MATHEMATICS

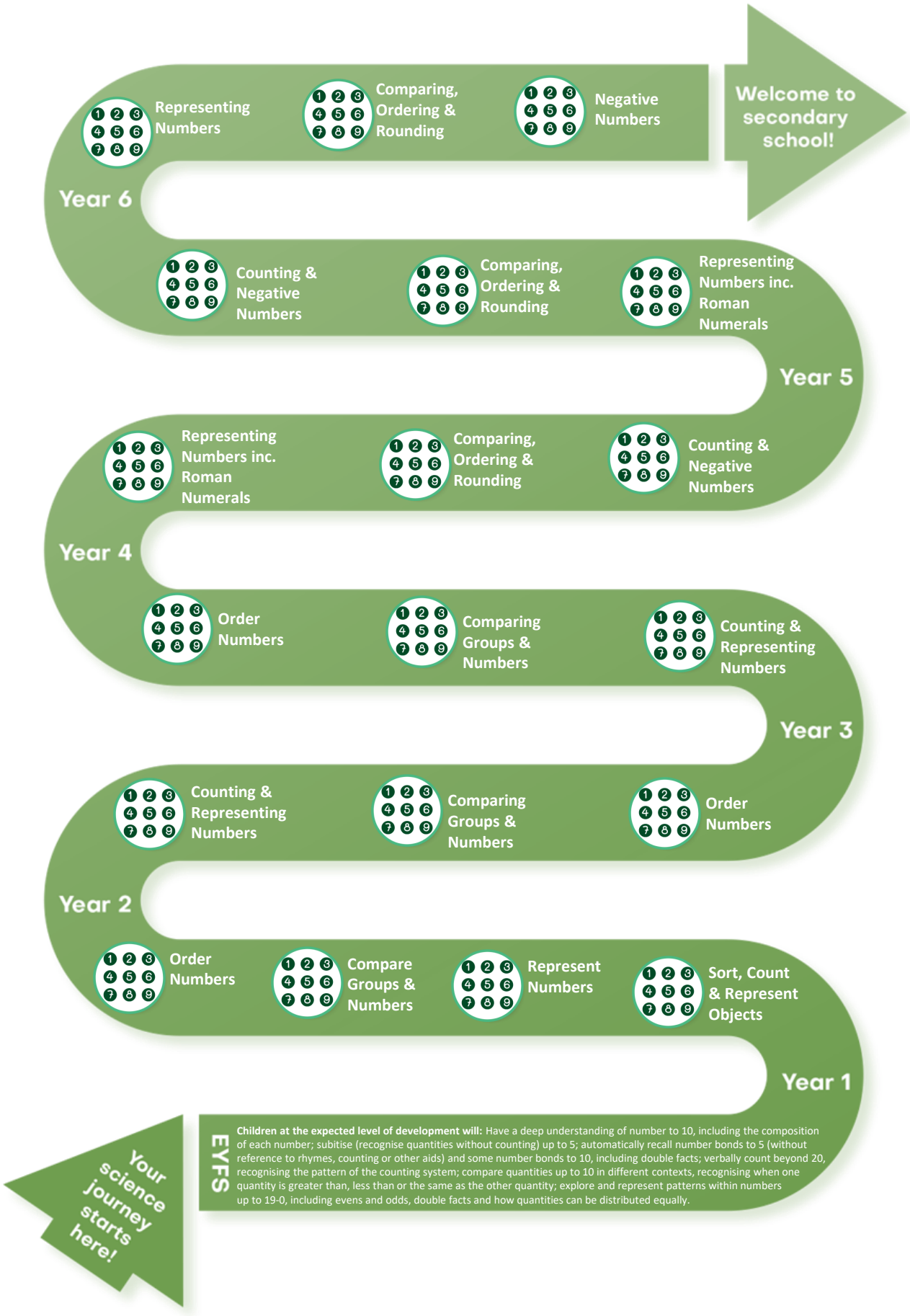
CURRICULUM: MATHS

St. John the Evangelist Catholic Primary School

Christ at the Centre, Children at the Heart

