Y2 Maths Overview 2020-21 (with reference to Westdale's Maths Learning Progression)

TERM/LEARNING OBJECTIVES:	ACTIVITIES/SONGS:	ASSESSMENT:
Autumn Term : Numbers and Place Value (2weeks) **I KNOW** - I can count object to 100 and read and write numerals in numbers and words.. - I can represent numbers to 100 use a range of concrete and pictorial models. - I can partition numbers to 100 and understand what each digit represents. (Not just into tens and ones e.g 58 is 5 tens and 8 ones, 4 tens and 18 ones , 3 tens and 28 ones etc) - I can use a part whole model to partition numbers (not just into tens and ones (see above) - I can use a place value chart to partition into tens and ones. - I can compare numbers using <,> and = - I can order objects and numbers. **Autumn term : Addition and subtraction (2 weeks)** **KNOW:** - I can recall and use addition and subtraction facts to 20 fluently and use these to derive number facts for 100 (focusing on multiples of tens). - I can compare number sentences using<,> and = - I can add and subtract 1 and 10 and comment on the patterns. - I can add and subtract numbers using concrete objects, pictorial representations, and mentally, including: • two-digit number and ones • two-digit number and tens • two two-digit numbers • three one-digit numbers **Autumn term: Number multiplication and division (4 week)** **KNOW:** - I can count in 2s, 5s and 10s - I can count in 3's - I can recognise equal groups. - I can make equal groups. - I can add equal groups (repeated addition) - I can use the x sign - I can write multiplication equations to match images. - I can use arrays to find commutative multiplication facts. - I know and use my 2, 5 and 10 times table. - I can divide by sharing objects into equal groups. - I can divide by making equal groups. - I can use my two times table to divide by two. - I recognise odd and even numbers. - I can use my five times table to divide by five. - I can use my ten times table to divide by ten. **Autumn term: Measures length and height (2 weeks)** **KNOW:** - I can measure lengths in cm - I can measure lengths in m - I can compare lengths and heights. - I can order lengths. - I can solve problems using the 4 operations with a length and height context. **Autumn term: Measures mass and temperature (2 weeks)** **KNOW:** - I can compare masses of objects using <,> and = - I can measure mass in g. - I can measure mass in kg - I can measure temperature in degrees centigrade. - I can use counting in 2s, 5s and 10s to read simple scales.	At Westdale when we introduce a new concept, we provide pupils with the opportunity to build competency by providing opportunities for children to experience concrete, pictorial and abstract mathematics. Concrete – children should have the opportunity to use concrete objects and manipulatives to help them understand what they are doing. Pictorial – Alongside this, children should use pictorial representations. These representations can then be used to help reason and solve problems. Abstract – both concrete and pictorial representations should support children's understanding of abstract methods. Within our lessons, children are given activities that develop their fluency, reasoning and problem solving skills. Key opportunities to promote maths mastery include:- Varied representations – including obvious, peculiar and non-examples Conceptual variation Stem sentences Challenges Fluency Scaffolded differentiation Generalised statements To support children's mathematical development children will be given a wide range of resources to use this includes but isn't limited to:- counting equipment, number lines, number cards, place value equipment, standard measures, measuring equipment, shapes, scaffold frames, everyday objects, images, songs/ rhymes, video clips, cross curricular opportunities and books.	**Criteria:** **Number and place Value** - Read and write numbers to at least 100 in numerals and words. - Recognise the place value of each digit in a two digit number (tens, ones). - Identify represent and estimate numbers using different representations including a number line. - Compare and order numbers from 0 up to 100: use <,> and = signs. - Use place value and number facts solve problems - Become more confident with numbers up to 100, recognising patterns within the number system and represent them in different ways, including spatial representations. - Partition numbers in different ways (for example, 23 = 20 + 3 and 23 = 10 + 13) to support subtraction. - Become fluent and apply their knowledge of numbers to reason with, discuss and solve problems that emphasise the value of each digit in two-digit numbers. - Begin to understand zero as a placeholder. **Number addition and subtraction** - 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: - two-digit number and ones - two-digit number and tens -two two-digit numbers -three one-digit numbers - Pupils extend their understanding of the language of addition and subtraction to include sum and difference. - Pupils practise addition and subtraction to 20 to become increasingly fluent in deriving facts such as using 3 + 7 = 10; 10 – 7 = 3 and 7 = 10 – 3 to calculate 30 + 70 = 100; 100 – 70 = 30 and 70 = 100 – 30. - They check their calculations, including by adding to check subtraction and adding numbers in a different order to check addition (for example, 5 + 2 + 1 = 1 + 5 + 2 = 1 + 2 + 5). This establishes commutativity and associativity of addition. **Number multiplication and division.** - 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 multiplications and division within the multiplication tables and write them using the multiplication (x) and division (÷)and equals (=) signs. - Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods and multiplication/ division facts. This should include problems in contexts. - Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. - They use commutativity and inverse relations to develop multiplicative reasoning (for example, 4 × 5 = 20 and 20 ÷ 5 = 4). **Measures 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 and measuring tapes. - Compare and order lengths and heights and record the results using ≤ ≥ and = . **Measures mass and temperature** - Choose and use appropriate standard units to estimate and measure mass (kg/g); temperature (°C)) to the nearest appropriate unit, using scales and thermometers. - compare and order mass and record the results using ≤ ≥ and = . **Methods**: Ongoing daily maths assessment. A pupil really understands a mathematical concept, idea or technique if he or she can: • describe it in his or her own words • represent it in a variety of ways (e.g. using concrete materials, pictures and symbols) • explain it to someone else • make up his or her own examples (and non-examples) • see connections between it and other facts or ideas • recognise it in new situations and contexts • make use of it in various ways, including in new situations. If a pupil is working at greater depth they may also be able to:- • solve problems of greater complexity (i.e. where the approach is not immediately obvious), demonstrating creativity and imagination • Independently explore and investigate mathematical contexts and structures, communicate results clearly and systematically explain and generalise the mathematics. Teacher will also use assessment tasks and quizzes/ tests. **Evidence:** Maths books, marking, observations, pupil reasoning, maths assessments, piccollage and teacher notes.

