Cop Lane C.E Primary School

Mathematics Policy

This policy is embedded in our school's mission statement and distinctive Christian vision:

A welcoming Christian community, committed to one another, giving our very best at all times.

Our church school is a welcoming and caring Christian family where everyone is valued and supported so that they can flourish. We aim to instill a lifelong love of learning and nurture everyone's individual talents. Through Jesus Christ, our aspirations, hopes and dreams can be achieved.

'I can do all things through Christ who strengthens me.'

Philippians 4.13

At Cop Lane CE Primary School it is our intent to nurture and develop the whole child. The mission statement sets out our rationale for life and work in school with reference to;

- ***The high quality of education and opportunities we offer our pupils,***
- ***The commitment, concern and care shown to the whole community involved with the school through a strong sense of Christian values,***
- ***The high expectations we have of all in whatever task we undertake.***

Aims

Our aims at Cop Lane CE Primary School are:

- ***To deliver a high quality education in a welcoming, friendly and supportive environment where Christian values are central to the ethos of the school and its teaching,***
- ***To have consistently high expectations which encourage each child to achieve their maximum potential, regardless of faith, gender, race or ethnicity,***
- ***To provide a stimulating and caring environment where self-discipline, respect for others and good manners are valued and encouraged,***
- ***To continually foster positive links with parents, governors, children and staff, enabling the school to play a positive role in the wider community in which it is placed,***
- ***To create an ethos where achievement, in its widest sense of the word is celebrated, where individuals are valued and a life-long love of learning is fostered.***

Vision/Intent

At Cop Lane our aim is for children to leave as confident, skilled and resilient mathematicians who understand that mathematics is a fundamental part of everyday life and the world we live in.
We teach our children a rich and progressive mathematics curriculum, "in order to give them a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics and a sense of enjoyment and curiosity about the subject." (NC 2014) Children can experience a sense of awe and wonder as they solve a problem for the first time, discover different solutions and make links between different areas of mathematics. Mathematics is integral to all aspects of life and we endeavour to ensure that children develop a healthy and enthusiastic attitude, and a deep understanding, that will stay with them for life.
Our children will thrive upon overcoming the challenges and puzzles that mathematics will bring and not be afraid to make mistakes. Regular practice enables information to move to the long-term memory and in making mistakes and searching for the correct answer deeper learning takes place. At the heart of our approach to reasoning is that pupils can notice and talk about what they are doing and through this deeper learning can become secure.
We firmly believe that mathematics teaches us how to make sense of the world around us through developing a child's ability to calculate, to reason and to solve problems. We deliver a mastery approach to the teaching and learning of mathematics, ensuring that all pupils have access to a curriculum that deepens their mathematical understanding.

Purpose of study (National Curriculum 2014)

Purpose of study Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

We aim that all pupils:

✓Become **fluent** in the fundamentals of mathematics so that they develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately,

✓Can **solve problems** by applying their mathematics to a variety of problems with increasing sophistication, including in unfamiliar contexts and to model real-life scenarios,

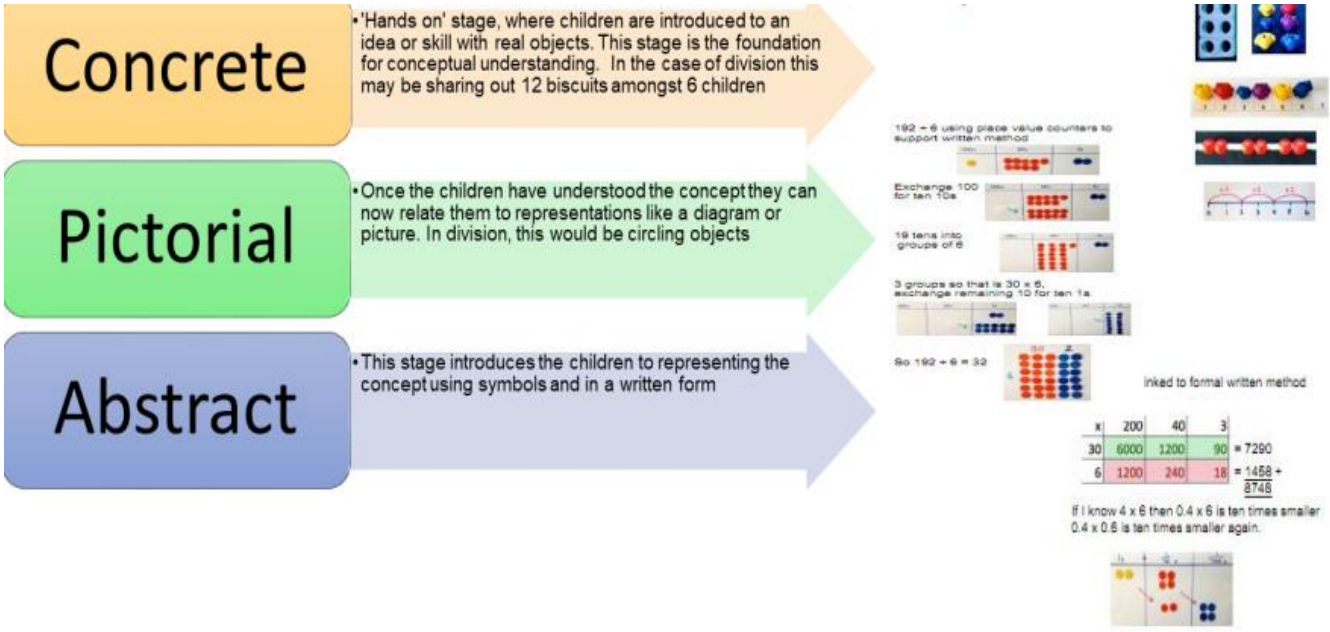
✓ Can **reason mathematically** by following a line of enquiry and develop and present a justification, argument or proof using mathematical language.