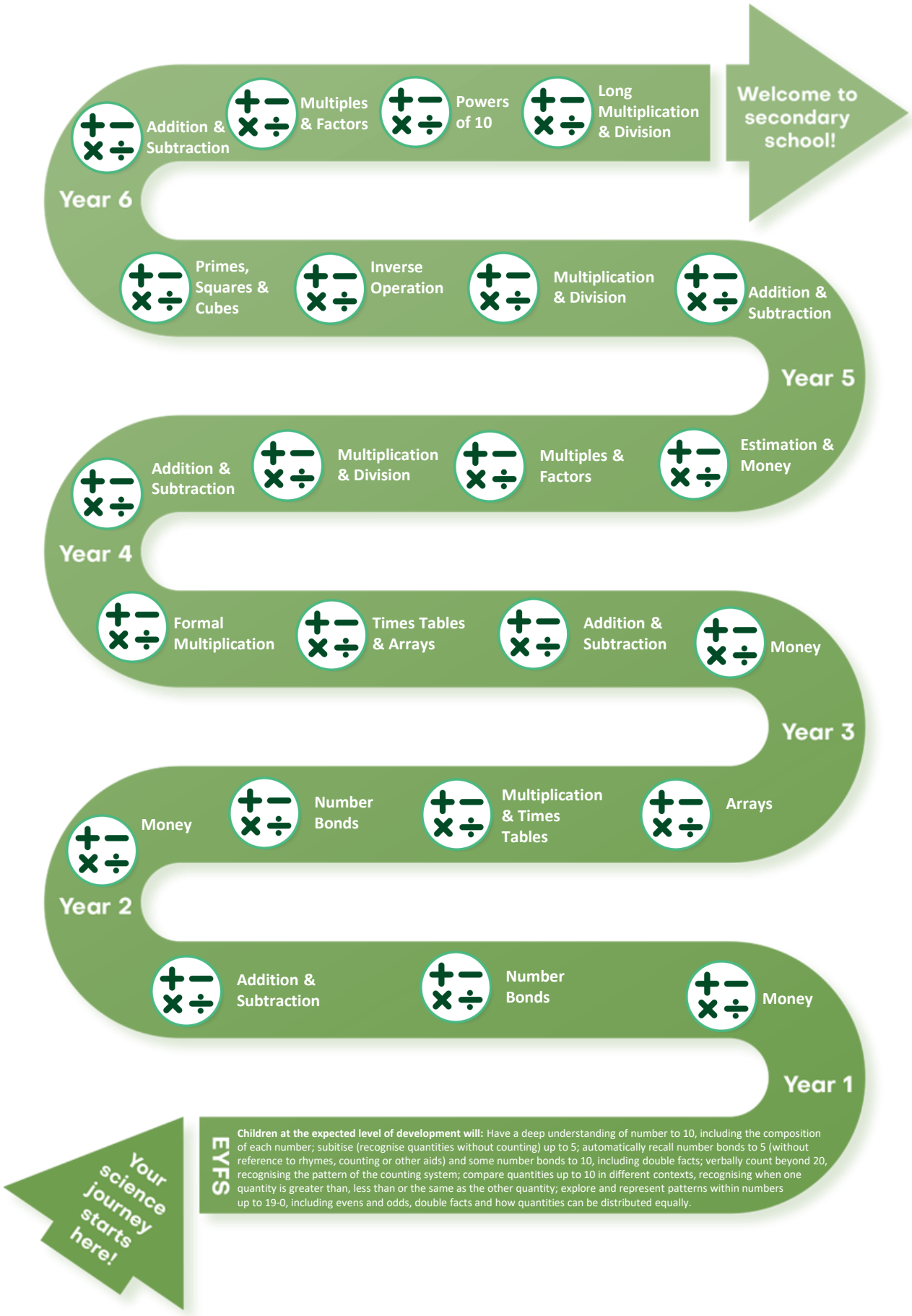
CURRICULUM NARRATIVE

Number and Place Value



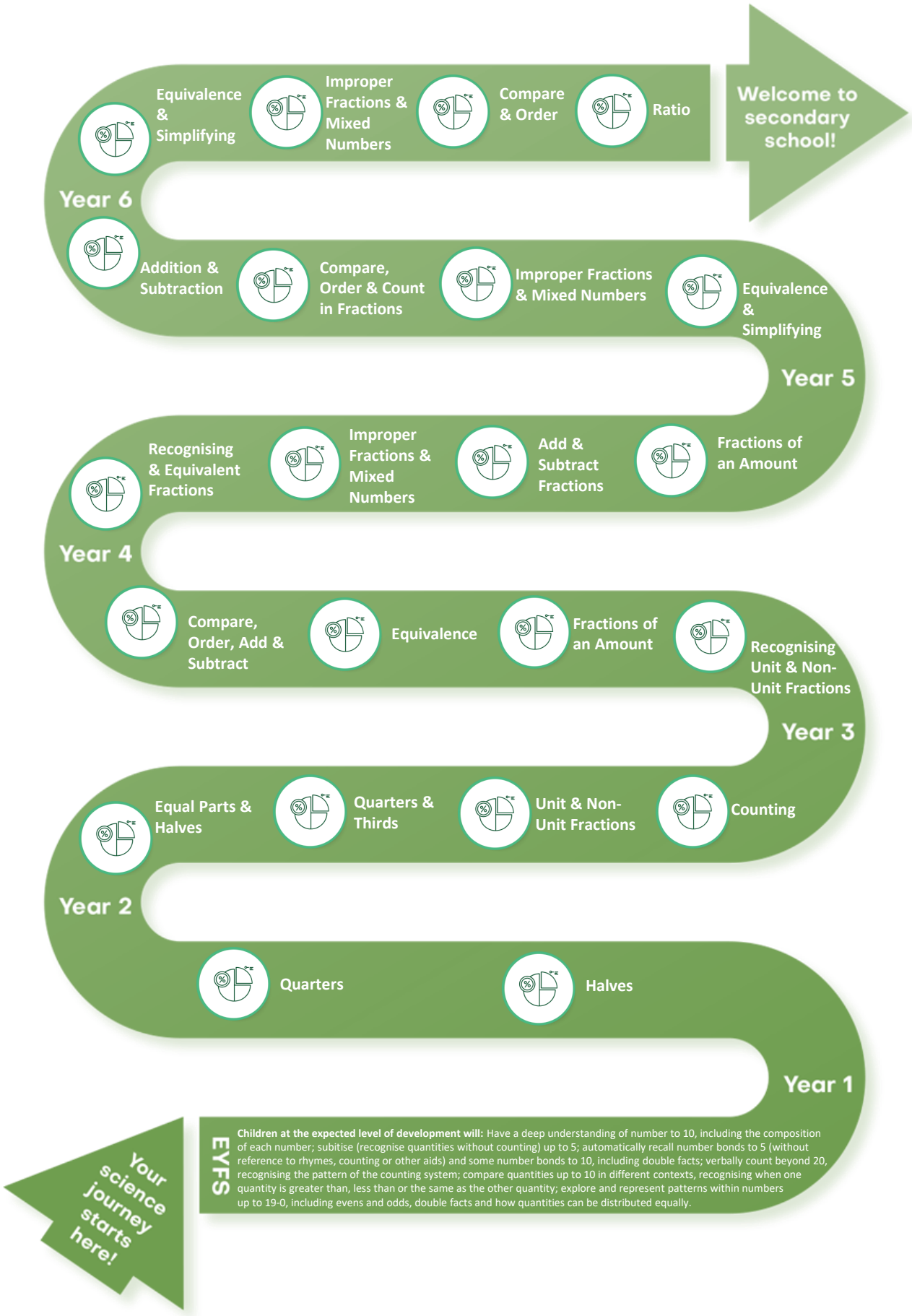
CURRICULUM NARRATIVE

Four Operations



CURRICULUM NARRATIVE

Fractions, Decimals and Percentages



CURRICULUM NARRATIVE

Measurement

Year 6
- Converting Units
- Perimeter, Area & Volume
- Measure Consolidation

Welcome to secondary school!

