Clayton-le-Woods Church of England Primary School

Maths

Long term overview and Statement of Intent

Together we inspire one another to live life to its fullness, rooted and built up in Christ, so that every member of our school community can learn, develop and flourish, to live in the world as the unique individuals God created us to be.

Clayton-le-Woods CEP Long Term Overview and Statement of Intent - Maths

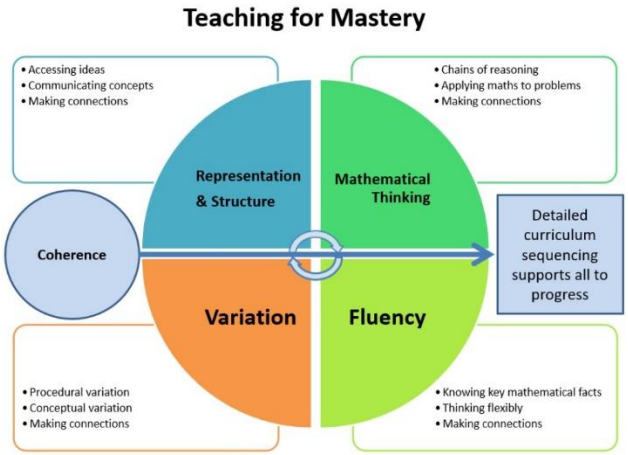
Intent of the teaching and learning of Maths

At Clayton-le-Woods CE Primary School, we aim to develop every child's passion for mathematics and to ensure all pupils are able to reason mathematically, solve problems and be fluent with facts in line with the National curriculum. Within Early Years, we strive to ensure all children develop a strong grounding in number and are provided with rich opportunities to develop spatial reasoning skills, including shape, space and measures. When teaching Maths across the whole school, we provide a curriculum which caters for the needs of all individuals, providing all children with a toolkit of strategies and skills to apply to a broad range of mathematic concepts that are not only applicable within the classroom, but also in everyday life.

We endeavour to ensure our children have positive attitudes towards Maths, enjoy and engage fully within every Maths lesson and that they are challenged throughout, working to their full potential through hands-on, real-life learning opportunities.

Implementation of the teaching and learning of Maths

Maths is taught through a mastery approach, using the White Rose scheme of work. This child-centred approach is then enhanced through NCETM spines and further evidence-based reasoning resources and challenges from a range of high-quality sources, including NRICH, NCETM and Test Base. KS1 also discretely teach mastering number, daily, to further build fluency. All teachers are clear about the big ideas in mathematics: number, calculation, geometry, measures and data. They ensure milestones, which lead to the depth of understanding, are broken down into smaller steps to achieve the granular knowledge within each unit of work, part of sequential learning. Careful adaptations are made as necessary, before, during and after lessons, ensuring all learners are carefully catered for, promoting excellence from all. Our teaching for mastery is sustained through our work with the Abacus Maths Hub on a regular basis.



Within Maths lessons, we use White Rose teaching tools and workbooks for Years 1 to 6. The breadth and depth of learning is evidenced further through the use of our Maths journals. Reception also use the White Rose Maths planning, alongside the Mastering Number Programme (also in KS1) and Pre-school use the development matters document to inform their Maths planning and assessment, alongside Reception. This is in line with the rest of the school and provides children with a firm foundation of maths understanding, ready for their transition into Year 1.

The whole class works through the programme of study at the same pace with ample time on each topic before moving on, with additional challenges built in throughout the lesson as part of our bespoke Maths curriculum. Ideas are revisited at higher levels as the curriculum spirals through the years. This helps children develop a deep and secure knowledge and understanding of Maths at each stage of their learning, so that by the end of every school year or Key Stage, children will have acquired mastery of the mathematical facts and concepts they have been learning.

Clayton-le-Woods CEP Long Term Overview and Statement of Intent - Maths

EYFS

In Early Years, children are immersed in mathematics and are given planned and spontaneous opportunities to develop their mathematical understanding. Throughout the environments across the EYFS, there are opportunities to practice and embed learning using purposeful and stimulating activities and resources. There is a dedicated maths area as well as maths running throughout the provision within Pre-School and Reception. Children enjoy playing with purposeful resources to enhance what they have been taught. Staff model mathematical language and thinking, whilst engaging with children in their play.

Through the Mastering in Number programme, children develop an understanding of number with a focus on fluency and depth. The programme builds slowly to deepen children's understanding of number, starting at Reception and into KS1.

National curriculum

Learning is embedded through a spiral curriculum by incorporating the use of carefully selected concrete equipment (manipulatives) and pictorial representations to make connections to the abstract, problem solving opportunities and group work. This approach to learning is fully aligned with the 2014 National Curriculum for Maths.

The National Curriculum for Mathematics aims to ensure that all pupils:

- become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can **solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

Our teaching of Maths is geared towards enabling each child to develop their learning and achieve their full potential. We endeavour to not only develop the mathematical skills and understanding required for later life, but also to foster an enthusiasm and fascination about maths itself. We aim to increase pupil's confidence in maths, so they are able to express themselves and their ideas using the language of maths with assurance.

This includes the pre-teaching of Mathematical vocabulary at the start of each unit and timely interventions as required. Teachers cater for these on the spot interventions within each lesson through adaptive teaching, to quickly and efficiently fill gaps in learning, enabling children to keep up, rather than catch up, as well as consolidating and deepening children's understanding.

We pride ourselves on a 'can do' attitude towards Maths. If children feel they can't do it, the sentence is always followed with YET! "We can't do it yet!" This helps children believe they will be able to do it; they just haven't quite learnt all the skills they need to solve the problem, yet. This growth mind set, within our mastery approach towards Maths helps children to achieve more than they believe they can.

Clayton-le-Woods CEP Long Term Overview and Statement of Intent - Maths

Problem Solving

Problem solving and reasoning is an integral part of our Maths lessons so that children have the ability to use and apply their knowledge readily. Lessons and activities are designed to be taught using problem-solving approaches to encourage pupils' higher-level thinking. The focus is on working with pupils' core competencies, building on what they already know to develop their relational understanding. The children are given multiple opportunities to evidence their reasoning and rationale within their Maths journals, alongside the White Rose workbooks.

Variation

The questions and examples are carefully varied to encourage pupils to think about the Maths. Rather than provide mechanical repetition, the examples are designed to deepen pupils' understanding and reveal misconceptions.

Calculation Policy

Our calculation policies are based on the mastery approaches found within the White Rose scheme. Each method is taught to children following the concrete, pictorial, abstract approach.

Additional Mental Maths Teaching

Year 1 to 6 also have separate mental maths lessons daily, this is may be in the form of 'Flashback Four', also taken from White Rose, fluent in 5 or bespoke Maths Morning Work, built around the specific needs of the cohort. This comprises of 4 arithmetic calculations. This includes teaching of number bonds, times tables, fractions and mental calculation strategies to facilitate retrieval skills and long term fluency and automaticity. On a regular basis, we also draw in 2 reasoning questions to provide balance and further practice of using such mental maths within a problem-solving context.

Alongside this, each week, Times Table Rockstars is used in each class (Y2-6) where children are challenged to beat their personal best for a set number of multiplication or division calculations appropriate to their year group. There is also the opportunity for healthy competition with their peers. This is providing a good foundation for fluency in all multiplication facts in time for their MTC in Year 4.

Vocabulary

Prior to starting a new chapter of learning, we pre-teach key vocabulary relevant to that unit of work. This is built upon and evidenced within Maths journals (knowledge organisers) and displayed on working walls for children to refer back to and ensure they are using the correct mathematical vocabulary. Learning Maths and the language of Mathematics is a little like learning a foreign language. All the pieces need to connect and fit together for something to make sense as a whole. As children become fluent in the language of Mathematics and become increasingly able to reason and explain their thinking mathematically, they become increasingly able to solve problems in a range of contexts, noting connections between areas of Maths and proving their answers by using a wide range of Mathematical thinking. Teachers promote oracy and develop confidence by encouraging children to talk about Maths and to explain their thinking, using the correct mathematical vocabulary. With this consistent approach, the children's resilience will develop and be built upon throughout the years.

Impact of the teaching and learning of Maths

Assessment is an ongoing element of the teaching and learning of Maths, and takes place constantly through the verbal feedback and live marking children receive during lessons. Throughout lessons, whole class and individual targeted questioning is used to ascertain children's understanding. Children are given the opportunity to engage in fluency, reasoning and problem-solving activities on a daily basis to demonstrate their understanding. Through discussion and feedback, children talk enthusiastically about their maths lessons and speak about how they love learning about maths. They can articulate the context in which maths is being taught and relate this to real life purposes.

The assessment of Maths also includes end of unit reviews (Y1-6) and the use of Learning by Questions devices which have pre-set assessments for each unit of work to ensure children have successfully met their end points of learning. Teachers use their professional judgement and use of formative assessment to ensure a flexible approach is adopted which recognises the need for pace of learning within the classroom. Secure teaching, learning and assessment coupled with focussed interventions results in fluent learners and a deep and secure knowledge, and as a result of this, improved standards. In addition, daily assessment for learning is used to identify necessary interventions needed, including 'buffer zones' which includes same day intervention enabling all children to make progress, again keeping up rather than catching up. The impact of this work is also reflected in the end of key stage outcomes through statutory testing and reporting.

The ongoing assessment that we use is a tool for improvement of outcomes. The assessment we carry out informs future planning and the development of the subject and is shared with the subject leader to ensure that the delivery of Maths is to the very highest standard. Our school is committed to high achievement regardless of additional needs, ensuring our high expectations are equal for all, providing an inclusive curriculum.

Mrs K Howlett – Maths Leader

June 2024

Clayton-le-Woods CEP Long Term Overview and Statement of Intent - Maths

How we live out our British Values in Maths			
Democracy	**The Rule of Law and**	**Individual Liberty**	**Mutual Respect and Tolerance of those of different faiths and beliefs**
Children can learn about the importance of democratic decision making in solving problems and making choices. Children work as a team through group work, whilst taking turns to listen to everybody speaking and explaining their reasoning. Teachers can encourage children to discuss different approaches to solving mathematical problems and to work collaboratively to make decisions that are fair and equitable. This can help children understand the importance of listening to and respecting the opinions of others, and making decisions that benefit the whole group. We also learn about democracy through voting statistics and other numerical data.	The Maths Curriculum emphasises the importance of following mathematical rules and procedures, such as order of operations and correct use of units of measurement. Children can learn about the consequences of breaking mathematical rules and how they can affect the accuracy and reliability of their calculations. Teachers can encourage children to understand the importance of following mathematical rules and procedures, and to take responsibility for their own work. Children also learn about the rule of law when playing mathematical games.	The Maths Curriculum provides opportunities for children to explore different approaches to solving mathematical problems and to express their own opinions and perspectives, whilst also being allowed to make mistakes, understanding how these help us to learn. Teachers can encourage children to develop their own mathematical strategies and to take ownership of their learning. This can help children develop a sense of autonomy and self-confidence, and respect for others' right to do the same. This may also include children devising their own ways to represent their understanding, such as pictorial or choosing which manipulatives to use.	The Maths Curriculum emphasises the importance of working collaboratively and supporting one another in the learning process. Children can learn about the importance of respect for others' ideas and perspectives and how to give and receive feedback in a constructive manner. Teachers can promote mutual respect by encouraging children to work in pairs or groups and to share their ideas and strategies. Children develop teamwork through group work. Some ability to identify patterns in real life situations, such as prayer mats within Islam and other patterns that are evident in faiths.