Spring : Statistics picture graphs (1 week)
I KNOW:
- I can make a tally chart.
- I can draw a pictogram with 1-1 correspondence.
- I can interpret a pictogram with 1-1 correspondence.
- I can draw pictograms where the symbols represent 2, 5 or 10 items.
- I can interpret pictograms where the symbols represent 2, 5 or 10 items.

Spring : Calculations- problems (2 week)
I KNOW:
- I understand addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.
- I recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.
- I check their calculations, including by adding to check subtraction and adding numbers in a different order to check addition (for example, 5 + 2 + 1 = 1 + 5 + 2 = 1 + 2 + 5). This establishes commutativity and associativity of addition.
- I can recall number bonds for 10 and use these to generate all number bonds for 100.
- I can record addition and subtraction in columns supports place value and prepares for formal written methods with larger numbers

Spring : Measures Money (2 week)
I KNOW:
- I can total amounts up to 100 pence
- I can total whole pounds.
- I can use the £ and p notation
- I can select coins to make a total.
- I can make totals in different ways.
- I can compare two amounts in pounds or pence using <,> and =
- I can use addition to find totals of money:-
- two-digit number and ones
- two-digit number and tens
- two two-digit numbers
- three one-digit numbers
- I can use addition and subtraction to find the difference between two amounts.
- I can solve two-step problems.

Spring : Geometry Properties of shapes (3 week)
I KNOW:
- I can recognise and name 2d and 3d shapes
- I can name shapes using their properties including irregular shapes.
- I can count sides and vertices on 2d shapes
- I can use my knowledge of 2d shape properties to create 2d shapes.
- I recognise vertical lines of symmetry.
- I can sort 2d shapes including shapes in different orientations.
- I can use my knowledge of the properties of 2-D shapes to create patterns.
- I can use my knowledge of 2-D shapes to identify the shapes of faces on 3-D shapes.
- I can use my knowledge of faces and curved surfaces to help me identify edges on 3-D shapes.
- I can use my knowledge of edges to help me to identify vertices on 3-D shapes.
- I can use my knowledge of shape properties to sort 3-D shapes in different ways e.g. faces, shapes of faces, edges, vertices, if they roll, if they stack…
- I can use my knowledge of the properties of 3-D shapes to create patterns including placing the shapes in different orientations.

Spring : Number Fractions (3 weeks)
I KNOW:
- I understand the concept of a whole as being one object or one quantity
- I know that halving is splitting a whole into two equal parts.
- I find halve of a set of objects or quantity.
- I recognise quarters of shapes, objects and quantities.
- I find quarters of shapes, objects and quantities.
- I recognise one third is equal to one part out of three equal parts.
- I find thirds of shapes, objects and quantities.
- I know that the denominator represents the number of parts that a shape or quantity is split into.
- I can recognise and use non-unit fractions 2/3 and ¾.
- I know that ½ and 2/4 are equivalent.
- I find ¾ of a quantity.
- I can count in fractions-halves, thirds and quarters from any number up to 10.

At Westdale when we introduce a new concept, we provide pupils with the opportunity to build competency by providing opportunities for children to experience concreate, pictorial and abstract mathematics.
Concrete – children should have the opportunity to use concrete objects and manipulatives to help them understand what they are doing.
Pictorial – Alongside this, children should use pictorial representations. These representations can then be used to help reason and solve problems.
Abstract – both concrete and pictorial representations should support children's understanding of abstract methods.

Within our lessons, children are given activities that develop their fluency, reasoning and problem solving skills.
Key opportunities to promote maths mastery include:-
Varied representations – including obvious, peculiar and non-examples
Conceptual variation
Stem sentences
Challenges
Fluency
Scaffolded differentiation
Generalised statements

To support children's mathematical development children will be given a wide range of resources to use this includes but isn't limited to:- counting equipment, number lines, number cards, place value equipment, standard measures, measuring equipment, shapes, scaffold frames, everyday objects, images, songs/ rhymes, video clips, cross curricular opportunities and books.