Year 5
- Converting Units & Volume
- Time
- Length, Perimeter & Area

Year 4
- Length Perimeter & Area
- Time

Year 3
- Mass & Capacity
- Time
- Length & Height

Year 2
- Length & Height
- Time
- Mass, Capacity & Temperature

Year 1
- Weight & Volume
- Time
- Length & Height

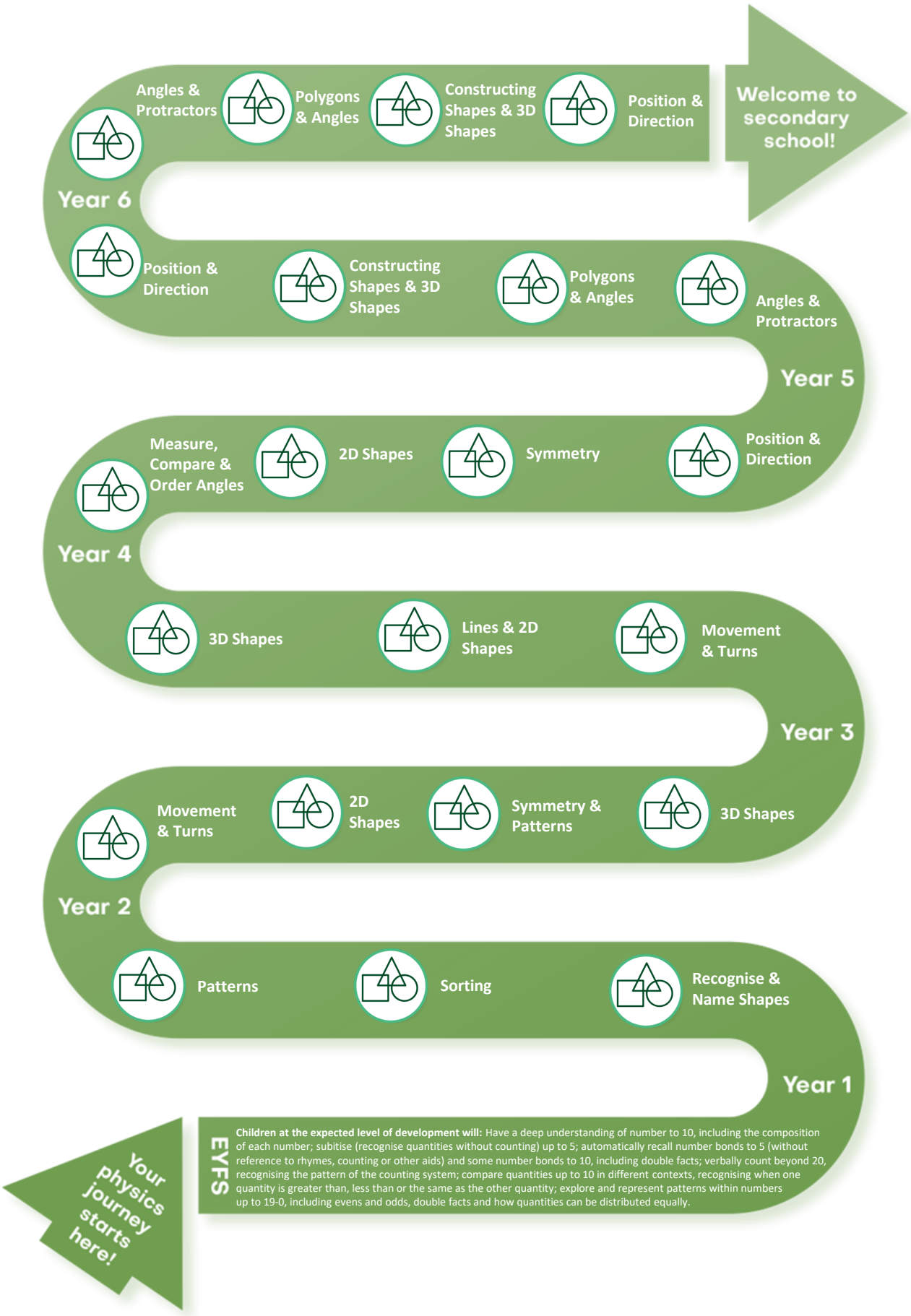
EYFS

Children at the expected level of development will: Have a deep understanding of number to 10, including the composition of each number; subitise (recognise quantities without counting) up to 5; automatically recall number bonds to 5 (without reference to rhymes, counting or other aids) and some number bonds to 10, including double facts; verbally count beyond 20, recognising the pattern of the counting system; compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity; explore and represent patterns within numbers up to 19-0, including evens and odds, double facts and how quantities can be distributed equally.

Your biology journey starts here!

