MATHS

CURRICULUM: MATHS

St Joseph's
Catholic Primary School

Love God, Love Learning, Love One Another.

CURRICULUM NARRATIVE

Welcome to secondary school!

Y5/6 Cycle b

- Place Value
- Addition and Subtraction
- Multiplication and Division
- Fractions
- Decimals
- Fractions, Decimals and %
- Area, Perimeter and Volume
- Converting Units
- Shape
- Position and Direction
- Ratio
- Algebra
- Statistics

Y5/6 Cycle a

- Statistics
- Ratio
- Algebra
- Shape
- Position and Direction
- Area, Perimeter and Volume
- Converting Units
- Place Value
- Addition and Subtraction
- Multiplication and Division
- Fractions
- Decimals
- Fractions, Decimals and %

Y3/4 Cycle b

- Place Value
- Addition and Subtraction
- Multiplication and Division
- Fractions
- Decimals
- Area
- Length and Perimeter
- Mass and Capacity
- Time
- Money
- Shape
- Position and Direction
- Statistics

Y3/4 Cycle a

- Statistics
- Shape
- Position and Direction
- Area
- Length and Perimeter
- Mass and Capacity
- Time
- Money
- Place Value
- Addition and Subtraction
- Multiplication and Division
- Fractions
- Decimals

Y1/2 Cycle b

- Place Value (Within 20)
- Addition and Subtraction
- Place Value (Within 100)
- Addition and Subtraction (Within 100)
- Multiplication and Division
- Fractions
- Shape
- Position and Direction
- Length and Height
- Money
- Time
- Mass, Capacity and Temperature
- Statistics

Y1/2 Cycle a

- Statistics
- Length and Height
- Money
- Time
- Mass, Capacity and Temperature
- Shape
- Position and Direction
- Multiplication and Division
- Fractions
- Place Value (Within 20)
- Addition and Subtraction
- Place Value (Within 100)
- Addition and Subtraction (Within 100)

EYFS

- It's me 1,2,3
- 1,2,3,4,5
- Alive in 5
- Growing 6,7,8
- Building 9 and 10
- To 20 and Beyond
- How Many Now?
- Sharing and Grouping
- Make Connections
- Match, Sort and Compare
- Talk about Measure and Pattern.
- Mass and Capacity
- Length, Height and Time
- Circles and Triangles
- Shapes with 4 sides
- Explore 3D Shapes
- Manipulate, Compose and Decompose
- Visualise, Build and Map

Your Maths journey starts here!

Love God, Love Learning, Love One Another.

CURRICULUM NARRATIVE

Intent

At St Joseph's, we have designed a broad, balanced and progressive curriculum. We aim to ensure all pupils:

•become fluent in the fundamentals of mathematics, so they can develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
•reason mathematically by developing an argument, justification or proof using mathematical language.
•are given opportunities to *solve problems* by applying their mathematics to a variety of problems with increasing sophistication.

Mathematics is an interconnected subject in which pupils move fluently between representations of mathematical ideas. Pupils make rich connections across mathematical ideas to develop fluency, mathematical reasoning, and competence in solving increasingly sophisticated problems.

CURRICULUM NARRATIVE

Implementation

At St Joseph's daily maths lessons are designed using a mastery approach. Mastering maths means pupils acquiring a deep, long-term, secure and adaptable understanding of the subject and begin to apply concepts in many different contexts. Our teaching of mastery is based around the five big ideas representation and structure, mathematical thinking, fluency, variation and coherence.

'White Rose' maths scheme, is used as a basis for our teaching. It focuses on reinforcing number competency, whilst providing opportunities to build reasoning and problem solving into each lesson and encourages each pupil to build confidence and resilience to achieve in maths. A clear and comprehensive overview and a progression of skills, in each strand of mathematics, shows how learning progresses within and across year groups. Small steps for each strand build upon prior knowledge and develop new concepts. A range of concrete, pictorial and abstract ideas are skilfully planned into lessons to develop deep thinking. This allows children to make mathematical connections and move between different contexts and representations.

Within lessons, children are given opportunities to develop their arithmetic skills at the beginning of a lesson. Children solve written calculations or develop fluency in number bonds or times tables. A review of previous learning is then undertaken to 'link' previous and new learning. Mathematical vocabulary is introduced and revisited throughout the lesson. Following this, children are then introduced to a new mathematical concept that develops reasoning and competence when solving incredibly sophisticated problems. It provides children with the opportunity to develop why? and why not? questions. The majority of children progress through the lesson at the same pace with differentiated activities and through individual support. At the end of the lesson, children have the opportunity to reason mathematically and further develop their mathematical vocabulary.

Throughout the maths curriculum children are assessed in a variety of different ways. At St Joseph's, we use formative assessment which takes place day- to- day within the lesson. For a more summative view of where children are succeeding, and require additional support, end of term assessments are carried out. This informs future planning and interventions children may require.

Impact

Children leave St Joseph's Catholic Primary School as happy, confident mathematicians, who have the key skills and knowledge necessary for the next stage of their learning.