Our Beliefs:

We believe that ability within Mathematics is not fixed. We are developing the mindsets of children and adults alike to develop a Growth Mindset and a “We Can‟ attitude to Mathematics. We believe that through quality first teaching and intelligent practice, children learning together and immediate intervention that all children have the potential to “go deeper‟ and broaden their understanding of mathematical concepts

Planning, teaching and Learning:

We follow the mastery math lesson style of CONCRETE-PICTORIAL-ABSTRACT to ensure children have a true understanding of a concept. Teachers ensure that knowledge, reasoning and problem solving are incorporated in all weekly planning. We ensure that reasoning is at the core of every lesson. The children know they need to explain why their answer is correct and how they worked it out. After we are certain that they have truly mastered a concept, the children then apply their knowledge to problem solving activities.



Our definition of Mastery:

"The essential idea behind 'mastery in mathematics' is that all pupils need a deep understanding of the mathematics they are learning so that future mathematical learning is built on solid foundations which do not need to be retaught. Key ideas and building blocks are important for everyone and the class work together on the same key point, whilst at the same time pupils are supported or accelerated to gain depth of understanding and proficiency. Acceleration to higher content is avoided. Instead the reasoning behind mathematical processes is emphasised. Teacher/pupil interaction explores in detail how answers were obtained, why the method/strategy worked, and what might be the most efficient method/strategy." – (NCETM website)

At Cop Lane we have a core set of principles and beliefs for achieving mastery in mathematics. This includes a belief that all pupils are capable of understanding and doing mathematics. Pupils are neither "born with the maths gene" or "just no good at maths."

With good teaching, appropriate resources, effort and a "can do" attitude all children can achieve and enjoy mathematics. Mathematics is mathematics and the key ideas and building blocks are important for everyone.

Mastery is not just being able to memorise key facts and procedures and to answer test questions accurately and quickly. Mastery involves

knowing why as well as knowing that and knowing how. It means being able to use one's knowledge appropriately, flexibly and creatively and to apply it in new and unfamiliar situations.

For all maths concepts teachers need to ensure that children are "challenged through being offered rich and sophisticated problems." After developing fluency, children need to show that they can apply their knowledge in mathematics and then move on even further to prove they have mastered the concept.

Our Mathematics in Mastery curriculum/Implementation:

In Years 1-6 and in EYFS we have developed our curriculum using the White Rose Hub scheme of work to help teachers and learners to achieve a secure and deep understanding of each Mathematical Concept. It is designed to give us the opportunity to address key points individually, ensure that children have a secure and deep understanding of those points, before offering the opportunity to "go deeper" within them.

In Early Years and where appropriate in Year 1 the principles of the EYFS Framework will be followed, enabling us to deliver a curriculum that embeds mathematical thinking and talk.

Children have the opportunity to "Explore Maths" and develop their understanding of Mathematical concepts through play.

The White Rose materials support the ethos of the EYFS whilst at the same time enabling teachers to create a mathematically rich curriculum. Additionally, it encourages that key mathematical concepts are revisited and developed further across the year.

Questioning:

Questioning is the key to success in all our mathematics sessions and children will be continually asked “Convince me!” and other higher order questions in order to develop their mathematical thinking and language.