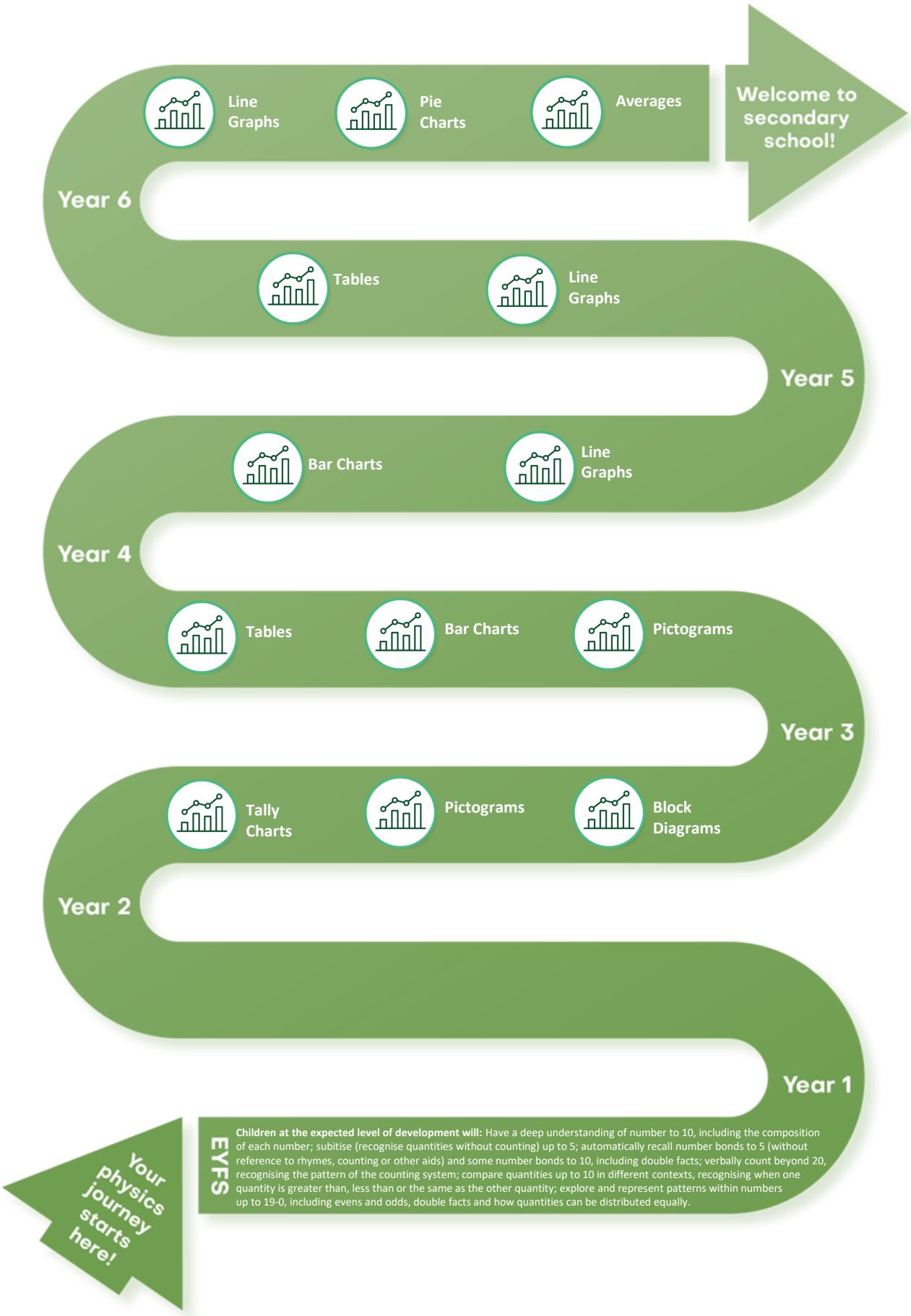
CURRICULUM NARRATIVE

Geometry



CURRICULUM NARRATIVE

Statistics



CURRICULUM NARRATIVE

Mathematics Yearly Overview

EYFS	**Children at the expected level of development will: Have a deep understanding of number to 10, including the composition of each number; subitise (recognise quantities without counting) up to 5; automatically recall number bonds to 5 (without reference to rhymes, counting or other aids) and some number bonds to 10, including double facts; verbally count beyond 20, recognising the pattern of the counting system; compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity; explore and represent patterns within numbers up to 19-0, including evens and odds, double facts and how quantities can be distributed equally.**

Area of Mathematics	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
Number & Place Value	Numbers to 20	Numbers to 100	Numbers to 1000	Numbers to 10000	Numbers to 100000	Numbers to 1000000 & Beyond
Four Operations	Addition & Subtraction Multiplication & Division	Addition & Subtraction Multiplication & Division	Addition & Subtraction Multiplication & Division	Addition & Subtraction Multiplication & Division	Addition & Subtraction Multiplication & Division	Addition & Subtraction Multiplication & Division
Fractions, Decimals & Percentages	Fractions	Fractions	Fractions	Fractions Decimals	Fractions, Decimals & Percentages	Fractions, Decimals & Percentages Ratio
Measurement	Length & Height Time Weight & Volume	Mass, Capacity & Temperature	Length & Height Time Mass & Capacity	Length, Perimeter & Area	Length, Perimeter & Area Converting Units & Volume	Perimeter, Area & Volume
Geometry	Shape Position & Direction	Properties of Shape Position & Direction	Shape & Perimeter	Properties of Shape Position & Direction	Properties of Shape Position & Direction	Properties of Shape Position & Direction
Statistics	-	Statistics	Statistics	Statistics	Statistics	Statistics

CURRICULUM NARRATIVE

Threshold Concepts in Mathematics	
	**Know and use number**: This concept involves understanding the number system and how they are used in a wide variety of mathematical ways.
	**Add and subtract**: This concept involves understanding both the concepts and processes of addition and subtraction.
	**Multiply and divide**: This concept involves understanding both the concepts and processes of multiplication and division.
	**Use fractions**: This concept involves understanding the concept of part and whole and ways of calculating using it.
	**Understand the properties of shapes**: This concept involves recognising the names and properties of geometry shapes and angles.
	**Describe position, direction and movement**: This concept involves recognising various types of mathematical movements.
	**Use measures**: This concept involves becoming familiar with a range of measures, devices used for measuring and calculations.
	**Use statistics**: This concept involves interpreting, manipulating and presenting data in various ways.
	**Use algebra**: This concept involves recognising mathematical properties and relationships using symbolic representation

CURRICULUM NARRATIVE

Read like a Mathematician

Why do mathematicians read:
To base their research

To understand new concepts

To follow logical reasoning

To solve problems

To communicate ideas

To engage with the mathematical community

Write like a Mathematician

Be clear, precise, logical and concise making sure you use correct mathematical vocabulary

Use complete sentences with mathematical language

Follow a clear structure: state what you are doing, how you are doing it and why it works

Justify your steps by supporting your answer with known facts.

