

Maths at SMAB



Intent

Our Maths curriculum at St Michael at Bowes CE School (SMAB) develops in children a range of skills for life, including mathematical fluency, logical reasoning and problem-solving. In line with the National Curriculum, we have daily maths sessions in all classes and cover the core Mathematical areas of number, measurement, geometry and statistics, with the additional topics of algebra and ratio in Y6. Where possible we make cross-curricular links to make learning more enjoyable and relevant. We want children to experience the enjoyment of mathematics and develop a sense of curiosity about the subject with a clear understanding.

Years 3 and 4

Children are taught to calculate using all four operations. They are encouraged to tackle problems using mental techniques in the first instance. The next step is 'Talk for Maths' where children discuss the range of possible strategies before deciding on a particular approach, giving their reasons for their choice. Numicon is used to support understanding and exploration of different calculation methods.

Years 5 and 6

Pupils develop the wider range of mathematical language which underpins the art of reasoning. Independence in describing the process by which children problem-solve is increasingly encouraged.

Teaching

- Lessons are delivered using the five principles of mastery: representation and structure, mathematical thinking, variation, fluency and coherence
- Children are given the opportunity to learn mathematics practically and teachers are encouraged to use maths manipulatives. Children should have the opportunity to build competency by taking the concrete, pictorial and abstract approach. This means children should use concrete objects and manipulatives to help them understand what they are doing. Alongside this, children use pictorial representations to help them reason and problem solve. This should support children's understanding of abstract methods.
- Children will be expected to complete tasks/activities that range from fluency to reasoning.
- New vocabulary is explicitly taught, displayed on working walls and used in discussion and reasoning.
- Flexible groupings are used during lessons e.g. ability and mixed ability groups, paired work, guided and independent work and whole class work.

Weekly Maths Cycle

Session 1: Let's Think/Talk for Maths

Children record what they have learnt in their books through the use of pictorial illustrations and response to the questions.

Session 2: Mastery

Children initially work in pairs to discuss and dissect questions. Children are then encouraged to use mathematical language or pictorial illustrations to explain the steps they took to solve these problems.

Session 3: Task Sheet

During this lesson, children will have the opportunity to apply their learning by completing the task sheet. Children should be encouraged to start on mastery questions if they are ready to do so and do not need to work through every question.

Session 4: Arithmetic or Reasoning

Children develop their recall and improve their skills in arithmetic and reasoning. Children explore different strategies and identify the most efficient methods

Session 5: Consolidation, Misconceptions & lesson if needed

Planning

- The school has a detailed curriculum map which indicates the topics that are covered throughout the year.
- Planning follows the Small Steps of White Rose Math; however, teachers may adjust if they feel their year groups need extra support/time when covering certain topics.
- The medium-term plan for each year group details the length of time to be spent on each topic. This indicates what teaching and learning must happen each week so that no class falls behind. This plan is referred to in weekly meetings to ensure all classes are on track.
- Teachers meet weekly to discuss planning and weekly/daily plans are created by one member of the team. Teachers are encouraged to adapt the planning to suit the needs of their class (children who are new to English, SEND etc.)
- A planning overview, on an Interactive White Board is completed for each topic taught, indicating objectives to be taught, a section of Fluent in Five questions and key vocabulary.
- Opportunities for more able children are planned for so that they can deepen their mathematical knowledge and reasoning/problem solving skills.

Monitoring

Monitoring is carried out by subject leader and SLT during the school year. This will include

- Learning visits during Maths lessons
- Book looks
- Pupil voice
- Staff/ parent questionnaire
- Moderation across year groups and phases
- Pupil progress meetings

Marking and feedback

All work should be marked according to the school marking policy by using

- Peer and self-assessment
- Oral feedback
- Children use a **PURPLE PEN** to show response to adult feedback and **GREEN PEN** for self and peer assessment
- Where an adult has provided feedback, the child will respond in **PURPLE PEN**

Resources and Working Walls:

- Maths vocabulary, with pictorial reminder (if required) for current topic/method are displayed clearly and referred to throughout the week.
- Working walls are separated into three sections: Vocabulary which displays the key words for the topic; remember me which displays the steps of success criteria the and key strategies which displays the methods being used
- All classes have a Big Book where there are examples of work carried out in lessons, questions and responses
- 'Let's Think' sentence stems are displayed in each class to support reasoning

Resources:

- Key resources for number and place value are stored in classes rooms.
- Classrooms are also equipped with resources for bar modelling and Numicon
- All other resources relating to measures, shape etc are stored in Maths cupboard.
- Teachers also encourage the use of ICT in lessons using i-Pads, Chromebooks and MacBooks when appropriate

Assessment:

- Teachers use regular assessment for learning opportunities to establish next steps for pupils
- A baseline assessment (Rising Stars) is completed in the beginning of the Autumn term in Year 3-5
- End of term tests (Rising Stars) are also carried out three times a year
- Year 6 carries out assessment three times a year using past examination papers
- Freckle, a programme which assesses children using differentiated questions, is used across the school. Class teachers are provided with a written report detailing children's areas of development every term
- Ongoing multiplication tables test until children have reached required national expectation.
- SATs testing in Year 6
- Multiplication check at the end of Year 4.
- The above assessments are used to inform teacher assessment and children's progress is monitored on a software programme called Target Tracker