Adaptation and support:

“The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils’ understanding and their readiness to progress to the next stage.

Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.” – (National curriculum 2014)

At Cop Lane we follow a mastery curriculum and in line with the National Curriculum document ensure that most children move at broadly the same pace. However, there can still be a wide range of attainment in the class.

We aim to:

• Establish a classroom climate where all pupils feel that they can contribute, and which secures their motivation and concentration.

• Develop an “I can do it!” attitude.

• More able pupils are challenged through more demanding problems which deepen their knowledge of the same content rather than being moved onto content from future year groups.

• Pupils’ difficulties and misconceptions are identified through immediate formative assessment and addressed with rapid intervention.

Focus on depth: Deepen understanding before accelerating content coverage.

All pupils benefit from deepening their conceptual understanding of mathematics, regardless of whether they've previously struggled or excelled.

Pupils must be given time to fully understand, explore and apply ideas, rather than accelerate through new topics. This approach enables pupils to truly grasp a concept, and the challenge comes from investigating it in new, alternative and more complex ways.

Challenging pupils through deeper learning

"The Mathematical Association has also argued the need for the most able students to be routinely expected to master essentially the same material as their peers – but more robustly, fluently and deeply, and with a greater emphasis on making connections. They should also focus on communicating mathematically and on developing better problem solving skills both within and beyond mathematics." Raising the bar: developing able young mathematicians, (ACME, 2013 p. 2)

Our Vision for more able pupils:
A more able child is any child who is attaining beyond their 'age related expectations'. This means they are achieving at a higher standard within their own year group expectations. Higher attaining pupils will be predominately supported by their class teachers and given activities that allow them to gain further 'mastery' of their learning by applying it in different ways.

Examples of strategies include:

- Questioning – targeting individuals or groups, open questions, encouraging pupils to explain strategies and methods to each other
- Teaching focused at times on individuals/groups while others work independently
- Providing resources to support or extend pupils
- Open-ended tasks – investigations, problems
- Pre teaching or same day interventions

Mastery Teaching and Learning:

In every Mathematics lesson the following should be present:

✓ "Quality first" teaching; tailored to meet the needs of the learners in each class, and immediate intervention to address gaps in learning where necessary,

✓ Resilient learners with Growth Mindsets and a "We Can" attitude to Mathematics, whatever their previous level of attainment,

✓ Teachers using high-quality questioning to explore children's understanding and develop it further,

✓ Teachers making use of misconceptions to further understanding of key concepts,

✓ Teachers using a range of methods to explore key Mathematical concepts which appeal to pupils' different styles of learning, employing concrete/pictorial/abstract representations of Mathematical concepts,

✓Learners being given the opportunity, through careful planning, to "go deeper" in mathematical concepts,

✓Pupils learning together,

✓Concrete, Pictorial and Abstract approach,

✓Children accessing apparatus to support their learning,

✓ Development of fluency, reasoning and solving,

✓Opportunities for children to revisit and build on prior learning.

Assessment and Feedback:

• In line with the marking and feedback policy, at the end of each lesson, the teacher makes a judgment of:

✓ - learning objective met with support ✓✓ - learning objective met independently,

• Teachers will build in regular opportunities to formatively assess children during each lesson,

• In an addition to teacher assessment, each term, year groups 1-6 may use an assessment paper provided by the White Rose Hub. These can

be completed in “formal" conditions, one to one, in small groups or in multiple sittings, depending on the age and maturity of the children,

• Any assessments are to be used FORMATIVELY to inform future planning,

• Any assessments sit alongside ongoing Teacher assessment as a basis for making SUMMATIVE judgments on pupils’ attainment and progress.

Inclusion:

Each child will have equal entitlement to all aspects of the Maths curriculum and to experience the full range of Maths activities. Therefore, in delivering Maths, care will be taken to ensure that a variety or learning styles are accessed and teaching methods adopted. Intervention groups will take place both within the Maths lesson and outside; these sessions may be delivered by the teacher or teaching assistant and may involve individual or small group work, accessing both ends of the learning spectrum.

Special Educational Needs

Children with SEND are normally taught within the daily mathematics lesson. All children are given support and scaffolding to help them make progress and access learning. Some children are also on PIVATS to give them small steps in mathematical progress. When additional staff are available to support groups or individual children they may withdraw small groups to use intervention materials.

Equal Opportunities

Within the daily mathematics lesson teachers not only provide activities to support children who find mathematics difficult, but also activities that provide appropriate challenges for children who are high achievers in mathematics.