The impact of our mathematics curriculum will be measured through:

- The subject lead ensures that the National Curriculum requirements are met
- Pupil outcomes are monitored through deep dives, where evidence is gathered in the following ways: pupil voice interviews, book scrutinies, drop- ins, discussions with staff etc.
- Assessing children's knowledge of key component learning as set out within schemes of work
- Assessing children's understanding of arithmetic and reasoning skills.
- Summative assessment of key concepts (Arithmetic and Reasoning) using GAPS tests (3 x per year).
- Moderation and scrutiny of pupil's books and professional dialogue between teachers to assess the quality of children's learning
- Sharing good practice among staff
- Marking of maths work in books against the school's marking policy
- The maths lead identifies clear next steps, which are determined by a cycle of monitoring, evaluating and reviewing
- Monitoring of progress from year to year ensuring pupils remain 'on track' from their starting point

The maths 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 vocabulary banks, sorting and matching cards or manipulatives. Reactive or proactive adaptations can make the maths 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" A 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.

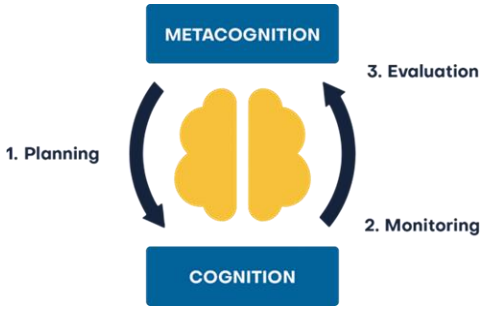
Flexible Grouping
Flexible grouping describes when pupils are allocated to smaller groups based on the individual needs that they currently share with other pupils. Such groups can be formed for an explicit purpose and disbanded when that purpose is met
Examples: Allocating temporary groups can allow 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 <u>linked</u> processes:

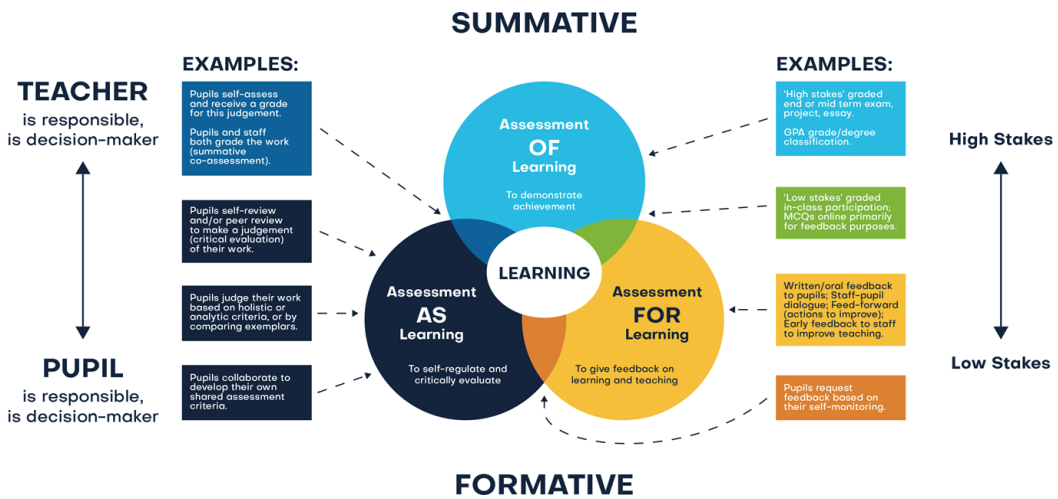
Formative Assessment: provides Assessment **<u>for</u>** Learning. Is a continuous process and an integral part of teaching and learning; informal observations, dialogue/effective use of questioning, consolidation activities, low stakes quizzing, routine marking; and pupil/peer assessment all contribute 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 **<u>as</u>** 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 **<u>of</u>** 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.
•Should be moderated and standardised to ensure **<u>purposeful, meaningful, and timely feedback.</u>**
•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.



BHCET TAF

The BHCET TAF format forms an assessment framework for maths within, across and at the end of the year. This format of assessment provides consistency across current assessment of Writing and Reading within the Trust and links to the structure of assessment judgements, assessing maths at WTS, WTS+, EXS and GDS. This links to the reporting language that is used to assess maths across the year. It provides clear distinction between the assessment of maths at each standard and particularly between WTS and WTS+. The overview of objectives are fundamentally linked to NC expectations, creating year group specificity for the programmes of study. Each year group covers elements of number, measure, shape and space and statistics.

The TAF is provided in two forms.

1 – A progressive overview from Year 1 to Year 6.

As a refined, logical set of year group specific objectives this provides clarity of progression across year groups. These clear descriptors lead to an understanding of expectations between year groups. Such expectations allow staff to focus on the key elements that form the revision of previous learning and the year group specific new learning.

2 - Year group specific.

Focusing on year group specificity, this provides clear focus on the end of year expectations for writing. It provides a simple but thorough set of objectives to assess a collection of writing.