Threshold Concepts

The position of a digit in a number determines its value.

Zero is not a 'nothing'. It is a place holder and it has a value.

The equals sign means equality, not an answer.

Recognise that numbers are structured, not random.

Moving from additive thinking to multiplicative thinking.

Understanding part-whole relationships.

The nature of mathematical proof and reasoning by justifying.

The idea of inverse relationships.

Units and measurements are scalable concepts of continuous nature.

Fractions are numbers and have their own place on the number line.

At the heart of the mathematics curriculum is the belief that every child is a mathematician – capable of thinking deeply, reasoning clearly and solving problems creatively. Mathematics is the doorway to independence and a necessity if we are to create life-long learners. Pupils can develop a sense of excitement and curiosity about the patterns and connections they discover. In the EYFS, mathematics has its own area of assessment, where pupils develop a strong grounding in number and are presented with frequent opportunities to build and apply their understanding. At KS1, the principal focus of mathematics is to develop confidence and mental fluency. In LKS2, pupils should develop efficient written and mental methods and perform calculations with increasingly larger numbers. Finally, in UKS2, the focus is on extending their understanding of the number system and place value. Children are taught to apply their skills to increasingly more challenging problems and justify their reasoning. By the end of Year 6, pupils should be fluent in written methods for all four operations including long multiplication and division, working with fractions, decimals and percentages.

The Journey Begins…

Mathematics is more than a subject – it's a language for understanding and making sense of the world. From the moment a child begins their mathematical journey, they are developing skills that shape how they think, solve problems and make decisions through life. Early experiences with number, pattern and shape lay the foundation for logical thinking, perseverance and confidence. Whether counting steps, sharing fairly or spotting patterns in nature, mathematics empowers children to make sense of their environment. As they grow, it becomes a vital tool for independence, creativity and critical thinking – preparing them not just for tests, but for the countless real-world situations where mathematical thinking matters. The journey begins with curiosity and wonder and leads to a lifetime of possibility.

CURRICULUM NARRATIVE

The mathematics curriculum is carefully sequenced to develop fluency, reasoning and problem-solving across the key areas: Number, Calculation, Fractions, Measurement, Geometry and Statistics. Underpinning these broad areas are threshold concepts – the powerful, often transformative ideas that shape mathematical understanding over time.

Number and Place Value
In EYFS and KS1, pupils begin with counting, comparing quantities and recognizing numerals. They develop their understanding of the number system through activities involving grouping, pattern spotting, and using concrete resources. In KS2, children deepen their understanding of place value, moving onto larger numbers, decimals and rounding. They are introduced to the concept of negative numbers and the structure of the number system across number lines and place value charts.

Calculation
In KS1, children use concrete and pictorial models to explore the part-whole relationships, number bonds and counting on/back. Multiplication is introduced through repeated addition and grouping, while division is seen as sharing. In LKS2, written methods are introduced, grounded in their deep understanding of place value. Inverse relationships are made explicit and children begin to use them to check their answers. Multiplication tables are memorized and applied using arrays, bar models and area models to support understanding. Finally, in UKS2, pupils manipulate increasingly complex numbers, apply estimation and solve multi-step problems with reasoning and justification. Formal written methods are used for long multiplication and division. Pupils explore factors, multiples and prime numbers, connecting multiplicative reasoning to problem-solving and algebraic thinking.

Fractions, Decimals and Percentages
Pupils learn fractions in KS1 as parts of shapes and sets e.g. ½ and ¼. In LKS2, fractions are placed on number lines and compares as quantities. Equivalence is introduced using visual models. Pupils begin to link fractions to decimals and percentages in UKS2, performing calculations with them and applying proportional reasoning in real-life contexts like scaling and ratio.

Measurement
In KS1, pupils compare lengths, mass and time using non-standard and standard units. In KS2, pupils use scales, convert between units, calculate area and perimeter and volume. They begin to select appropriate units and apply measurement to practical problems.

Geometry
Pupils are first introduced to shapes in EYFS, using specific mathematical language to describe them. In Ks1, pupils identify, name and describe the properties of 2D and 3D shapes. They explore symmetry and simple position. Learners classify shapes in KS2 by their properties, measuring angles and drawing them with increasing accuracy. They reason about shape transformations and begin to manipulate shapes through transformations including translations and reflections.

Statistics
Statistics are introduced through pictograms and simple tables to represent data in KS1. They then move on to read and construct bar charts, line graphs and interpret more complex data sets in KS2. This area supports oracy and reasoning, as pupils learn to ask and answer questions based on data.