Same day interventions:

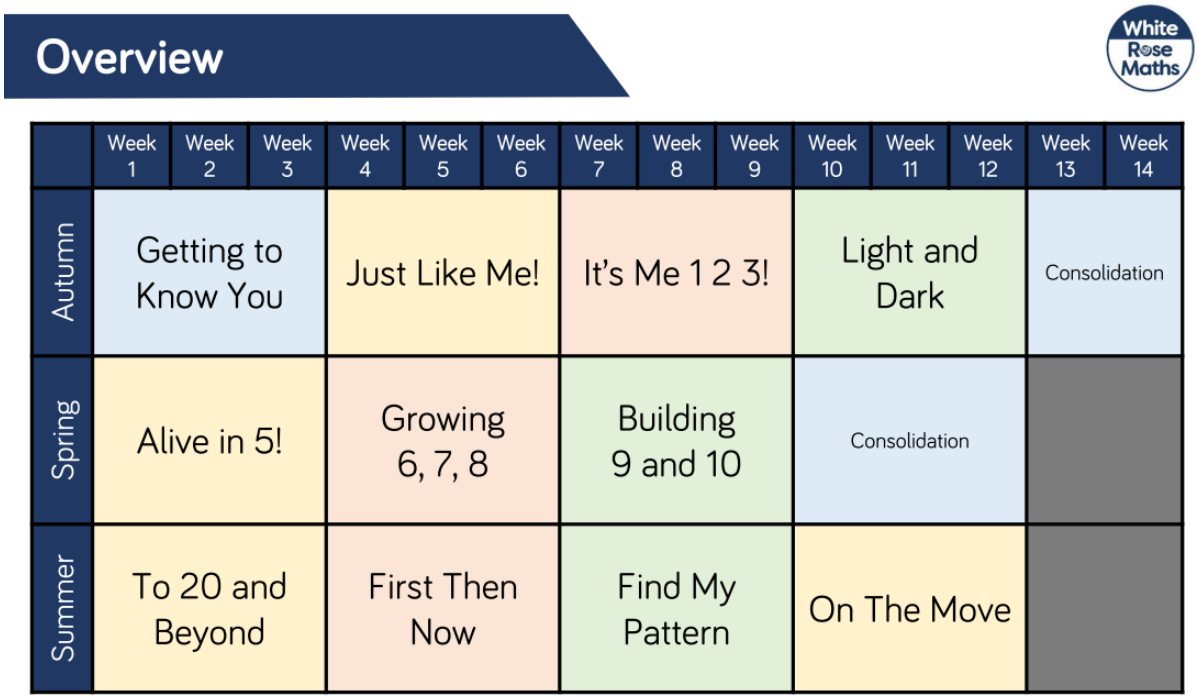
Same day intervention is designed to enable pupils to “keep up” rather than “catch up”. It should address any points in the lesson that were not understood in order that all pupils are ready for the next lesson. (NCETM)

Same day interventions will be timetabled into the day:

- Children who have not quite met the learning intention should be identified during the lesson,
- The intervention work should be based on the lesson that day,
- There will be some children who will need additional support and will receive separate booster interventions (see termly provision mapping).

Curriculum overview:

EYFS:



Autumn

Week 1	Week 2	Week 3		Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Getting to Know You			Phase	Just Like Me!			It's Me 1 2 3!			Light and Dark		
Opportunities for settling in, introducing the areas of provision and getting to know the children.			Number	Match and Sort Compare Amounts			Representing 1, 2 & 3 Comparing 1, 2 & 3 Composition of 1, 2 & 3			Representing Numbers to 5. One More and Less.		
Key times of day, class routines. Exploring the continuous provision inside and out. Where do things belong? Positional language.			Measure, Shape and Spatial Thinking	Compare Size, Mass & Capacity Exploring Pattern			Circles and Triangles Positional Language			Shapes with 4 Sides. Time		

Spring

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9
Phase	Alive in 5!			Growing 6, 7, 8			Building 9 & 10		
Number	Introducing zero Comparing numbers to 5 Composition of 4 & 5			6, 7 & 8 Combining 2 amounts Making pairs			Counting to 9 & 10 Comparing numbers to 10 Bonds to 10		
Measure, Shape and Spatial Thinking	Compare Mass (2) Compare Capacity (2)			Length & Height Time			3d-shapes Spatial Awareness Patterns		