Clayton-le-Woods CEP Long Term Overview and Statement of Intent - Maths

Long Term Overview – Pre-School

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Willow Class (Pre-School) Mathematics Themes:	Compare amounts and react to change of amount in provision (up to 3). Introduce daily routine and be interested in this. Joins in with finger number rhymes/actions. Beginning to count in everyday contexts. Climb and squeeze themselves into different types of spaces – In PE and provision. Build with a range of resources. Complete inset puzzles in provision. Compare and categorise dinosaurs – by type/size etc.	Experiments with symbols/ marks/ numerals. Say one number for each item in order up to 5. Recite numbers past 5. Compare sizes/ weights using gesture and language. Combine shapes to make new ones. Discuss routes and locations – local area walk and walk to soldier monument. Notice, discuss, identify and arrange patterns around us – create Christmas decoration patterns. Join in with simple patterns, predicting what comes next.	Show finger numbers up to 3. Solve real maths problems with numbers up to 3. Understand position through words and gestures. Explore shapes and discuss appropriateness for designing/building. Discuss familiar routes. Explore and create ABAB patterns. Begin to describe a sequence of events using time language with pictures to support.	Show finger numbers up to 5. Solve real maths problems with numbers up to 5. Understand position through words alone. Select shapes appropriately for designing/building. Describe a familiar route. Extend and create ABAB patterns. Notice and correct an error in a repeating pattern. Begin to describe a sequence of events using time language.	Introduce subitising. Match numeral to quantity – how many superheroes? Recognise numerals to 5. Explore 2D and 3D shapes in provision. Explore comparisons – size/length/weight/ capacity/amount. Confidently rote count to 5. Understand 1:1 correspondence counting to 5. Introduce cardinal principle in Maths and model this in provision.	Subitise up to 3 objects. Select the numeral that represents a set of objects up to 3. Recognise numerals to 10 (and beyond). Talk about and explore 2D and 3D shapes using descriptive language. Make comparisons between objects relating to amount, size, length, weight and capacity. Confidently rote count to 10. Understand 1:1 correspondence counting to 10. Understand and recognise the cardinal principle.

Clayton-le-Woods CEP Long Term Overview and Statement of Intent - Maths

Long Term Overview - Reception

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Ash Class (Reception) Mathematics Themes: (underpinned by Mastering Number and White Rose Maths)	**MN focus:** *Subitising* – Subitising to 3. *Counting, ordinality and cardinality* – Focus on counting skills. *Composition* – Explore how all numbers are made of 1s. Focus of composition of 3 and 4. (4 sessions per week)	**MN focus:** *Subitising* - Subitise objects and sounds. *Comparison* - Comparison of sets. Use the language of comparison: more than and fewer than. *Counting, ordinality and cardinality* – Focus on counting skills. Focus on the 'five-ness of five' using one hand and the die pattern for 5. *Comparison* – Comparison of sets – by matching. Use the language of comparison: more than, fewer than, an equal number. *Composition* – Explore the concept of 'whole' and 'part'. *Composition* – Focus on the composition of 3, 4 and 5. *Counting, ordinality and cardinality* – Practise object counting skills, match numerals to quantities within 10, verbal counting beyond 20. (4 sessions per week)	**MN focus:** *Subitising* – Subitise within 5, focusing on die patterns. Match numerals to quantities within 5. *Counting, ordinality and cardinality* – Counting, focus on ordinality and the 'staircase' pattern. See that each number is one more than the previous number. *Composition* – Focus on 5. *Composition* – Focus on 6 and 7 as 'five and a bit'. *Comparison* – Compare sets and use language of comparison: more than, fewer than, an equal number to. Make unequal sets equal. (4 sessions per week)	**MN focus:** *Counting, ordinality and cardinality* – Focus on the 'staircase' pattern and ordering numbers. *Comparison* – Focus of ordering numbers up to 8. Use language of 'less than'. *Composition* – Focus on 7. *Composition* – Doubles – explore how some numbers can be made with two equal parts. *Composition* – Sorting numbers according to attributes – odd and even numbers. (4 sessions per week) **WRM focus:** *Shape and Space -* *Circles and triangles:* identify and name circles and triangles, compare circles and triangles, shapes in the environment, describe position. *Shapes with 4 sides:* identify and name shapes with 4 sides, combine shapes with 4 sides, shapes in the environment, my day and night. *Explore 3-D shapes:* Recognise and name 3-D shapes, find 2-D shapes within 3-D shapes, use 3-D shapes for tasks, 3-D shapes in the environment, identify more complex patterns, copy and continue patterns, and patterns in the environment. *Manipulate, compose and decompose:* Select shapes for a purpose, rotate shapes, manipulate shapes, explain shape arrangements, compose shapes, decompose shapes, copy 2-D shape pictures, find 2-D shapes within 3-D shapes. (2 sessions per week)	**MN focus:** *Counting, ordinality and cardinality* – Counting – larger sets and things that cannot be seen *Subitising* – Subitising to 6, including in structured arrangements *Composition* – Composition '5 and a bit' *Composition* – Composition of 10 *Comparison* – Comparison linked to ordinality. Play track games (4 sessions per week) **WRM focus:** *Measure -* *Mass and Capacity:* Compare mass, find a balance, explore capacity, and compare capacity. *Length, height and time:* Explore length, compare length, explore height, compare height, talk about time, order and sequence time. (2 sessions per week)	**MN focus:** Subitise to 5 Introduce the reknrek *Review and assess:* Automatic recall of bonds to 5 Composition of numbers to 10 Comparison Number patterns Counting (4 sessions per week?) **WRM focus:** *Pattern -* *Match, sort and compare:* match objects, match pictures and objects, identify a set, sort objects to a type, explore sorting techniques, create sorting rules, compare amounts. *Talk about measure and pattern:* Compare size, compare mass, compare capacity, explore simple patterns, copy and continue simple patterns, and create simple patterns. *Visualise, build and map:* Identify units of repeating patterns, create own pattern rules, explore own pattern rules, replicate and build scenes and constructions, visualise from different positions, describe positions, give instructions to build, explore mapping, represent maps with models, create own maps from familiar places, and create own maps and plans from social situations. (2 sessions per week)

Mastering Number – Reception Weekly Overview

Autumn 1	Week 1	Week 2	Week 3	Week 4	Week 5
Focus	Subitising	Counting, ordinality and cardinality	Composition	Subitising	Comparison
Set 1	Subitising within 3	Focus on counting skills	Explore how all numbers are made of 1s Focus on composition of 3 and 4	Subitise objects and sounds	Comparison of sets - 'just by looking' Use the language of comparison: *more than* and *fewer than*
Autumn 2	**Week 6**	**Week 7**	**Week 8**	**Week 9**	**Week 10**
Focus	Counting, ordinality and cardinality	Comparison	Composition	Composition	Counting, ordinality and cardinality
Set 2	Focus on counting skills Focus on the 'five-ness of 5' using one hand and the die pattern for 5	Comparison of sets - by matching Use the language of comparison: *more than, fewer than, an equal number*	Explore the concept of 'whole' and 'part'	Focus on the composition of 3, 4 and 5	Practise object counting skills Match numerals to quantities within 10 Verbal counting beyond 20

Clayton-le-Woods CEP Long Term Overview and Statement of Intent - Maths

Spring 1	Week 11	Week 12	Week 13	Week 14	Week 15
Focus	Subitising	Counting, ordinality and cardinality	Composition	Composition	Composition
Set 3	Subitise within 5 focusing on die patterns Match numerals to quantities within 5	Counting – focus on ordinality and the 'staircase' pattern See that each number is one more than the previous number	Focus on 5	Focus on 6 and 7 as '5 and a bit'	Compare sets and use language of comparison: *more than, fewer than, an equal number to* Make unequal sets equal
Spring 2	**Week 16**	**Week 17**	**Week 18**	**Week 19**	**Week 20**
Focus	Counting, ordinality and cardinality	Comparison	Composition	Composition	Composition
Set 4	Focus on the 'staircase' pattern and ordering numbers	Focus on ordering of numbers to 8 Use language of *less than*	Focus on 7	Doubles – explore how some numbers can be made with 2 equal parts	Sorting numbers according to attributes - odd and even numbers

Clayton-le-Woods CEP Long Term Overview and Statement of Intent - Maths

Summer 1	Week 21	Week 22	Week 23	Week 24	Week 25	
Focus	Counting, ordinality and cardinality	Subitising	Composition	Composition	Comparison	
Set 3	Counting – larger sets and things that cannot be seen	Subitising – to 6, including in structured arrangements	Composition – '5 and a bit'	Composition - of 10	Comparison – linked to ordinality Play track games	
Summer 2	**Week 26**	**Review and assess**	**Review and assess**	**Review and assess**	**Review and assess**	**Review and assess**
Set 4	Subitise to 5 Introduce the rekenrek	Automatic recall of bonds to 5	Composition of numbers to 10	Comparison	Number patterns	Counting

Clayton-le-Woods CEP Long Term Overview and Statement of Intent - Maths

Long Term Overview – Year 1

	Autumn Term	**Spring Term**	**Summer Term**
Oak Class (Year 1)	Number Place Value (within 10) Weeks 1-5 Number Addition & Subtraction (within 10) Weeks 6-10 Geometry Shape Week 11	Number Place Value (within 20) Weeks 1-3 Number Addition & Subtraction (within 20) Weeks 4-6 Number Place value (within 50) Weeks 7-8 Measure Length & Height Weeks 9-10 Measure Mass & Volume Weeks 11-12	Number Multiplication & Division Weeks 1-3 Number Fractions Weeks 4-5 Geometry Position & Direction Week 6 Number Place Value (within 100) Weeks 7-8 Measure Money Week 9 Measure Time Weeks 10-11