Oracy
Across all strands of mathematics, oracy is embedded to help pupils verbalise thinking, justify strategies and build understanding through discussion. Through sentence stems, partner talk, and structured reasoning tasks, children learn to explain methods clearly, use correct mathematical terminology and reflect on and critique the reasoning of others.

All of these threshold concepts are revisited and deepened throughout the curriculum, not taught in isolation. For example, place value begins with understanding ten as a group and evolves into manipulating decimals. The equals sign moves from getting the answer to understanding equivalence and balancing equations. Multiplicative reasoning grows from grouping to complex ratio and proportional reasoning by Year 6.

CURRICULUM NARRATIVE

Curriculum Intent

At St. John the Evangelist Catholic Primary, our mathematics curriculum is designed to empower all learners with the skills, knowledge and confidence to become fluent, reasoning and problem-solving mathematicians. We aim to develop a deep conceptual understanding of mathematical ideas alongside the ability to articulate thinking clearly and precisely.

Oracy is at the heart of our curriculum. We believe that talk is a powerful tool for learning in mathematics. By explicitly developing mathematical language and communication skills, we ensure that pupils can explain their reasoning, justify their methods and engage in rich mathematical dialogue. Our goal is not only for our pupils to 'do' mathematics but also to think and talk like mathematicians.

Curriculum Implementation

At St. John's, our curriculum follows a coherent, mastery-based approach, with small, connected steps that build on prior knowledge and unlock future learning. To support the children's learning, we use White Rose Small Steps to structure our learning journey whilst providing a progressive curriculum which focuses on mathematical thinking and language, problem-solving and reasoning and guarantees that our children are always building upon what they have already learned. Concepts are taught through the concrete-pictorial-abstract (CPA) model to develop a deeper understanding of key mathematical concepts.

We plan regular opportunities for mathematical discussion particularly through the use of 'goal-free' activities and whole-class reasoning. We also apply our signature pedagogy to this subject by breaking down learning within the lesson by using, 'My turn, our turn, your turn'. We prioritise mathematical terminology, ensuring key terms are introduced, modelled and regularly revisited.

More recently, we have had a renewed focus on basic arithmetic and times table skills as well as using retrieval practice to support the children in knowing more and remembering more.

In order to achieve the above, we have a continuity of lesson design across the school which includes varied fluency questions, modelled problem-solving and reasoning, working in triads to tackle additional problems and independent work. Computational tools and various representations are used in each lesson to support learning, moving from concrete to pictorial to abstract as the lesson and sequence of learning progresses.

Curriculum Impact

The teaching of mathematics is of the upmost importance as we know that it is an essential skill that will impact on the rest of our pupils' lives. We wholeheartedly believe that all of our children can succeed in mathematics.

The impact we hope to achieve is to send our children to the next stage of their learning as self-assured, resilient problem-solvers. Throughout our their time with us and beyond, our children will:

- Have the firm belief that they can succeed at mathematics and welcome the challenge to do so;
- Become confident, fluent and articulate mathematicians;
- Develop a fascination and love of numbers;
- Solve problems by reasoning;
- Explain their mathematical thinking clearly and apply their mathematical skills in a wide range of situations using accurate mathematical language.
- Engage in meaningful dialogue about mathematical ideas and strategies.

To achieve this aim, we have a 'mastery mathematics' approach which means that our staff have high expectations of all children and the belief that every child can feel successful and confident in their learning.

We measure the impact of our mathematics curriculum through:

- Pupil outcomes in formative and summative assessments;
- Pupil ability to verbalise and justify their reasoning;
- Learning walks and pupil voice that show rich mathematical talk and engagement;
- A culture where pupils are not only proficient in calculations but can also explain the 'why' behind the 'what'.

By embedding oracy within maths, we nurture thoughtful, articulate learners who are prepared for the mathematical demands of the wider world.

SEND

The BHCET History curriculum has been designed to be delivered to the whole class. However, the tasks are adapted by class teachers to meet the needs of individual children. To ensure pupils with SEND achieve well, they should be exposed to the same learning as their peers; however, the way they evidence their learning through the tasks can be adapted.

Through scaffolding, tasks can be adapted to ensure all learners can access and evidence the same threshold concepts and learning objectives as their non-SEND counterparts. Scaffolding strategies can include providing sentence starters, a writing frame, vocabulary banks, sorting and matching cards or visual prompts. Reactive or proactive adaptations can make the BHCET curriculum accessible and achievable for all.

Other strategies of adaptation are outlined through the EEF's Five-a-Day principles, which include explicit instruction, metacognitive strategies, flexible grouping and the use of technology:

Scaffolding

'Scaffolding' is a metaphor for temporary support that is removed when it is no longer required. Initially, a teacher would provide enough support so that pupils can successfully complete tasks that they could not do independently. This requires effective assessment to gain a precise understanding of the pupil's current capabilities.
Examples: Support could be visual, verbal, or written. Writing frames, partially completed examples, knowledge organisers, sentence starters can all be useful. Reminders of what equipment is needed for each lesson and classroom routines can be useful. Scaffolding discussion of texts: promoting prediction, questioning, clarification and summarising.