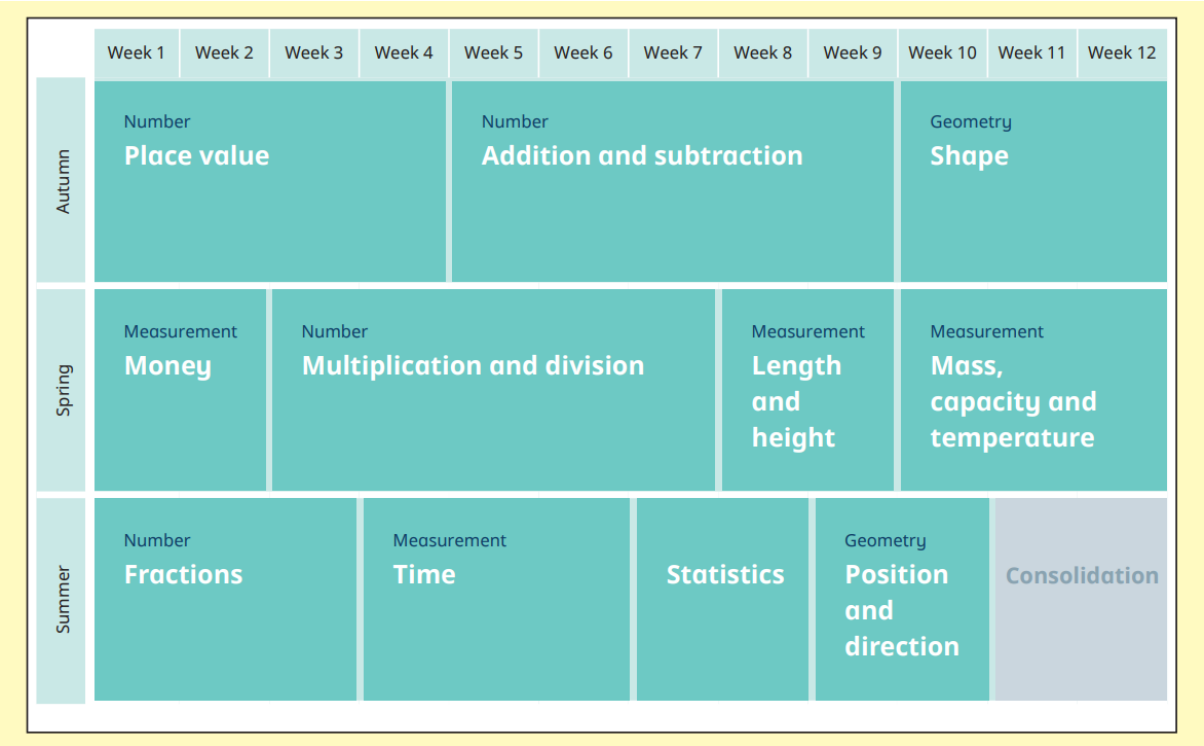
Summer

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Phase	To 20 and Beyond			First Then Now			Find my Pattern			On the Move		
Number	Building Numbers Beyond 10 Counting Patterns Beyond 10			Adding More Taking Away			Doubling Sharing & Grouping Even & Odd			Deepening Understanding Patterns and Relationships		
Spatial Thinking	Spatial Reasoning (1) Match, Rotate, Manipulate			Spatial Reasoning (2) Compose and Decompose			Spatial Reasoning (3) Visualise and Build			Spatial Reasoning (4) Mapping		