Clayton-le-Woods CEP Long Term Overview and Statement of Intent - Maths

Long Term Overview – Year 2

	Autumn Term	**Spring Term**	**Summer Term**
Elm Class (Year 2)	Number Place Value Weeks 1-4 Number Addition & Subtraction Weeks 5-9 Geometry Shape Weeks 10-12	Measure Money Weeks 1-2 Number Multiplication & Division Weeks 3-7 Measure Length & Height Weeks 8-9 Measure Mass, capacity, and temperature Weeks 10-12	Number Fractions Weeks 1-3 Measure Time Weeks 4-6 Statistics Weeks 7-8 Geometry Position & Direction Weeks 9-10

KS1 National Curriculum Breakdown – White Rose links – NCETM spines to support (hyperlinked)

Autumn Term

	National Curriculum Objectives	Suggested WR sequence	NCETM spine links to support planning
Number and Place Value (4 weeks)	- **Read and write numbers from 1 to 20 in numerals and words (Y1)** - **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.**	Step 1 - Numbers to 20 Step 2 – Count objects to 100 by making 10s Step 3 – Recognise tens and ones Step 4 – Use a place value chart Step 5 – Partition numbers to 100 Step 6 – Write numbers to 100 in words Step 7 – Flexibly partition numbers to 100 Step 8 – Write numbers to 100 expanded form Step 9 – 10s on a number line to 100 Step 10 – 10s and 1s on a number line to 100 Step 11 – Estimate numbers on a number line Step 12 – Compare objects Step 13 – Compare numbers Step 14 – Order objects and numbers Step 15 – Count in 2s, 5s and 10s Step 16 – Count in 3s PDF Y2 Autumn Block 1 SOL Place value.pdf	1.9 (revisit Year 1 PV to 100) 2.1 (count in 2s, 5s, 10s)
Number: Addition and Subtraction (5 weeks)	**- Represent and use number bonds and related subtraction facts within 20 (Y1)** **-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**	Step 1 – Bonds to 10 Step 2 – Fact families within 20 Step 3 – Related facts Step 4 – Bonds to 100 (tens) Step 5 – Add and subtract 1s Step 6 – Add by making 10 Step 7 – Add three 1digit numbers Step 8 – Add to the next 10 Step 9 – Add across 10 Step 10 – Subtract across 10	Could refer back to 1.2 (for part-whole), 1.8 (support with tens and bonds to 100), 1.9 (TP 6 using PV for fact families) 1.7 (fact families inverse etc.)

	-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.**	Step 11 – Subtract from 10 Step 12 – Subtract 1dgt number from 2digit number Step 13 – 10 more, 10 less Step 14 – Add and subtract 10s Step 15 – Add two 2digit numbers (not across 10) Step 16 – Add two 2digit numbers (across 10) Step 17 – Subtract two 2sigit numbes (not across 10) Step 18 Subtract two 2digit numbers (across 10) Step 19 – Mixed addition and subtraction Step 20 – Compare number sentences Step 21 – Missing number problems PDF Y2 Autumn Block 2 SOL Addition and sub	1.14 (add and sub tens, 10 more less) 1.13 - (covers most small steps) 1.14, 1.15 1.16 (subtraction 2 digit 2 digit, bonds 10s and 1s) 1.11 (three addends) 2.1 (TP 2 bonds to 100 from Y3) 1.12 Subtraction as difference
Geometry: Properties of Shape (3 weeks)	- **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.**	Step 1 – Recognise 2D and 3D shapes Step 2 – Count sides on 2D shapes Step 3 – Count vertices on 2D shapes Step 4 – Draw 2D shapes Step 5 – Lines of symmetry on shapes Step 6 – Use lines of symmetry to complete shapes Step 7 – Sort 2D shapes Step 8 - Count faces on 3D shapes Step 9 – Count edges on 3D shapes Step 10 – Count vertices on 3D shapes Step 11 – Sort 3D shapes Step 12 – Make patterns with 2D and 3D shapes PDF Y2 Autumn Block 3 SOL Shape.pdf	N/A

KS1 National Curriculum Breakdown – White Rose links – NCETM spines to support (hyperlinked)

Spring Term

	National Curriculum Objectives	Suggested WR sequence	NCETM spine links to support planning
Measurement: Money (2 weeks)	- **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**	Step 1 Count money - pence Step 2 Count money - pounds (notes and coins) Step 3 Count money - pounds and pence Step 4 Choose notes and coins Step 5 Make the same amount Step 6 Compare amounts of money Step 7 Calculate with money Step 8 Make a pound Step 9 Find change Step 10 Two-step problems  Y2 Spring Block 1 SOL Money.pdf  Y2 Spring Block 1 Reasoning and probl	**2.1 (TP 4-6)** **Use Add & Sub skills from previous block and apply to money** **(y4 is next spine on money)**
Number: Multiplication and division (5 weeks)	- **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** - **show that multiplication of 2 numbers can be done in any order (commutative) and division of 1 number by another cannot** - **solve problems involving multiplication and division, using materials, arrays, repeated**	Step 1 Recognise equal groups Step 2 Make equal groups Step 3 Add equal groups Step 4 Introduce the multiplication symbol Step 5 Multiplication sentences Step 6 Use arrays Step 7 Make equal groups – grouping Step 8 Make equal groups – sharing Step 9 The 2 times-table Step 10 Divide by 2 Step 11 Doubling and halving Step 12 Odd and even numbers Step 13 The 10 times-table Step 14 Divide by 10 Step 15 The 5 times-table	**2.2, 2.3 (TP1)** **2.5 (arrays)** **2.3 (2x table), 2.4 (10 and 5 x table)** **(1.4 and 1.10 TP 3 if needed to refer back to y1 odd/even numbers)** **2.6 - (TP 1-3 sharing and grouping) (TP 4 divide by 2, 5, 10)**

	addition, mental methods, and multiplication and division facts, including problems in contexts	Step 16 Divide by 5 Step 17 The 5 and 10 times-tables  Y2 Spring Block 2 SOL Multiplication an  Y2 Spring Block 2 Reasoning and proble	
Measurement: Length and height (2 weeks)	- **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 =** - **Solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures** - **Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts**	Step 1 Measure in centimetres Step 2 Measure in metres Step 3 Compare lengths and heights Step 4 Order lengths and heights Step 5 Four operations with lengths and heights  Y2 Spring Block 3 SOL Length and heigh  Y2 Spring Block 3 Reasoning and proble	**N/A**
Measurement: Mass, capacity and temperature (3 weeks)	- **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 =**	Step 1 Compare mass Step 2 Measure in grams Step 3 Measure in kilograms Step 4 Four operations with mass Step 5 Compare volume and capacity Step 6 Measure in millilitres Step 7 Measure in litres Step 8 Four operations with volume and capacity Step 9 Temperature	**N/A**  Y2 Spring Block 4 SOL Mass capacity an  Y2 Spring Block 4 Reasoning and proble

KS1 National Curriculum Breakdown – White Rose links – NCETM spines to support (hyperlinked)

Summer Term

	National Curriculum Objectives	Suggested WR sequence	NCETM spine links to support planning
Number: Fractions (3 weeks)	- Recognise, find, name and write fractions 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	Step 1 Introduction to parts and whole Step 2 Equal and unequal parts Step 3 Recognise a half Step 4 Find a half Step 5 Recognise a quarter Step 6 Find a quarter Step 7 Recognise a third Step 8 Find a third Step 9 Find the whole Step 10 Unit fractions Step 11 Non unit fractions Step 12 Recognise the equivalence of a half and two-quarters Step 13 Recognise three-quarters Step 14 Find three-quarters Step 15 Count in fractions up to a whole Y2 Summer B1 Reasoning and probl Year 2 Summer Block 1 SOL Fractions.pdf	Key Stage 1 Fractions 1: Name the fractions 'one-half', 'one-quarter' and 'one-third' in relation to a fraction of a length, shape or set of objects. 2: Read and write the fraction notation 12, 13 and 14, and relate this to a fraction of a length, shape or set of objects. 3: Find half of numbers. 4: Find 1/3 or 1/4 of a number. 5: Find 2/4 and 3/4 of an object, shape, set of objects, length or quantity; recognise the equivalence of 24 and 12.
Measurements: Time (3 weeks)	- Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clockface to show these times - Know the number of minutes in an hour and the number of hours in a day	Step 1 O'clock and half past Step 2 Quarter past and quarter to Step 3 Tell the time past the hour Step 4 Tell the time to the hour Step 5 Tell the time to 5 minutes Step 6 Minutes in an hour Step 7 Hours in a day Year 2 Summer Block 2 SOL Time.pdf Y2 Summer B2 Reasoning and probl	N/A

Mastering Number – KS1 Weekly Overview

Autumn 1	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Year 1 Set 1	Composition	Composition	Composition	Comparison	Counting, ordinality and cardinality	Composition
	Practise subitising Recap the composition of 5	Focus on the composition of 6, 7, 8 and 9 as '5 and a bit'	Focus on the composition of 6, 7, 8 and 9 as '5 and a bit'	Compare sets of objects by matching Use the language of comparison: *more than* and *fewer than*	Recap the order of numbers to 10 using the 'staircase' pattern Identify numbers that are '1 more' or '1 less' and apply this to sets of objects	Focus on numbers that can be made with 'doubles' Recap that even numbers can be made with 2 equal parts
Year 2 Set 1	Composition	Comparison	Composition	Composition	Composition	Composition
	Focus on the composition of 6, 7, 8 and 9 as '5 and a bit'	Compare numbers within 10 using language of comparison when comparing sets of objects and numbers Use the inequality and equals symbols as appropriate between expressions and in equations	Focus on odd/ even parts when even numbers are composed of 2 parts, including when 2 parts are equal (doubles)	Focus on the composition of 6 Identify missing addends and complete missing symbols in expressions and equations using equals or inequality symbol	Focus on the composition of 8 Use 2-by-4 grid and the rekenrek to find all the ways that 8 can be composed Apply knowledge to expressions and equations	Focus on the composition of 10 Use 2-by-5 grid (10-frame) and the rekenrek to find all the ways that 10 can be composed Apply knowledge to expressions and equations