Criteria: .
Statistics picture graphs
- 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.
Calculations problems
- Show that 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.
-derive and use related facts up to 100
- Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.
- They check their calculations, including by adding to check subtraction and adding numbers in a different order to check addition (for example, 5 + 2 + 1 = 1 + 5 + 2 = 1 + 2 + 5). This establishes commutativity and associativity of addition.
- Recording addition and subtraction in columns supports place value and prepares for formal written methods with larger numbers
Measures 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.
Geometry Properties of shape
- 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.
Number fractions
- Recognise, find, name and write fractions 1/ 2 , 1/ 3 , 1/ 4 , 2/ 4 and 3/ 4 of a length, shape, set of objects or quantity.
- Write simple fractions for example, 1 /2 of 6 = 3 and recognise the equivalence of 2/ 4 and 1/ 2

Methods:
Ongoing daily maths assessment.
A pupil really understands a mathematical concept, idea or technique if he or she can:
• describe it in his or her own words
• represent it in a variety of ways (e.g. using concrete materials, pictures and symbols)
• explain it to someone else
• make up his or her own examples (and non-examples)
• see connections between it and other facts or ideas
• recognise it in new situations and contexts
• make use of it in various ways, including in new situations.
If a pupil is working at greater depth they may also be able to:-
• solve problems of greater complexity (i.e. where the approach is not immediately obvious), demonstrating creativity and imagination
• Independently explore and investigate mathematical contexts and structures, communicate results clearly and systematically explain and generalise the mathematics.

Teacher will also use assessment tasks and quizzes/ tests.

Evidence: Maths books, marking, observations, pupil reasoning, maths assessments, piccollage and teacher notes.

Summer : Measures time and volume (3 weeks) **I KNOW: Time** - I can tell the time to the hour and half past the hour. - I can read and draw the times 'quarter to' and 'quarter past'. - I can read and show analogue time to 5-minute intervals. - I know there are 24 hours in a day and 60 minutes in an hour. - I can identify the start and end time of an event, and use these times to work out how long an event lasted. - I can compare times using 'longer' and 'shorter', and order times from longest to shortest and vice versa. **I KNOW: Volume** - I can compare the volume of containers using < , > and=. - I can use standard units of millilitres (ml) - I can use standard units of litres (l) **SATs and revise and revisit topics**	At Westdale when we introduce a new concept, we provide pupils with the opportunity to build competency by providing opportunities for children to experience concreate, pictorial and abstract mathematics. Concrete – children should have the opportunity to use concrete objects and manipulatives to help them understand what they are doing. Pictorial – alongside this children should use pictorial representations. These representations can then be used to help reason and solve problems. Abstract – both concrete and pictorial representations should support children's understanding of abstract methods. Within our lessons, children are given activities that develop their fluency, reasoning and problem solving skills. Key opportunities to promote maths mastery include:- Varied representations – including obvious, peculiar and non-examples Conceptual variation Stem sentences Challenges Fluency Scaffolded differentiation Generalised statements To support children's mathematical development children will be given a wide range of resources to use this includes but isn't limited to:- counting equipment, number lines, number cards, place value equipment, standard measures, measuring equipment, shapes, scaffold frames, everyday objects, images, songs/ rhymes, video clips, cross curricular opportunities and books.	**Criteria:** . **Measures 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. Know the number of minutes in an hour and the number of hours in a day. - Compare and sequence intervals of time. **Number fractions.** - Recognise, find and name a half as one of two equal parts of an object, shape or quantity - Recognise half and quarter as 'fractions of' discrete and continuous quantities by solving problems using shapes, objects and quantities. For example, they could recognise and find half a length, quantity, set of objects or shape. - Connect halves and quarters to the equal sharing and grouping of sets of objects and to measures, as well as recognising and combining halves and quarters as parts of a whole. **Measures Volume** - Choose and use appropriate standard units to estimate and measure capacity (litres/ml) to the nearest appropriate unit, using measuring vessels. - Compare and order volume/capacity and record the results using >, < and =. **Methods:** Ongoing daily maths assessment. A pupil really understands a mathematical concept, idea or technique if he or she can: • describe it in his or her own words • represent it in a variety of ways (e.g. using concrete materials, pictures and symbols) • explain it to someone else • make up his or her own examples (and non-examples) • see connections between it and other facts or ideas • recognise it in new situations and contexts • make use of it in various ways, including in new situations. If a pupil is working at greater depth they may also be able to:- • solve problems of greater complexity (i.e. where the approach is not immediately obvious), demonstrating creativity and imagination • Independently explore and investigate mathematical contexts and structures, communicate results clearly and systematically explain and generalise the mathematics. Teacher will also use assessment tasks and quizzes/ tests. SATs assessments **Evidence:** Maths books, marking, observations, pupil reasoning, maths assessments, piccollage and teacher notes.