Explicit Instruction

Explicit instruction refers to a range of teacher-led approaches, focused on teacher demonstration followed by guided practice and independent practice. Explicit instruction is not just "teaching by telling" or "transmission teaching" One popular approach to explicit instruction is Rosenshine's 'Principles of Instruction'.
Examples: Worked examples with the teacher modelling self-regulation and thought processes is helpful. A teacher might teach a pupil a strategy for summarising a paragraph by initially 'thinking aloud' while identifying the topic of the paragraph to model this process to the pupil. They would then give the pupil the opportunity to practise this skill. Using visual aids and concrete examples promotes discussion and links in learning.

Cognitive and Metacognitive Strategies

Cognitive strategies are skills like memorisation techniques or subject specific strategies like methods to solve problems in maths. Metacognitive strategies help pupils plan, monitor and evaluate their learning
Examples: Chunking the task will support pupils with SEND – this may be through provision of checklists, instructions on a whiteboard or providing one question at a time. This helps reduce distractions to avoid overloading working memory.
Prompt sheets that help pupils to evaluate their progress, with ideas for further support.

Flexible Grouping

Flexible grouping describes when pupils are allocated to smaller groups based on the individual needs that they currently share with other pupils. Such groups can be formed for an explicit purpose and disbanded when that purpose is met
Examples: Allocating temporary groups can allow teachers to set up opportunities for collaborative learning, for example to read and analyse source texts, complete graphic organisers, independently carry out a skill, remember a fact, or understand a concept. Pre-teaching key vocabulary, is a useful technique.

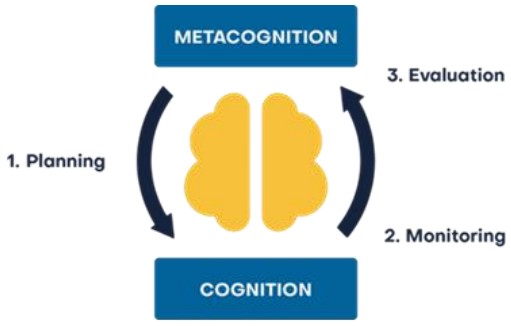
Use of Technology

Technology can assist teacher modelling. Technology, as a method to provide feedback to pupils and/ or parents can be effective, especially when the pupil can act on this feedback.
Examples: Use a visualizer to model worked examples. Technology applications, such as online quizzes can prove effective. Speech generating apps to enable note-taking and extended writing can be helpful.

ASSESSMENT

Assessment comprises two linked processes:

Formative Assessment: provides Assessment **for** Learning. Is a continuous process and an integral part of teaching and learning; informal observations, dialogue/effective use of questioning, consolidation activities, low stakes quizzing, routine marking; and pupil/peer assessment all contribute to the developing profile of progress. When pupils make changes and consider actions to their work, based on the activity, they are 'self-regulating' their work. Self-regulating activities can be termed Assessment **as** Learning. Self-regulated learners are aware of their strengths and weaknesses, and can motivate themselves to engage in, and improve, their learning. Pupils start by **planning** how to undertake a task, working on it while **monitoring** the strategy to check progress, then **evaluating** the overall success.



Metacognitive Regulation Cycle
(EEF Metacognition & Self regulation Guidance)

Summative Assessment: provides Assessment **of** Learning and is a judgement of attainment at key points throughout the year- using past knowledge to measure attainment and progress. Examples of this are standardised tests, tasks and end of term/annual assessments which include a sample of pupil's prior learning.

Assessment is a continuous process which is integral to teaching and learning and:

- Enables an informed judgement to be made about a pupil's understanding, skills, attitude to learning and successful acquisition of knowledge as they move through the curriculum.
- Incorporates a wide range of assessment techniques to be used in different contexts/purposes.
- Is accompanied by **clear assessment criteria** that enables effective marking and feedback, a reliable progress evaluation to be given and demonstrates clearly what a pupil must do to improve.
- Provides feedback recognising achievement, increasing pupil confidence/motivation.
- Supports learning by making clear to pupils: what they are trying to achieve; what they have achieved; what the learning gaps and misconceptions are and what the next steps in learning are.
- Allows regular subject specific extended writing and access to high quality text/ reading.
- Should be moderated and standardised to ensure **purposeful, meaningful, and timely feedback.**
- Includes feedback to pupils to help them understand what they need to improve, challenging them to achieve their target rather than a grade.

Allows leaders and staff to make timely adaptations to the curriculum.