Clayton-le-Woods CEP Long Term Overview and Statement of Intent - Maths

Autumn 2	Week 7	Week 8	Week 9	Week 10	Week 11
Year 1 Set 2	Composition	Composition	Composition	Composition	Counting, ordinality and cardinality
	Focus on odd and even numbers See that even numbers can be composed of 2s, and odd numbers have 'an odd 1'	Focus on the composition of 6 Use the 2-by-3 'egg box' pattern and the rekenrek to find all the ways that 6 can be composed	Focus on the composition of 8 Use 2-by-4 grid and the rekenrek to find all the ways that 8 can be composed	Focus on the composition of 10 Use 2-by-5 grid (10-frame) and the rekenrek to find all the ways that 10 can be composed	Focus on ordinality Compare number tracks and number lines
Year 2 Set 2	Composition	Composition	Composition	Composition	Counting, ordinality and cardinality
	Focus on the composition of odd numbers including being made of 2s and 1 more, or 1 odd part and 1 even part	Focus on the composition of 7 Use the Hungarian number pattern and the rekenrek to find all the ways that 7 can be composed Apply knowledge to expressions and equations	Focus on the composition of 9 Focus on 3-by-3 grid and the rekenrek to find all the ways that 9 can be composed Apply knowledge to expressions and equations	Focus on the composition of the numbers 11 to 19 as '10 and a bit' Apply knowledge to missing addend equations	Compare numbers within 20 Use proportional reasoning to identify the position of numbers within 20 in the linear number system, using midpoints of 5, 10 and 15

Clayton-le-Woods CEP Long Term Overview and Statement of Intent - Maths

Spring 1	Week 12	Week 13	Week 14	Week 15	Week 16
Year 1 Set 3	**Composition** Focus on the composition of 7 Use the Hungarian number pattern and the rekenrek to find all the ways that 7 can be composed	**Composition** Focus on the composition of 9 Focus on 3-by-3 grid and the rekenrek to find all the ways that 9 can be composed	**Composition** Recap odd and even numbers by looking at their 'shape' Explore how odd numbers can be composed of 1 odd part and 1 even part, and even numbers can be composed of 2 odd parts or 2 even parts	**Composition** Explore the concept of part-part-whole, seeing that numbers can be partitioned into parts Use the language of 'whole', 'split' and 'part' alongside the part-part-whole diagram	**Composition** Continue to explore how numbers can be partitioned Introduce systematic approach to partitioning Represent ways to partition numbers in a 'number house'
Year 2 Set 3	**Number facts and arithmetic** Focus on doubling numbers to 10, using the '5 and a bit' structure to double 6, 7, 8 and 9	**Composition** Focus on the composition of 20 Use known facts within 10 to find missing parts of 20 when the known part is greater than 10	**Number facts and arithmetic** Apply knowledge of facts within 10 to addition and subtraction within 20 WITHIN the 10s boundary	**Number facts and arithmetic** Use knowledge of doubles to calculate near doubles See that near doubles are adjacent numbers See that the sum in a near double is odd	**Number facts and arithmetic** Develop understanding of near doubles Identify different strategies for near doubles, doubling the smaller addend and adding 1 or the larger addend and subtracting 1

Spring 2	Week 17	Week 18	Week 19	Week 20	Week 21
Year 1 Set 4	**Composition** Continue to explore systematic partitioning of numbers within 10 Connect 2 equal parts to doubling and halving	**Number facts and arithmetic** Practise applying knowledge of '1 more than' and '1 less than' a number in relation to odd/ even numbers Connect this to *'first, then, now'* stories	**Number facts and arithmetic** Explore the effect of adding or subtracting 2 to odd/ even numbers Apply to *'first, then, now'* stories	**Number facts and arithmetic** Apply knowledge of composition of even numbers to subtract from 6, 8 and 10, for both the partitioning and reduction structures of subtraction	**Number facts and arithmetic** Apply knowledge of composition of odd numbers to subtract from 5, 7 and 9, for both the partitioning and reduction structures of subtraction
Year 2 Set 4	**Number facts and arithmetic** Add 3 numbers using known facts - identifying bonds of 10 and knowledge of the composition of 11 to 19 as '10 and a bit'	**Number facts and arithmetic** Add 2 numbers by 'bridging through 10'	**Number facts and arithmetic** Consolidate understanding of adding 2 numbers by 'bridging through 10' Solve missing addend problems	**Number facts and arithmetic** Subtract by 'bridging through 10'	**Number facts and arithmetic** Consolidate understanding of subtracting by 'bridging through 10'

Clayton-le-Woods CEP Long Term Overview and Statement of Intent - Maths

Summer 1	Week 22	Week 23	Week 24	Week 25	Week 26
Year 1 Set 5	Composition Focus on the composition of 11 to 15 as '10 and a bit' See this represented on a rekenrek, a double-decker bus, and in part-part-whole diagrams	Counting, ordinality and cardinality Focus on the position of the numbers 11 to 15 on the number line Recap midpoint on a 0 to 10 number line and see that 10 is the midpoint on a 0 to 20 number line.	Number facts and arithmetic Read, write and interpret expressions and equations with the + and = symbols to represent combining two sets (the aggregation structure of addition) Practise using knowledge of composition to identify the total/ sum	Number facts and arithmetic Read, write and interpret expressions and equations with the + and = symbols to represent an increase in a set (the augmentation structure of addition) Continue to use knowledge of composition to identify the total/ sum	Composition Practise recalling the composition of the numbers 6, 7, 8 and 9 **NB This week of material offers activities to develop automaticity and could be spread out over this half-term**
Year 2 Set 5	Counting, ordinality and cardinality Connect the order of multiples of 10 to the order of numbers within 10 Use proportional reasoning to identify the position of numbers within 100 in the linear number system	Number facts and arithmetic Connect missing addend problems to subtraction problems	Number facts and arithmetic Subtract across the 10 boundary, by subtracting FROM 10 rather than bridging THROUGH 10	Number facts and arithmetic Practise subtracting within 20, selecting from a range of strategies See that all subtractions can be solved by thinking of how a number is composed and identifying the missing part	Composition Focus on the composition of 20 Use known facts within 10 to find a missing part of 20 when the known part is less than 10

Clayton-le-Woods CEP Long Term Overview and Statement of Intent - Maths

Summer 2	Week 27	Week 28	Week 29	Week 30	Week 31
Year 1 Set 6	**Composition**	**Number facts and arithmetic**	**Number facts and arithmetic**	**Number facts and arithmetic**	**Number facts and arithmetic**
	Focus on the composition of 11 to 19 as '10 and a bit Use a range of representations including the Hungarian number frame and the rekenrek	Read, write and interpret expressions and equations with the - and = symbols to represent the partitioning of a 'whole' (the partitioning structure of subtraction)	Read, write and interpret expressions and equations with the - and = symbols to represent the partitioning of a 'whole' (the reduction structure of subtraction)	Practise applying knowledge of composition when adding or subtracting Focus on the composition of 5, and 6 to 9 as '5 and a bit'	Practise applying knowledge of composition when adding or subtracting Focus on the composition of 10 and doubles within 10
Year 2 Set 6	**Comparison**	**Number facts and arithmetic**	**Number facts and arithmetic**	**Number facts and arithmetic**	**Number facts and arithmetic**
	Use knowledge of composition to reason about expressions and equations and use the equals and inequality symbols in expressions and equations	Consolidate doubles and near doubles Introduce strategy of adding two adjacent odd numbers or two adjacent even numbers into a double	Consolidate understanding and develop fluency in transforming addition calculations involving two adjacent odd or two adjacent even numbers into a double	Develop fluency within 10 and apply this to calculations within and across the 10-boundary using a range of optional activities	**A range of 6 sessions providing optional activities to provide practice and opportunities for assessment**

Long Term Overview – KS2

Year 3

	Autumn Term	**Spring Term**	**Summer Term**
Beech Class (Year 3)	Number Place Value Weeks 1-3 Number Addition & Subtraction Weeks 4-8 Number Multiplication & Division A Weeks 9-12	Number Multiplication & Division A Weeks 1-3 Measure Length & Perimeter Weeks 4-6 Number Fractions A Weeks 7-9 Measure Mass & Capacity Weeks 10-12	Number Fractions B Weeks 1-2 Measure Money Weeks 3-4 Measure Time Weeks 5-7 Geometry Shape Weeks 8-9 Statistics Week 10

Year 3 - National Curriculum Breakdown – White Rose links – NCETM spines to support (hyperlinked)

Autumn Term

	National Curriculum Objectives	Suggested WR sequence	NCETM spine links to support planning
Number and Place Value (3 weeks)	• **Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for 2-digit numbers times 1-digit numbers, using mental and progressing to formal written methods** • **Show that multiplication of two numbers can be done in any order (commutative) and division on one number by another cannot (Y2)** • **Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers (Y2)** • **Count in steps of 2, 3 and 5 from 0, and in 10s from any number, forward and backward (Y2)** • **Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables**	Step 1 – Represent numbers to 100 Step 2 – Partition numbers to 100 Step 3 – Number line to 100 Step 4 – Hundreds* Step 5 – Represent numbers to 1,000 Step 6 – Partition numbers to 1,000 Step 7 – Flexible partitioning of numbers to 1,000 Step 8 – Hundreds, tens and ones Step 9 – Find 1, 10 or 100 more or less Step 10 – Number line to 1,000 Step 11 – Estimate on a number line to 1,000 Step 12 – Compare numbers to 1,000 Step 13 – Order numbers to 1,000 Step 14 – Count in 50s  Y3 Autumn Block 1 SOL Place value.pdf	**NCETM Spine: 1.17 (TP1 hundreds, 1000, 50s, 25s) 1.18 (TP1 100s,10s,1s) (TP2 number line to 1000) (TP3 1,10,100 more or less) (TP4 compare order)**
Number: Addition and Subtraction (5 weeks)	• **Add and subtract numbers mentally, including:** - **a 3-digit number and ones** - **a 3-digit number and tens** - **a 3-digit number and hundreds**	Step 1 – Apply numbers bonds within 10 Step 2 – Add and subtract 1s Step 3 – Add and subtract 10s Step 4 – Add and subtract 100s Step 5 – Spot the pattern* Step 6 – Add 1s across a 10 Step 7 – Add 10s across a 100 Step 8 – Subtract 1s across a 10 Step 9 – Subtract 10s across a 100	**NCETM Spine: 1.18 (TP 5 add and sub multiples of 100) 1.19 1.17 (TP 3 + 4 crossing 10s and 100s)**