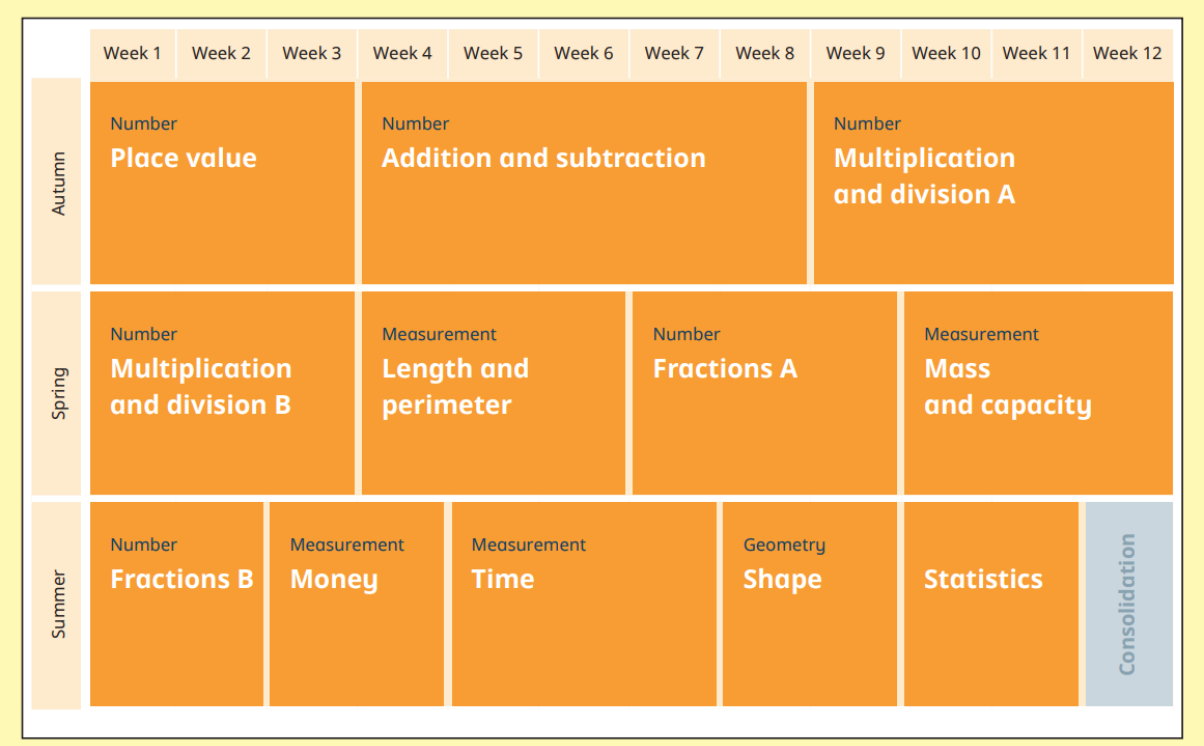
Year 1:

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number **Place value (within 10)**					Number **Addition and subtraction (within 10)**					Geometry **Shape**	Consolidation
Spring	Number **Place value (within 20)**			Number **Addition and subtraction (within 20)**			Number **Place value (within 50)**		Measurement **Length and height**		Measurement **Mass and volume**	
Summer	Number **Multiplication and division**			Number **Fractions**		Geometry **Position and direction**	Number **Place value (within 100)**		Measurement **Money**	Measurement **Time**		Consolidation

Year 2:


Week 1
Week 2
Week 3
Week 4
Week 5
Week 6
Week 7
Week 8
Week 9
Week 10
Week 11
Week 12
Autumn
Number
Place value
Number
Addition and subtraction
Geometry
Shape
Spring
Measurement
Money
Number
Multiplication and division
Measurement
Length and height
Measurement
Mass, capacity and temperature
Summer
Number
Fractions
Measurement
Time
Statistics
Geometry
Position and direction
Consolidation

Year 3:


