of multiples of 10 to make 100	
	❖ adding and subtracting 9 and 11	
	❖ recall number facts within 10 and 20	
	Measurement: Money	
	• combine amounts to make a particular value	
	• find different combinations of coins that equal the same amounts of money	
	Measurement:Time	
	• compare and sequence intervals of time	
	• 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	
	Measurement : Length and Height (covered in CCL linked to geography)	
	• choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels	
	• compare and order lengths, and record the results using >, < and =	
	Geometry: Properties of Shapes	
	• 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.	

We aim that all pupils:
- Become **fluent in the fundamentals** of mathematics so that they develop the **conceptual** as well as **procedural** understanding that underpins a concept and the ability to recall and apply knowledge rapidly and accurately.
- Can **reason mathematically** by following a line of enquiry and develop and present a justification, argument or proof using mathematical language.
- Can **solve problems** by applying their mathematics to a variety of problems with increasing sophistication, including unfamiliar contexts and real-life scenarios.
- Can use the **language of mathematics** accurately discussing their learning with confidence and precision.

In mathematics lessons you will see:
- Teachers and children having fun and demonstrating positive 'can do' attitudes.
- High expectations of learning where ALL children are challenged and 'grappling' with concepts; they will demonstrate resilience and independence.
- Insistence on mathematical terminology being used accurately and confidently to explain learning and understanding
- Children confidently using resources from around the classroom to support their learning.
- Well-designed lessons to build upon previous learning to help learners to remember in the long term. **e.g.** repetition of stem sentences for 'sticky knowledge'; small steps; layered learning to enable and extend
- Timely and rapid interventions to address misconceptions.
- Effective questioning where teachers adapt learning within the lesson to support the progress of all learners.
- Application of skills to non-standard situations including the use of non-examples to challenge thinking.

Helpful Resources:
Maths Generic : Curriculum 2019
- ❖ **Bespoke Woodhouse Progression Documents :** Number Fluency; Shape Dictionary; Measurement Charts
- ❖ **White Rose Maths Documents :** Small Steps ; Maths Glossary; Maths Questions
- ❖ **Mastery:** Staff Training; WR Mastery Documents; Quigley Mastery Examples
- ❖ **Quigley Milestones:** B A D examples

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