	• **Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction** • **Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction** • **Estimate the answer to a calculation and use inverse operations to check answers**	Step 10 – Make connections* Step 11 – Add two numbers (no exchange) Step 12 – Subtract two numbers (no exchange) Step 13 – Add two numbers (across a 10) Step 14 – Add two numbers (across a 100) Step 15 – Subtract two numbers (across a 10) Step 16 – Subtract two numbers (across a 100) Step 17 – Add 2-digit and 3-digit numbers Step 18 – Subtract a 2-digit number from a 3-digit numbers Step 19 – Complements to 100 Step 20 – Estimate answers Step 21 – Inverse operations  Y3 Autumn Block 2 SOL Addition and sub Step 22 – Make decisions*	**1.20 (written addition)** **1.21 (written subtraction)**
Number: Multiplication and Division (4 weeks)	• **Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for 2-digit numbers times 1-digit numbers, using mental and progressing to formal written methods** • **Show that multiplication of two numbers can be done in any order (commutative) and division on one number by another cannot (Y2)** • **Count in steps of 2, 3 and 5 from 0, and in 10s from any number, forward and backward (Y2)** • **Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers (Y2)** • **Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables**	Step 1 – Multiplication – equal groups Step 2 – Use arrays Step 3 – Multiples of 2 Step 4 – Multiples of 5 and 10 Step 5 – Sharing and grouping Step 6 – Multiply by 3 Step 7 – Divide by 3 Step 8 – The 3 times-table Step 9 – Multiply by 4 Step 10 – Divide by 4 Step 11 – The 4 times-table Step 12 – Multiply by 8 Step 13 – Divide by 8 Step 14 – The 8 times-table Step 15 – The 2,4 and 8 times-tables  Y3 Autumn Block 3 SOL Multiplication and	**NCETM Spine: 2.6 (revisit for equal groups)** **2.8 (TP 1 mult and divide by 3)** **2.7 (mainly TP2 mult divide by 4 incl 4x table)** **(TP3 & 4 mult and divide by 8 incl 8x table)**

Year 3 - National Curriculum Breakdown – White Rose links – NCETM spines to support (hyperlinked)

Spring Term

	National Curriculum Objectives	Suggested WR sequence	NCETM spine links to support planning
Number: Multiplication and division B (3 weeks)	- **Recall and use multiplication facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers (Y2)** - **Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for 2-digit numbers times 1-digit numbers, using mental and progressing to formal written methods** - **Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which *n* objects are connected to *m* objects**	Step 1 Multiples of 10 Step 2 Related calculations Step 3 Reasoning about multiplication Step 4 Multiply a 2-digit number by a 1-digit number - no exchange Step 5 Multiply a 2-digit number by a 1-digit number - with exchange Step 6 Link multiplication and division Step 7 Divide a 2-digit number by a 1-digit number - no exchange Step 8 Divide a 2-digit number by a 1-digit number - flexible partitioning Step 9 Divide a 2-digit number by a 1-digit number - with remainders Step 10 Scaling Step 11 How many ways? Year 3 Spring Block 1 SOL Multiplication and Year 3 Spring Block 1 Reasoning and proble	**2.6 TP4 related** **2.13 (TP 6 related facts taken from y4)** **2.19 (related facts taken from y5)** **2.17 and 2.8 (TP 5 scaling)** **2.14 (select from TP 1 & 2)** **2.15 (TP 1)** *(Concrete resources best for this topic)*
Measures: Length and perimeter (3 weeks)	- **Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)** - **Measure the perimeter of simple 2-D shapes**	Step 1 Measure in metres and centimetres Step 2 Measure in millimetres Step 3 Measure in centimetres and millimetres Step 4 Metres, centimetres and millimetres Step 5 Equivalent lengths (metres and centimetres) Step 6 Equivalent lengths (centimetres and millimetres) Step 7 Compare lengths Step 8 Add lengths Step 9 Subtract lengths	**2.16 (TP 1 to introduce)**

		Step 10 What is perimeter? Step 11 Measure perimeter Step 12 Calculate perimeter Year 3 Spring Block 2 SOL Length and perin Year 3 Spring Block 2 Reasoning and proble	
Fractions A (3 weeks)	- **Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators** - **Compare and order unit fractions, and fractions with the same denominators** - **Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)** - **Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators** - **Recognise and show, using diagrams, equivalent fractions with small denominators**	Step 1 Understand the denominators of unit fractions Step 2 Compare and order unit fractions Step 3 Understand the numerators of non-unit fractions Step 4 Understand the whole Step 5 Compare and order non-unit fractions Step 6 Fractions and scales Step 7 Fractions on a number line Step 8 Count in fractions on a number line Step 9 Equivalent fractions on a number line Step 10 Equivalent fractions as bar models Year 3 Spring Block 3 SOL Fractions A.pdf Year 3 Spring Block 3 Reasoning and proble	**3.1** **3.2** **3.6 (TP 3 Fractions of amounts)**
Measurement: Mass and capacity (3 weeks)	- **Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)**	Step 1 Use scales Step 2 Measure mass in grams Step 3 Measure mass in kilograms and grams Step 4 Equivalent masses (kilograms and grams) Step 5 Compare mass Step 6 Add and subtract mass Step 7 Measure capacity and volume in millilitres Step 8 Measure capacity and volume in litres and millilitres Step 9 Equivalent capacities and volumes (litres and millilitres) Step 10 Compare capacity and volume	**N/A**

		Step 11 Add and subtract capacity and volume  Year 3 Spring Block 4 SOL Mass and capaci  Year 3 Spring Block 4 Reasoning and proble	

Year 3 - National Curriculum Breakdown – White Rose links – NCETM spines to support (hyperlinked)

Summer Term

	National Curriculum Objectives	Suggested WR sequence	NCETM spine links to support planning
Number: Fractions B (2 weeks)	- Add and subtract fractions with the same denominator within one whole - Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators	Step 1 Add fractions Step 2 Subtract fractions Step 3 Partition the whole Step 4 Unit fractions of a set of objects Step 5 Non-unit fractions of a set of objects Step 6 Reasoning with fractions of an amount Y3 Summer B1 Reasoning and probl Year 3 Summer Block 1 SOL Fractions B.pdf	**3.4 (add and sub fractions)** **3.7 (select from TP 1 + 2 only)**
Measurement: Money (2 weeks)	- Add and subtract amounts of money to give change, using both £ and p in practical contexts	Step 1 Pounds and pence Step 2 Convert pounds and pence Step 3 Add money Step 4 Subtract money Step 5 Find change Y3 Summer B2 Reasoning and probl Year 3 Summer Block 2 SOL Money.pdf	**revisit 2.1 1.25 (select appropriate)**
Measurement: Time (3 weeks)	- Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks - Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, am/pm, morning, afternoon, noon and midnight - Know the number of seconds in a minute and the number of days in each month, year and leap year - Compare durations of events	Step 1 Roman numerals to 12 Step 2 Tell the time to 5 minutes Step 3 Tell the time to the minute Step 4 Read time on a digital clock Step 5 Use am and pm Step 6 Years, months and days Step 7 Days and hours Step 8 Hours and minutes – use start and end times Step 9 Hours and minutes - use durations Step 10 Minutes and seconds Step 11 Units of time	**N/A**

		Step 12 Solve problems with time  Y3 Summer B3 Reasoning and proble  Year 3 Summer Block 3 SOL Time.pdf	

Clayton-le-Woods CEP Long Term Overview and Statement of Intent - Maths

Long Term Overview – KS2

Year 4

	Autumn Term	**Spring Term**	**Summer Term**
Silver Birch Class (Year 4)	Number Place Value Weeks 1-4 Number Addition & Subtraction Weeks 5-7 Measure Area Week 8 Number Multiplication & Division A Weeks 9-11	Number Multiplication & Division B Weeks 1-3 Measure Length & Perimeter Weeks 4-5 Number Fractions Weeks 6-9 Number Decimals A Weeks 10-12	Number Decimals B Weeks 1-2 Measure Money Weeks 3-4 Measure Time Weeks 5-6 Geometry Shape Weeks 7-8 Statistics Week 9 Geometry Position & Direction Weeks 10-11 Consolidate

Year 4 - National Curriculum Breakdown – White Rose links – NCETM spines to support (hyperlinked)

Autumn Term

	National Curriculum Objectives	Suggested WR sequence	NCETM spine links to support planning
Number and Place Value (4 weeks)	• **Read and write numbers up to 1,000 in numerals and words (Y3)** • **Identify, represent and estimate numbers using different representations** • **Recognise the place value of each digit in a 3-digit number (hundreds, tens, ones) (Y3)** • **Count in multiples of 6, 7, 9, 25 and 1,000** • **Recognise the place value of each digit in a 4-digit number (thousands, hundreds, tens and ones)** • **Find 1,000 more or less than a given number** • **Order and compare numbers beyond 1,000** • **Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value** • **Round any number to the nearest 10, 100 or 1,000**	Step 1 – Represent numbers to 1,000 Step 2 – Partition numbers to 1,000 Step 3 – Number line to 1,000 Step 4 – Thousands* Step 5 – Represent numbers to 10,000 Step 6 – Partition numbers to 10,000 Step 7 – Flexible partitioning of numbers to 10,000 Step 8 – Find 1, 10, 100, 1,000 more or less Step 9 – Number line to 10,000 Step 10 – Estimate on a number line to 10,000 Step 11 – Compare numbers to 10,000 Step 12 – Order numbers to 10,000 Step 13 – Roman Numerals* Step 14 – Round to the nearest 10 Step 15 – Round to the nearest 100 Step 16 – Round to the nearest 1,000 Step 17 – Round to the nearest 10,100 or 1,000  Y4 Autumn Block 1 SOL Place value.pdf	**NCETM Spine: 1.22** **You might find it useful to revisit some of the year 3 teaching points.** **1.17 (TP1 count in 25s)** **1.18 (TP2 number line to 1000)**
Number: Addition and Subtraction (3 weeks)	• **Add and subtract numbers with up to four digits using the formal written methods of columnar addition and subtraction where appropriate** • **Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why** • **Estimate and use inverse operations to check answers to a calculation**	Step 1 – Add and subtract 1s, 10s, 100s and 1000s Step 2 – Add up to two 4-dgit numbers – no exchange Step 3 – Add two 4-digit numbers – one exchange Step 4 – Add two 4-digit numbers – more than one exchange Step 5 – Subtract two 40 digit numbers – no exchange Step 6 – Subtract two 4-digit numbers – one exchange Step 7 – Subtract two 4-digit numbers – more than one exchange	**NCETM Spine: 1.22 (TP 3 add sub 1s,10s,100s,1000s and TP5). Refer back to 1.20 and 1.21 for introducing written methods.**