Week 1
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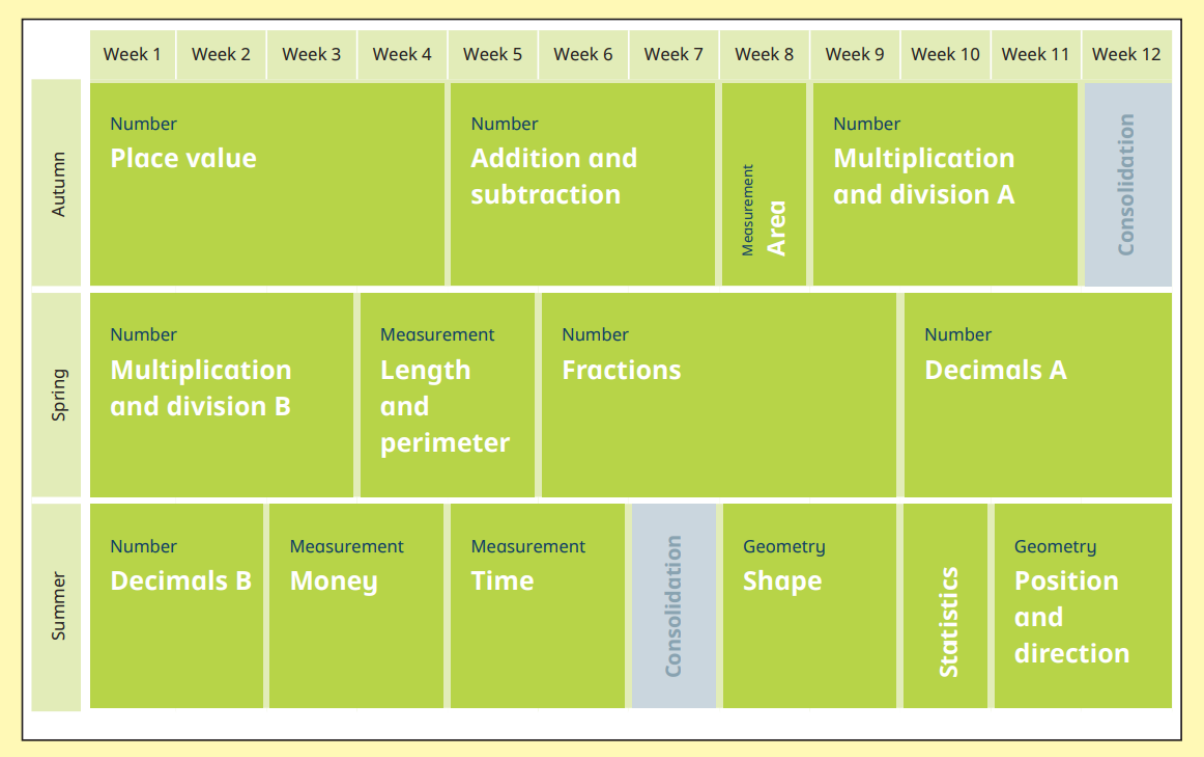
Week 5
Week 6
Week 7
Week 8
Week 9
Week 10
Week 11
Week 12
Autumn
Number
Place value
Number
Addition and subtraction
Number
Multiplication and division A
Spring
Number
Multiplication and division B
Measurement
Length and perimeter
Number
Fractions A
Measurement
Mass and capacity
Summer
Number
Fractions B
Measurement
Money
Measurement
Time
Geometry
Shape
Statistics
Consolidation

Year 4:


Week 1
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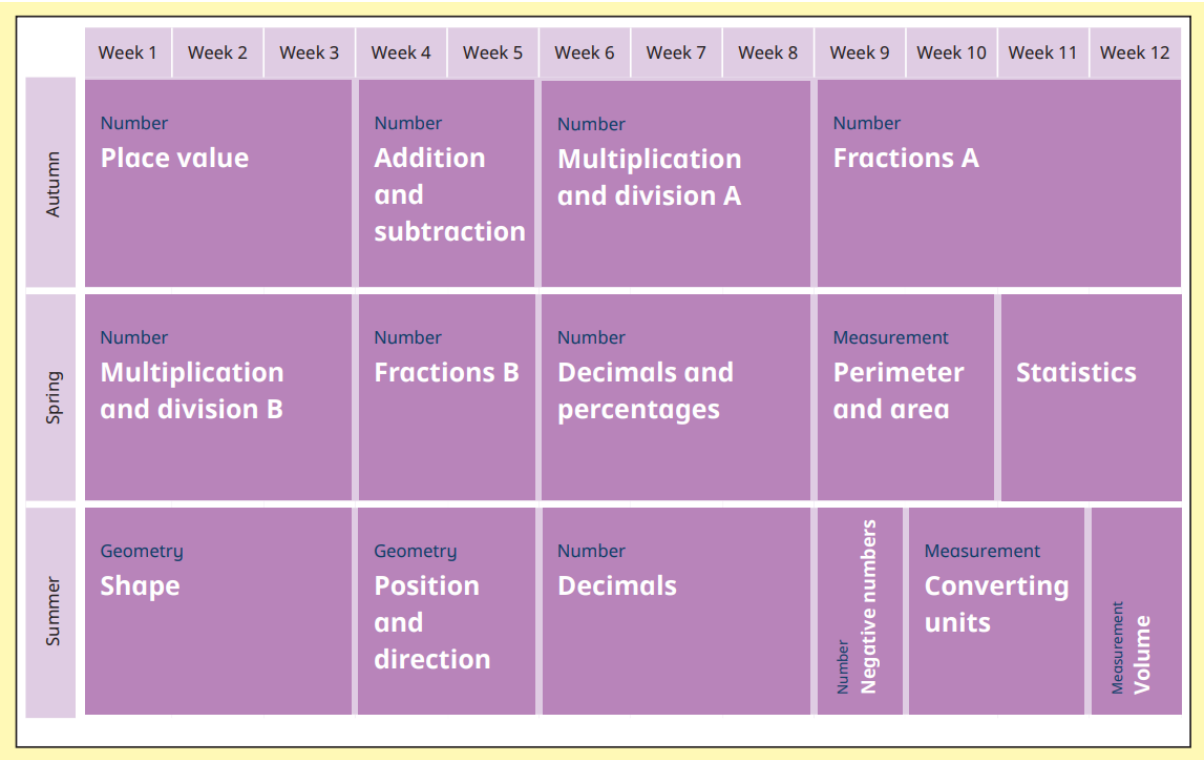
Week 9
Week 10
Week 11
Week 12
Autumn
Number
Place value
Number
Addition and subtraction
Measurement
Area
Number
Multiplication and division A
Consolidation
Spring
Number
Multiplication and division B
Measurement
Length and perimeter
Number
Fractions
Number
Decimals A
Summer
Number
Decimals B
Measurement
Money
Measurement
Time
Consolidation
Geometry
Shape
Statistics
Geometry
Position and direction

