

Mathematics Curriculum Statement

At St James' Church of England Primary Academy, we strive to prepare all our children to successfully aspire to a wealth of opportunities with curiosity and resilience embedded in all they do.

National Curriculum Intent:

The aims of the 2014 National Curriculum are for our pupils to:

- Become **fluent** in the fundamentals of mathematics through varied and frequent practice with complexity increasing over time.
- Develop conceptual understanding and ability to recall and apply knowledge rapidly and accurately.
- **Reason** mathematically; follow a line of enquiry, conjecture relationships and generalisations.
- Develop an argument, justification and proof by using mathematical language.
- **Problem solve** by applying knowledge to a variety of routine and non-routine problems. Breaking down problems into simpler steps and persevering in answering.

The expectation is that the majority of pupils will move through the programmes of study at roughly the same pace. Decisions about when to progress are based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly are challenged through being offered rich mastery and sophisticated problem solving. Those who are not sufficiently fluent with earlier material are offered opportunities to consolidate their understanding through additional practice either as part of lesson inputs or as targeted intervention.

Intent

When teaching mathematics at St James', we strive to provide a curriculum which caters for the needs of all individuals and provides them with the necessary skills, knowledge and aspirations for them to become successful in their future endeavours. We incorporate sustained levels of challenge through varied and high-quality activities with a focus on fluency, reasoning and problem solving whilst promoting a sense of curiosity to further deepen their understanding.

Pupils are encouraged to explore maths in depth, using mathematical vocabulary to reason and explain their workings. A wide range of mathematical resources are used and pupils are taught to show their workings in a variety of concrete, pictorial and abstract form. They are taught to explain their choice of methods and develop their mathematical reasoning skills both verbally and in written format. We encourage resilience, adaptability and acceptance that struggle is often a necessary step in learning. Relating the patterns between mathematics and everyday life through our curriculum, allows children to better make sense of the world and provides opportunity to see maths in real life situations

This is underpinned by

- High expectations and mastery: all children are expected to succeed and make progress from their starting points
- Modelling: teachers demonstrate the skills needed to succeed in mathematics providing examples of good practice and having high expectations and aspirations for the children
- A vocabulary rich environment: we promote a vocabulary rich environment, where talk for maths is a key tool in all lessons.
- Patterns and Links: Children are actively encouraged to find patterns in their maths, this helps them to explain and predict their reasoning and promotes further curiosity in their learning
- The teaching of fluency: we intend for all pupils to 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 successfully.
- The teaching of reasoning: we intend for all pupils to reason mathematically, developing arguments, justifications or proof using mathematical language as well as showing the resilience to solve problems.
- The teaching of problem solving: we intend for all pupils to solve problems by independently applying their skills to a variety of problems with increasing sophistication.

Implementation

White Rose

Every class from EYFS to Y6 follows the White Rose scheme of learning which is based on the National Curriculum. Lessons are personalised to address the individual needs and requirements for a class but coverage is maintained.

We also use a range of planning resources including those from Deepening Understanding, NCETM and NRICH to provide further opportunities to develop children's understanding of a concept and the links between maths topics.

Daily Fluency Practice

In each class, children are set a series of quick maths challenges to encourage speedy recall of known facts. This aims to ensure general maths knowledge and fluency are maintained and developed; these may take many forms, for example: arithmetic, specific times tables or a variety of questions from previously taught areas of mathematics.

Assessment

Through our teaching we continuously monitor pupil's progress against expected attainment for their age which we then use to inform our teaching.

Summative assessments are completed at the end of each term: their results form discussions in Pupil Progress Meetings and update our summative school tracker. The main purpose of all

assessment is to always ensure that we are providing excellent provision and a wealth of mathematical opportunities for every child.

Online Maths Tools

In order to advance individual children's maths skills in school and at home, we utilise Times Tables Rockstars for multiplication practice, application and consolidation.

Concrete Pictorial Abstract

We implement our approach through high quality teaching; delivering appropriately challenging work for all individuals. To support us, we have a range of mathematical resources in classrooms including Numicon, Base10 and counters (concrete equipment). When children have grasped a concept using concrete equipment, images and diagrams are used (pictorial) prior to moving to abstract questions. Abstract maths relies on the children understanding a concept thoroughly and being able to use their knowledge and understanding to answer and solve maths without equipment or images.

CPD

We continuously strive to better ourselves and frequently share ideas and methods that have been particularly effective. We also take part in training opportunities.

Cross Curricular

Maths is taught across the curriculum ensuring that skills taught in these lessons are applied in other subjects. This demonstrates to children that maths is a universal language that will be part of their lives as they move onto further opportunities in adulthood.

Whole School Events

We celebrate NSPCC number day and have whole school maths themed days. We also have Maths through Art days which bring the whole school together to concentrate on Mathematics. We also take small groups of children to Maths-based events outside of school to develop their aspirations to using their maths in the outside world.

Impact

Pupil Voice

Through discussion and feedback, children talk enthusiastically about their maths lessons and speak confidently about how they are learning maths.

Children show confidence, curiosity and resilience in learning about a new maths area and being able to apply the knowledge and skills they already have.

Evidence in Knowledge

Pupils know how and why maths is used in the outside world and in the workplace. They know about different ways that maths can be used to support their future potential.

Mathematical concepts or skills are mastered when a child can show it in multiple ways, using the mathematical language to explain their ideas, and can independently apply the concept to new problems in unfamiliar situations.

Children demonstrate a quick recall of facts and procedures. This includes the recollection of the times table.

Evidence in Skills

Pupils use acquired vocabulary in maths lessons. They have the skills to use methods independently and show resilience when tackling problems.

The flexibility and fluidity to move between different contexts and representations of maths.

Children show a high level of pride in the presentation and understanding of the work.

The chance to develop the ability to recognise relationships and make connections in maths lessons.

Teachers plan a range of opportunities to use maths inside and outside school deepening their curiosity and resilience in the subject and providing opportunities to be successful in the wider world.

Outcomes

At the end of each year we expect the children to have achieved Age Related Expectations (ARE) for their year group. Some children will have progressed further and achieved greater depth (GD).

Children who have gaps in their knowledge receive appropriate support and intervention. All children should have made progress.