		Step 8 – Efficient subtraction Step 9 – Estimate answers Step 10 – Checking strategies*  Y4 Autumn Block 2 SOL Addition and sub	
Measurement: Area (1 week)	• **Find the area of rectilinear shapes by counting squares**	Step 1 – What is area? Step 2 – Count squares Step 3 – Make shapes Step 4 – Compare areas  Y4 Autumn Block 3 SOL Area.pdf	**NCETM Spine: 2.16**
Number: Multiplication and Division (3 weeks)	• **Recall multiplication and division facts for multiplication tables up to 12 × 12** • **Recognise and use factor pairs and commutativity in mental calculations** • **Count in multiples of 6, 7, 9, 25 and 1,000** • **Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers** • **Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers**	Step 1 – Multiples of 3 Step 2 – Multiply and divide by 6 Step 3 – 6 times table and division facts Step 4 – Multiply and divide by 9 Step 5 – 9 times-table and division facts Step 6 – The 3,6 and 9 times-tables Step 7 – Multiply and divide by 7 Step 8 – 7 times-table division facts Step 9 – 11 times-table and division facts Step 10 – 12 times-table and division facts Step 11 – Multiply by 1 and 0 Step 12 – Divide a number by 1 and itself Step 13 – Multiply three numbers  Y4 Autumn Block 4 SOL Multiplication an	**NCETM Spine: 2.6 (TP5 for x ÷ 0 and 1), 2.8 (6x and 9x), 2.9 (7x), 2.13 (x ÷ 10,100)**

Year 4 - National Curriculum Breakdown – White Rose links – NCETM spines to support (hyperlinked)

Spring Term

	National Curriculum Objectives	Suggested WR sequence	NCETM spine links to support planning
Number: Multiplication and division B (3 weeks)	- **Recognise and use factor pairs and commutativity in mental calculations** - **Recall multiplication and division facts for multiplication tables up to 12 × 12** - **Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000 (Y5)** - **Solve problems involving multiplying and adding, including using the distributive law to multiply 2-digit numbers by 1 digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects** - **Multiply 2-digit and 3-digit numbers by a 1-digit number using formal written layout** - **Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together 3 numbers**	Step 1 Factor pairs Step 2 Use factor pairs Step 3 Multiply by 10 Step 4 Multiply by 100 Step 5 Divide by 10 Step 6 Divide by 100 Step 7 Related facts – multiplication and division Step 8 Informal written methods for multiplication Step 9 Multiply a 2-digit number by a 1-digit number Step 10 Multiply a 3-digit number by a 1-digit number Step 11 Divide a 2-digit number by a 1-digit number (1) Step 12 Divide a 2-digit number by a 1-digit number (2) Step 13 Divide a 3-digit number by a 1-digit number Step 14 Correspondence problems Step 15 Efficient multiplication  Year 4 Spring Block 1 SOL Multiplication and  Year 4 Spring Block 1 Reasoning and proble	**2.10 (factor pairs),** **2.11 (11x, 12x & efficient mult)** **2.14 (multiplication)** **2.15 (division)** **2.12 (remainders)**
Measures: Length and perimeter (2 weeks)	- **Convert between different units of measure [for example, kilometre to metre; hour to minute]** - **Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres**	Step 1 Measure in kilometres and metres Step 2 Equivalent lengths (kilometres and metres) Step 3 Perimeter on a grid Step 4 Perimeter of a rectangle Step 5 Perimeter of rectilinear shapes Step 6 Find missing lengths in rectilinear shapes Step 7 Calculate the perimeter of rectilinear shapes Step 8 Perimeter of regular polygons	**2.16**

		Step 9 Perimeter of polygons  Year 4 Spring Block 2 SOL Length and perim  Year 4 Spring Block 2 Reasoning and proble	
Fractions (4 weeks)	- **Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators (Y3)** - **Recognise and show, using diagrams, families of common equivalent fractions** - **Add and subtract fractions with the same denominator**	Step 1 Understand the whole Step 2 Count beyond 1 Step 3 Partition a mixed number Step 4 Number lines with mixed numbers Step 5 Compare and order mixed numbers Step 6 Understand improper fractions Step 7 Convert mixed numbers to improper fractions Step 8 Convert improper fractions to mixed numbers Step 9 Equivalent fractions on a number line Step 10 Equivalent fraction families Step 11 Add two or more fractions Step 12 Add fractions and mixed numbers Step 13 Subtract two fractions Step 14 Subtract from whole amounts Step 15 Subtract from mixed numbers  Year 4 Spring Block 3 SOL Fractions.pdf  Year 4 Spring Block 3 Reasoning and proble	**May need to visit 3.0 (KS1 fractions) & Year 3 for intro.** **3.4 (add and sub fractions)** **3.7 (equiv - TP1 & TP2)** **3.5 (be selective - show more than one whole in fractions, count on & back past 1, add & sub)**
Decimals A (3 weeks)	- **Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing 1-digit numbers or quantities by 10 (Y3)** - **Recognise and write decimal equivalents of any number of tenths or hundredths** - **Compare numbers with the same number of decimal places up to 2 decimal places**	Step 1 Tenths as fractions Step 2 Tenths as decimals Step 3 Tenths on a place value chart Step 4 Tenths on a number line Step 5 Divide a 1-digit number by 10 Step 6 Divide a 2-digit number by 10 Step 7 Hundredths as fractions Step 8 Hundredths as decimals Step 9 Hundredths on a place value chart	**(Revisit 2.13 for ÷ 10 and 100)** **1.23 (tenths, hundredths)** **1.24 (mainly TP 1 and some of TP2)**

	- **Find the effect of dividing a 1- or 2-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths** - **Recognise and show, using diagrams, families of common equivalent fractions**	Step 10 Divide a 1- or 2-digit number by 100  Year 4 Spring Block 4 SOL Decimals A.pdf  Year 4 Spring Block 4 Reasoning and proble	

Year 4 - National Curriculum Breakdown – White Rose links – NCETM spines to support (hyperlinked)

Summer Term

	National Curriculum Objectives	Suggested WR sequence	NCETM spine links to support planning
Number: Decimals B (2 weeks)	- **Recognise and write decimal equivalents of any number of tenths or hundredths** - **Solve simple measure and money problems involving fractions and decimals to 2 decimal places** - **Compare numbers with the same number of decimal places up to 2 decimal places** - **Round decimals with 1 decimal place to the nearest whole number** - **Recognise and write decimal equivalents to ¼, ½ and ¾**	Step 1 Make a whole with tenths Step 2 Make a whole with hundredths Step 3 Partition decimals Step 4 Flexibly partition decimals Step 5 Compare decimals Step 6 Order decimals Step 7 Round to the nearest whole number Step 8 Halves and quarters as decimals  Year 4 Summer Block 1 SOL Decimals B.pdf  Year 4 Summer Block 1 Reasoning and prol	1.24
Measures: Money (2 weeks)	- **Estimate, compare and calculate different measures, including money in pounds and pence**	Step 1 Write money using decimals Step 2 Convert between pounds and pence Step 3 Compare amounts of money Step 4 Estimate with money Step 5 Calculate with money Step 6 Solve problems with money  Year 4 Summer Block 2 SOL Money.pdf  Year 4 Summer Block 2 Reasoning and prol	1.22 **(TP 4 estimate money)** 1.25
Measures: Time (2 weeks)	- **Solve problems involving converting from hours to minutes, minutes to seconds, years to months, weeks to days** - **Read, write and convert time between analogue and digital 12- and 24-hour clocks**	Step 1 Years, months, weeks and days Step 2 Hours, minutes and seconds Step 3 Convert between analogue and digital Step 4 Convert to the 24 hour clock Step 5 Convert from the 24 hour clock  Year 4 Summer Block 3 SOL Time.pdf  Year 4 Summer Block 3 Reasoning and prol	**N/A**

Clayton-le-Woods CEP Long Term Overview and Statement of Intent - Maths

Long Term Overview – KS2

Year 5

	Autumn Term	**Spring Term**	**Summer Term**
Holly Class (Year 5)	Number Place Value Weeks 1-3 Number Addition & Subtraction Weeks 4-5 Number Multiplication & Division A Weeks 6-8 Number Fractions A Weeks 9-12	Number Multiplication & Division B Weeks 1-3 Number Fractions B Weeks 4-5 Number Decimals & Percentages Weeks 6-8 Measure Perimeter & Area Weeks 9-10 Statistics Weeks 11-12	Geometry Shape Weeks 1-3 Geometry Position & Direction Weeks 4-5 Number Decimals Weeks 6-8 Number Negative numbers Week 9 Measure Converting units Weeks 10-11 Measure Volume Week 12

Year 5 - National Curriculum Breakdown – White Rose links – NCETM spines to support (hyperlinked)

Autumn Term

	National Curriculum Objectives	Suggested WR sequence	NCETM spine links to support planning
Number and Place Value (3 weeks)	• **Read Roman numerals to 1,000 (M) and recognise years written in Roman numerals** • **Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit** • **Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000** • **Solve number problems and practical problems involving the above** • **Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000**	Step 1 – Roman Numerals to 1,000 Step 2 – Numbers to 10,000 Step 3 – Numbers to 100,000 Step 4 – Numbers to 1,000,000 Step 5 – Read and write numbers to 1,000,000 Step 6 – Powers of 10 Step 7 – 10/100/1,000/10,000/100,000 more or less Step 8 – Partition numbers to 1,000,000 Step 9 – Number line to 1,000,000 Step 10 – Compare and order numbers to 100,000 Step 11 – Compare and order numbers to 1,000,000 Step 12 – Round to the nearest 10, 100 or 1,000 Step 13 – Round within 100,000 Step 14 – Round within 1,000,000	**NCETM Spine: 1.26**
Number: Addition and Subtraction (3 weeks)	• **add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)** • **add and subtract numbers mentally with increasingly large numbers** • **use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy** • **solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.**	Step 1 – Mental strategies Step 2 – Add whole numbers with more than four digits Step 3 – Subtract whole numbers with more than four digits Step 4 – Round to check answers Step 5 – Inverse operations Step 6 – Multi step addition and subtraction problems Step 7 – Compare calculations Step 8 – Find missing numbers	**NCETM Spine: revisit 1.22 (TP 3 and TP5) and 1.20, 1.21 for written methods. 1.29 (strategies and mental methods as opposed to written. Includes decimals) 1.29 (TP 3 difference) 1.29 (TP 6 estimate, approximate, inverse) 1.28 (multi-step problems)**