Year 5:


Week 1
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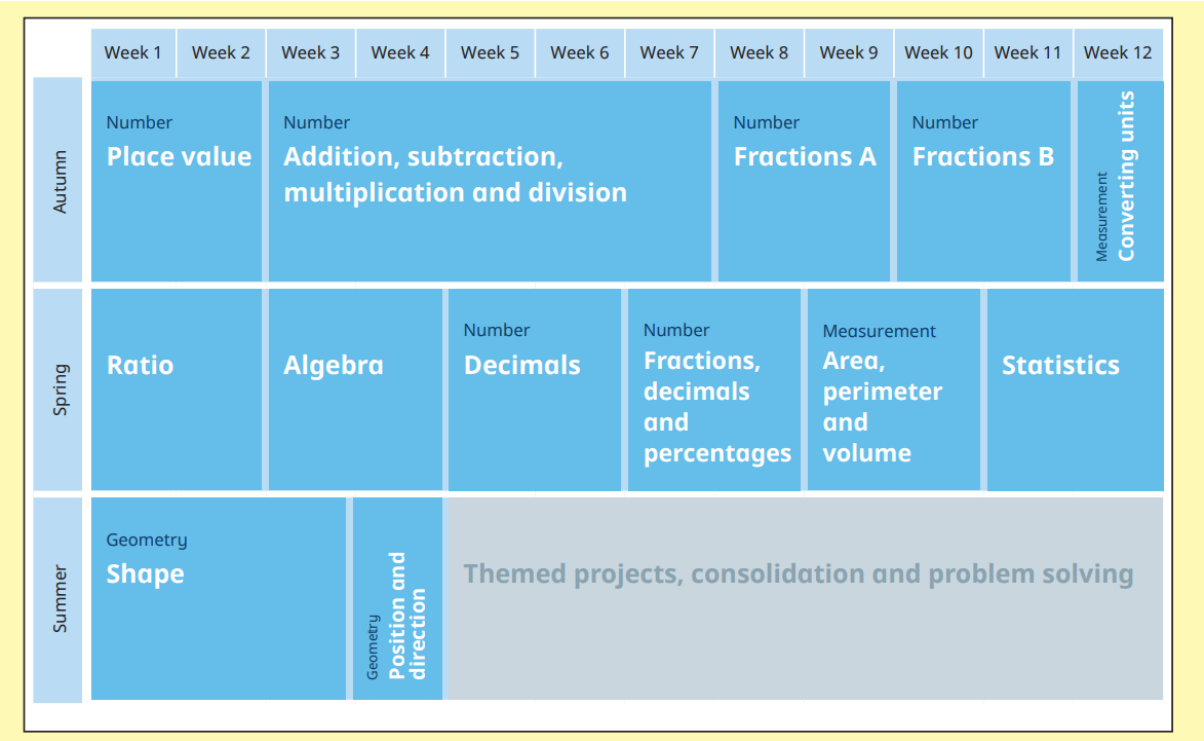
Week 5
Week 6
Week 7
Week 8
Week 9
Week 10
Week 11
Week 12
Autumn
Number
Place value
Number
Addition and subtraction
Number
Multiplication and division A
Number
Fractions A
Spring
Number
Multiplication and division B
Number
Fractions B
Number
Decimals and percentages
Measurement
Perimeter and area
Statistics
Summer
Geometry
Shape
Geometry
Position and direction
Number
Decimals
Number
Negative numbers
Measurement
Converting units
Measurement
Volume

*Year 6:



*The ordering of some of the Y6 units may be changed to meet the needs of the children in working towards the end of KS2 assessments.

This policy was adopted by the Governing Body in December 2022

It will be reviewed again in December 2025

(NB recommendation – on a three-yearly cycle)

Signed: *S. Hodgson*