Number: Multiplication and Division (3 weeks)	• **Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers** • **Solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes** • **Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers** • **Establish whether a number up to 100 is prime and recall prime numbers up to 19** • **Recognise and use square numbers and cube numbers, and the notation for squared & cubed** • **Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000** • **Multiply and divide numbers mentally**	Step 1 – Multiples Step 2 – Common multiples Step 3 – Factors Step 4 – Common factors Step 5 – Prime numbers Step 6 – Square numbers Step 7 – Cube numbers Step 8 – Multiply by 10, 100 and 1,000 Step 9 – Divide by 10, 100 and 1,000 Step 10 – Multiples of 10, 100 and 1,000	**NCETM Spine:** **2.21 (factors multiples prime)** **2.9 (square numbers)** **2.13 (mult divide 10,100,100)** **2.19 (10,100,1000)** **2.20 (cube numbers)** **2.18 (maybe stand alone as equivalence)**
Fractions (4 weeks)	• **Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths** • **Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number** • **Compare and order fractions whose denominators are all multiples of the same number** • **Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths** • **Add and subtract fractions with the same denominator, and denominators that are multiples of the same number**	Step 1 – Find fractions equivalent to a unit fraction Step 2 – Find fractions equivalent to a non-unit fraction Step 3 – Recognise equivalent fractions Step 4 – Convert improper fractions to mixed numbers Step 5 – Convert mixed numbers to improper fractions Step 6 – Compare fractions less than 1 Step 7 – Order fractions less than 1 Step 8 – Compare and order fractions greater than 1 Step 9 – Add and subtract fractions with the same denominator Step 10 – Add fractions within 1 Step 11 – Add fractions with total greater than 1 Step 12 – Add a mixed number Step 13 – Add two mixed numbers Step 14 – Subtract fractions Step 15 – Subtract from a mixed number Step 16 – Subtract from a mixed number breaking the whole Step 17 – Subtract two mixed numbers	**NCETM Spine: revisit parts of earlier fractions to prepare for topic (3.1, 3.2, 3.3, 3.4)** **3.7 (equivalents and simplifying, compare order), 3.8 (add and subtract), 3.5 improper and mixed, 3.6 multiplying**

Year 5 - National Curriculum Breakdown – White Rose links – NCETM spines to support (hyperlinked)

Spring Term

	National Curriculum Objectives	Suggested WR sequence	NCETM spine links to support planning
Number: Multiplication and division B (3 weeks)	- **Multiply numbers up to four digits by a 1- or 2-digit number using a formal written method, including long multiplication for 2-digit numbers** - **Divide up to four digits by a 1-digit number using the formal written method of short division and interpret remainders appropriately for the context** - **Solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes**	Step 1 Multiply up to a 4-digit number by a 1-digit number Step 2 Multiply a 2-digit number by a 2-digit number (area model) Step 3 Multiply a 2-digit number by a 2-digit number Step 4 Multiply a 3-digit number by a 2-digit number Step 5 Multiply a 4-digit number by a 2-digit number Step 6 Solve problems with multiplication Step 7 Short division Step 8 Divide a 4-digit number by a 1-digit number Step 9 Divide with remainders Step 10 Efficient division Step 11 Solve problems with multiplication and division  Year 5 Spring Block 1 SOL Multiplication an  Year 5 Spring Block 1 Reasoning and proble	**2.23 (area model)** **2.15 (division)** **2.14 (written multiplication)**
Number: Fractions B (2 weeks)	- **Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams** - **Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number (Y4)**	Step 1 Multiply a unit fraction by an integer Step 2 Multiply a non-unit fraction by an integer Step 3 Multiply a mixed number by an integer Step 4 Calculate a fraction of a quantity Step 5 Fraction of an amount Step 6 Find the whole Step 7 Use fractions as operators  Year 5 Spring Block 2 SOL Fractions B.pdf  Year 5 Spring Block 2 Reasoning and proble	**3.5 improper and mixed** **3.6 multiplying**

Number: Decimals and percentages (3 weeks)	- **Read, write, order and compare numbers with up to 3 decimal places** - **Read and write decimal numbers as fractions** - **Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths** - **Solve problems which require knowing percentage and decimal equivalents of 1 2 , 1 4 , 1 5 , 2 5 , 4 5 and those fractions with a denominator of a multiple of 10 or 25** - **Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents** - **Solve problems involving numbers up to 3 decimal places** - **Round decimals with 2 decimal places to the nearest whole number and to 1 decimal place** - **Recognise the per cent symbol (%) and understand that per cent relates to "number of parts per 100", and write percentages as a fraction with denominator 100, and as a decimal fraction**	Step 1 Decimals up to 2 decimal places Step 2 Equivalent fractions and decimals (tenths) Step 3 Equivalent fractions and decimals (hundredths) Step 4 Equivalent fractions and decimals Step 5 Thousandths as fractions Step 6 Thousandths as decimals Step 7 Thousandths on a place value chart Step 8 Order and compare decimals (same number of decimal places) Step 9 Order and compare any decimals with up to 3 decimal places Step 10 Round to the nearest whole number Step 11 Round to 1 decimal place Step 12 Understand percentages Step 13 Percentages as fractions Step 14 Percentages as decimals Step 15 Equivalent fractions, decimals and percentages Year 5 Spring Block 3 SOL Decimals and pe Year 5 Spring Block 3 Reasoning and proble	**continue from y4 1.23 and 1.24 (1/10, 1/100, 1/000ths)** **1.24 (TP 3 compare and order)** **3.10 FDP (TP1,TP2,TP4, TP5)**
Measurement: Area and perimeter (2 weeks)	- **Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres** - **Calculate and compare the area of rectangles (including squares), including using standard units, square centimetres (cm2) and square metres (m2), and estimate the area of irregular shapes**	Step 1 Perimeter of rectangles Step 2 Perimeter of rectilinear shapes Step 3 Perimeter of polygons Step 4 Area of rectangles Step 5 Area of compound shapes Step 6 Estimate area Year 5 Spring Block 4 SOL Perimeter and ar Year 5 Spring Block 4 Reasoning and proble	**revisit 2.16**

Statistics (2 weeks)	- **Solve comparison, sum and difference problems using information presented in a line graph** - **Complete, read and interpret information in tables, including timetables**	Step 1 Draw line graphs Step 2 Read and interpret line graphs Step 3 Read and interpret tables Step 4 Two-way tables Step 5 Read and interpret timetables  Year 5 Spring Block 5 SOL Statistics.pdf  Year 5 Spring Block 5 Reasoning and proble	**some examples in 1.28 and 1.29**

Year 5 - National Curriculum Breakdown – White Rose links – NCETM spines to support (hyperlinked)

Summer Term

	National Curriculum Objectives	Suggested WR sequence	NCETM spine links to support planning
Geometry: Shape (3 weeks)	- **Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles** - **Draw given angles, and measure them in degrees (°)** - **Identify angles at a point and 1 whole turn (total 360°); angles at a point on a straight line and half a turn (total 180°)** - **Use the properties of rectangles to deduce related facts and find missing lengths and angles** - **Distinguish between regular and irregular polygons based on reasoning about equal sides and angles** - **Identify 3-D shapes, including cubes and other cuboids, from 2-D representations**	Step 1 Understand and use degrees Step 2 Classify angles Step 3 Estimate angles Step 4 Measure angles up to 180degrees Step 5 Draw lines and angle accurately Step 6 Calculate angles around a point Step 7 Calculate angles on a straight line Step 8 Lengths and angles in shapes Step 9 Regular and irregular polygons Step 10 3D shapes Year 5 Summer Block 1 SOL Shape.pdf Year 5 Summer Block 1 Reasoning and prol	**N/A** **1.28 (some ideas in TP4)**
Geometry: Position and Direction (2 weeks)	- **Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed**	Step 1 Read and plot coordinates Step 2 Problem solving with coordinates Step 3 Translation Step 4 Translation with coordinates Step 5 Lines of symmetry Step 6 Reflection in horizontal and vertical lines Year 5 Summer Block 2 SOL Position and di Year 5 Summer Block 2 Reasoning and prol	**1.27 TP 6**
Number: Decimals (3 weeks)	- **Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents** - **Solve problems involving number up to 3 decimal places**	Step 1 Use known facts to add and subtract decimals within 1 Step 2 Complements to 1 Step 3 Add and subtract decimals across 1 Step 4 Add decimals with the same number of decimal places	**ref back to 1.23 TP 4 -6** **1.24 (TP 4 & 6)** **2.19 TP 2** **2.29 (decimals by 10, 100, 1000)**

	- **Read, write, order and compare numbers with up to 3 decimal places** - **Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000**	Step 5 Subtract decimals with the same number of decimal places Step 6 Add decimals with different numbers of decimal places Step 7 Subtract decimals with different umber of decimal places Step 8 Efficient strategies for adding and subtracting decimals Step 9 Decimal sequences Step 10 Multiply by 10, 100 and 1,000 Step 11 Divide by 10, 100 and 1,000 Step 12 Multiply and divide decimals missing values  Year 5 Summer Block 3 SOL Decimals.pdf  Year 5 Summer Block 3 Reasoning and prol	

Clayton-le-Woods CEP Long Term Overview and Statement of Intent - Maths

Long Term Overview – KS2

Year 6

	Autumn Term	**Spring Term**	**Summer Term**
Elder Class (Year 6)	Number Place Value Weeks 1-2 Number Addition, Subtraction, Multiplication & Division Weeks 3-7 Number Fractions A Weeks 8-9 Number Fractions B Weeks 10-11 Measure Converting Units Week 12	Number Ratio Weeks 1-2 Number Algebra Weeks 3-4 Number Decimals Weeks 5-6 Number Fractions, decimals & percentages Weeks 7-8 Measure Area, perimeter, and volume Weeks 9-10 Statistics	Geometry Shape Weeks 1-3 Geometry Position & Direction Week 4 Themed projects, consolidating and problem solving

Year 6 - National Curriculum Breakdown – White Rose links – NCETM spines to support (hyperlinked)

Autumn Term

	National Curriculum Objectives	Suggested WR sequence	NCETM spine links to support planning
Number and Place Value (2 weeks)	- **read, write, order and compare numbers up to 10,000,000 and determine the value of each digit** - **round any whole number to a required degree of accuracy** - **use negative numbers in context, and calculate intervals across zero** - **solve number and practical problems that involve all of the above**	Step 1 – Numbers to 1,000,000 Step 2 – Numbers to 10,000,000 Step 3 – Read and write numbers to 10,000,000 Step 4 – Powers of 10 Step 5 – Number line to 10,000,000 Step 6 – Compare and order any integers Step 7 – Round any integer Step 8 – Negative numbers Y6 Autumn Block 1 SOL Place Value.pdf	**revisit y5 1.26PV** **1.30 (mainly TP2 and TP3)** **1.30 (TP 5 rounding)** **1.27 (revisit yr5 negative numbers)**
Number: Addition, Subtraction, Multiplication and Division (5 weeks)	- **multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication** - **divide numbers up to 4 digits by a 2 digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context** - **divide numbers up to 4 digits by a 2 digit number using the formal written method of short division where appropriate, interpreting remainders according to the context** - **perform mental calculations, including with mixed operations and large numbers** - **identify common factors, common multiples and prime numbers**	Step 1 – Add and subtract integers Step 2 – Common factors Step 3 – Common multiples Step 4 – Rules of divisibility Step 5 – Primes to 100 Step 6 – Square and cube numbers Step 7 – Multiply up to a 4 digit number by a 2 digit number Step 8 – Solving problems with multiplication Step 9 – Short division Step 10 – Division using factors Step 11 – Introduction to long division Step 12 – Long division with remainders Step 13 – Solve problems with division Step 14 – Solve multi-step problems Step 15 – Order of operations Step 16 – Mental calculations and estimation	**1.30TP 4** **(revisit 1.20 and 1.21 for column)** **1.30 (maybe use to secure PV and counting through boundaries using mental methods TP4 and fluency including RPS in TP6)** **2.24 (division - ref back to 2.15 if necessary)** **2.23 long multiplication** **2.21 common factors, common multiples, primes** **2.20 cubes and ref back to 2.9 for square numbers**

	- **use their knowledge of the order of operations to carry out calculations involving the four operations** - **solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why** - **solve problems involving addition, subtraction, multiplication and division** - **use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.**	 Y6 Autumn Block 2 SOL Addition, subtrac	**2.22 and 2.28 (order operations)** **2.25 (reason known facts)**
Fractions A (2 weeks)	- **Use common factors to simplify fractions; use common multiples to express fractions in the same denomination** - **Compare and order fractions, including fractions > 1** - **Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions** - **Identify common factors, common multiples and prime numbers** - **Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why** - **Solve problems involving addition, subtraction, multiplication and division**	Step 1 – Equivalent fractions and simplifying Step 2 – Equivalent fractions on a number line Step 3 – Compare and order (denominator) Step 4 – Compare and order (numerator) Step 5 – Add and subtract simple fractions Step 6 – Add and subtract any two fractions Step 7 – Add mixed numbers Step 8 – Subtract mixed numbers Step 9 – Multi-step problems  Y6 Autumn Block 3 SOL Fracitons A.pdf	**3.7 simplify equivalent incl. number line** **revisit 3.5 mixed number improper fraction add, sub, number line** **3.8 add and sub fractions** **3.8 TP 5 (compare denom. and numerator)** **3.9 Multiply, divide** **3.9 fractions of amounts** **TP1 - revisit 3.6 TP 3**
Fractions B (2 weeks)	- **Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams (Y5)** - **Multiply simple pairs of proper fractions, writing the answer in its simplest form** - **Divide proper fractions by whole numbers**	Step 1 – Multiply fractions by integers Step 2 – Multiply fractions by fractions Step 3 – Divide a fraction by an integer Step 4 – Divide any fraction by an integer Step 5 – Mixed questions with fractions Step 6 – Fraction of an amount Step 7 – Fractions of an amount – find the whole	

	- **Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions** - **Solve problems involving addition, subtraction, multiplication and division** - **Associate a fraction with division and calculate decimal fraction equivalents**	 Y6 Autumn Block 4 SOL Fracitons B.pdf	
Measurement Converting Units (1 week)	- **Solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 decimal places where appropriate** - **Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to 3 decimal places**	Step 1 – Metric measures Step 2 – Convert metric measure Step 3 – Calculate with metric measure Step 4 – Miles and kilometres Step 5 – Imperial measure  Y6 Autumn Block 5 SOL Converting Units.	**2.29 TP2 (metric only)**

Year 6 - National Curriculum Breakdown – White Rose links – NCETM spines to support (hyperlinked)

Spring Term

	National Curriculum Objectives	Suggested WR sequence	NCETM spine links to support planning
Number: Ratio (2 weeks)	- **Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts** - **Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples** - **Solve problems involving similar shapes where the scale factor is known or can be found**	Step 1 Add or multiply? Step 2 Use ratio language Step 3 Introduction to the ratio symbol Step 4 Ratio and fractions Step 5 Scale drawing Step 6 Use scale factors Step 7 Similar shapes Step 8 Ratio problems Step 9 Proportion problems Step 10 Recipe  Year 6 Spring Block 1 SOL Ratio.pdf  Year 6 Spring Block 1 Reasoning and proble	2.27
Number: Algebra (2 weeks)	- **Use simple formulae** - **Generate and describe linear number sequences** - **Find pairs of numbers that satisfy an equation with two unknowns** - **Enumerate possibilities of combinations of two variables** - **Express missing number problems algebraically**	Step 1 1-step function machines Step 2 2-step function machines Step 3 Form expressions Step 4 Substitution Step 5 Formulae Step 6 Form equations Step 7 Solve 1-step equations Step 8 Solve 2-step equations Step 9 Find pairs of values Step 10 Solve problems with two unknowns  Year 6 Spring Block 2 SOL Algebra.pdf  Year 6 Spring Block 2 Reasoning and proble	1.28 1.31

Number: Decimals (2 weeks)	- **Identify the value of each digit in numbers given to 3 decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places** - **Solve problems which require answers to be rounded to specified degrees of accuracy** - **Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why** - **Multiply 1-digit numbers with up to 2 decimal places by whole numbers** - **Use written division methods in cases where the answer has up to 2 decimal places** - **Solve problems involving addition, subtraction, multiplication and division**	Step 1 Place value within 1 Step 2 Place value – integers and decimals Step 3 Round decimals Step 4 Add and subtract decimals Step 5 Multiply by 10, 100 and 1,000 Step 6 Divide by 10, 100 and 1,000 Step 7 Multiply decimals by integers Step 8 Divide decimals by integers Step 9 Multiply and divide decimals in context  Year 6 Spring Block 3 SOL Decimals.pdf  Year 6 Spring Block 3 Reasoning and proble	**revisit TP 1.24 for 3 D.P** **revisit 2.29 - multi div 10,100,1000** **2.19 mult div decimals by integers** **2.28 (some support with division problems but no decimals)** **3.10 fraction decimal**
Number: Fractions, decimals and percentages (2 weeks)	- **Use common factors to simplify fractions; use common multiples to express fractions in the same denomination** - **Associate a fraction with division and calculate decimal fraction equivalents for a simple fraction** - **Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts** - **Compare and order fractions, including fractions >1** - **Solve problems involving the calculation of percentages and the use of percentages for comparison**	Step 1 Decimal and fraction equivalents Step 2 Fractions as division Step 3 Understand percentages Step 4 Fractions to percentages Step 5 Equivalent fractions, decimals and percentages Step 6 Order fractions, decimals and percentages Step 7 Percentage of an amount – one step Step 8 Percentage of an amount – multi-step Step 9 Percentages – missing values  Year 6 Spring Block 4 SOL Fractions decimal  Year 6 Spring Block 4 Reasoning and proble	**3.10**
Measurement: Area, perimeter and volume	- **Recognise that shapes with the same areas can have different perimeters and vice versa** - **Recognise when it is possible to use formulae for area and volume of shapes** - **Calculate the area of parallelograms and triangles**	Step 1 Shapes - same area Step 2 Area and perimeter Step 3 Area of a triangle – counting squares Step 4 Area of a right-angled triangle Step 5 Area of any triangle	**2.30 area perimeter (revisit 2.16)** **2.20 volume**

(2 weeks)	- **Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), and extending to other units**	Step 6 Area of a parallelogram Step 7 Volume - counting cubes Step 8 Volume of a cuboid  Year 6 Spring Block 5 SOL Area perimeter a  Year 6 Spring Block 5 Reasoning and proble	
Statistics (2 weeks)	- **Interpret and construct pie charts and line graphs and use these to solve problems** - **Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs (Year 4)** - **Calculate and interpret the mean as an average**	Step 1 Line graphs Step 2 Dual bar charts Step 3 Read and interpret pie charts Step 4 Pie charts with percentages Step 5 Draw pie charts Step 6 The mean  Year 6 Spring Block 6 SOL Statistics.pdf  Year 6 Spring Block 6 Reasoning and proble	**1.28 TP3 (pie chart, bar chart - missing values focus)** **3.10 TP6 - percentage context** **2.26 mean average**

Year 6 - National Curriculum Breakdown – White Rose links – NCETM spines to support (hyperlinked)

Summer Term

	National Curriculum Objectives	Suggested WR sequence	NCETM spine links to support planning
Shape (3 weeks)	- **Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles** - **Draw given angles, and measure them in degrees (°) (Y5)** - **Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles (Y5)** - **Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons** - **Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius** - **Draw 2-D shapes using given dimensions and angles** - **Recognise, describe and build simple 3-D shapes, including making nets**	Step 1 Measure and classify angles Step 2 Calculate angles Step 3 Vertically opposite angles Step 4 Angles in a triangle Step 5 Angles in a triangle – special cases Step 6 Angles in a triangle – missing angles Step 7 Angles in Quadrilaterals Step 8 Angles in polygons Step 9 Circles Step 10 Draw shapes accurately Step 11 Nets of 3D shapes  Year 6 Summer Block 1 SOL Shape.pdf  Year 6 Summer Block 1 Reasoning and prol	**1.28 TP4 (missing angles only)**
Shape: Position and Direction (1 week)	- **Describe positions on the full coordinate grid (all four quadrants)** - **Draw and translate simple shapes on the coordinate plane, and reflect them in the axes** -	Step 1 The first quadrant Step 2 Read and plot point in four quadrants Step 3 Solve problems with coordinates Step 4 Translations Step 5 Reflections  Year 6 Summer Block 2 SOL Position and di  Year 6 Summer Block 2 Reasoning and prol	**1.27 TP 6**
(8 weeks)	Consolidations / problem solving / projects		

Depth and Challenge in Mathematics

Mastery of the curriculum requires all pupils to:

- use mathematical concepts, facts and procedures appropriately, flexibly and fluently;
- recall key number facts with speed and accuracy and use them to calculate and work out unknown facts;
- have sufficient depth of knowledge and understanding to reason and explain mathematical concepts and procedures and use them to solve a variety of problems.

A pupil really understands a mathematical concept if they can:

- describe it in his or her own words;
- represent it in a variety of ways (e.g. using concrete materials, pictures and symbols – the CPA approach)
- explain it to someone else;
- make up his or her own examples (and non-examples) of it;
- 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.

Developing mastery with greater depth is characterised by pupils' ability 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.

This should be the aim for ***ALL*** children.

All children should have the opportunity to see the mathematics in different ways and develop the correct mathematical language to help them reason.

A depth of understanding is the product of the whole curriculum, not simply a bolt on question for a few children to tackle because they finish first.