

Mathematics Policy



**Providing the rich soil that enables
our children to develop deep roots and flourish.**

Chair of Governor: Dr Holmes

Approved by: Standards

Approved on: Spring Term 2022

Review Date: Autumn Two 2024

Other relevant policies: Immersion Curriculum, Assessment, Maths Continuum

Mathematics is the craft of creating new knowledge from old. Mathematicians make links, find patterns and solve problems. Mathematicians are not scared of getting things wrong.

Intent:

For all learners to have...

- The ability to think independently, solve problems and reason about number, shape and space and measures;
 - A fluency in calculation, both mentally and on paper;
- Excellent mathematical knowledge and understanding which is demonstrated through written and verbal communication, rapid recall and use of the language of mathematics;
 - A passion for mathematics and being a mathematician.

Implementation:

Mathematics will be taught using a Practice – Apply – Deepen approach in order to develop a fluency in the fundamentals of mathematics and to allow the children to extend their thinking when ready to do so. Teachers will plan lessons so that all children have regular opportunities to practice and apply skills, but also so that the children aspiring to greater depth have regular opportunities to deepen their learning. Reasoning and Problem Solving will feature regularly through whole-class warm up activities, specific lessons on how to problem solve and collaborative events such as GECKO Maths, and regular opportunities and expectations for the children to share their thinking verbally. High priority will be placed on the retention and practice of rapid recall and mental calculation skills through daily activities and games, while progress in learning tables will be highlighted through the 'Club Maths' system. Mathematics will be used outside of maths lessons, with opportunities for cross-curricular links through the immersion curriculum capitalised upon.

Impact:

The children of Amberley will understand and develop the traits, skills and behaviours needed to become Mathematicians. They understand that Mathematics is about fluency, reasoning and problem-solving, and they aim to behave like mathematicians in the way they acquire, learn and use their knowledge. They use their knowledge and skills-base which will allow them to further deepen their understanding.

KEY PRINCIPLES

At Amberley, we believe that children learn best when:

1. Learning activities are **well planned** and **ensure progression** in the short, medium and long term.
2. Teaching and learning activities **enthuse, engage** and **motivate** children to learn and **foster** their **curiosity** and **enthusiasm** for learning.
3. **Assessment** informs teaching so that there is provision for **support, repetition** and **extension** of learning for each child, at each level of attainment.
4. The **learning environment** is **ordered**, the atmosphere is **purposeful** and children feel **safe**.
5. There are **strong links** between **home and school**, and the importance of **parental involvement** in their child's learning is recognised, valued and developed.

The application of these key principles to Mathematics teaching and learning will be described in this policy.

PRINCIPLE 1

Learning activities are well planned and ensure progression in the short, medium and long term.

There will be evidence in the learning environment of:

- Activities that are catered to meet the needs of pupils at varying degrees of depth, with pupils given the opportunity to practice a skill, apply that skill and deepen their understanding of that skill. This will ensure children are suitably challenged and that there is continuity in the work set.

Teachers will ensure that:

- The skills, concepts and knowledge of the National Curriculum will be taught, fostered and developed.
- Mental and written calculation approaches are taught with continuity and consistency by relating to the Calculation Continuum and the 'Club Maths' sheets.
- There are opportunities for developing the strategies of using and applying and problem solving through collaborative and co-operative problem solving sessions each term, while these skills will be taught and practiced on a weekly basis. The using and applying skills will also be used as part of every step on the learning journey in the 'apply' and 'deepen' stage of the learning tasks.

Implications for the whole school:

- Planning is informed by National Curriculum 2014 and linked to the White Rose hub planning for mastery documents.
- Mathematics coverage is ensured through teachers following the White Rose Hub mixed year group plans and annotating these accordingly.
- A monitoring process is in place to support the progress of individuals and groups of learners (data analysis, narrowing the gap meetings, lesson observations and book looks)

PRINCIPLE 2

Teaching and learning activities enthuse, engage and motivate children to learn and foster their curiosity and enthusiasm for learning.

There will be evidence in the learning environment of:

- A Mathematics working wall in evidence in each classroom, with a combination of materials to support and engage pupils.
- A range of concrete materials used to support the development of calculation and number, including practical and pictorial resources not limited to the younger and less able children.
- Whole school motivational systems such as the Club Maths rapid recall sheets, GECKO Maths collaborative problem solving and interactive home learning are in place and regularly promoted.
- Acknowledgement and rewards for successful learners through 99 Club Champion medals
- Related out of school and enrichment activities (Maths Club, 24 Maths Challenge).

Teachers will ensure that:

- Well-judged and effective teaching strategies successfully engage pupils in their mathematics learning – *each learning objective will be supported through separate and distinct practice, apply and deepen activities.*
- Teachers use their mathematical knowledge and expertise to develop pupil's knowledge, skills and understanding.
- Teachers will use questions and discussion (talk partners) to promote talk for learning.
- website and children encourages to regularly learn their rapid recall facts.
- There are cross curricular opportunities identified for mathematics in the learning journey, and that these are evidenced by mathematics work in the theme books.

Implications for the whole school:

- Mathematics subject leader will ensure appropriate resources are sourced and related real-life learning opportunities are shared.

PRINCIPLE 3

Assessment informs teaching so that there is provision for support, repetition and extension of learning for each child, at each level of attainment.

There will be evidence in the learning environment of:

- Children who are motivated to learn through activities differentiated by depth that build on their prior attainment and issue challenge which is achievable when children are working hard and trying their best.

Teachers will ensure that:

- Pace and depth of learning is maximised as a result of monitoring learning during lessons, outcomes of written work and in a response to children's marking feedback or learning reflections.
- Have high expectation of all children, and plan, resource and direct differentiated learning activities that give support and issue challenge to all, thorough using the activities linked to the Practice, Apply, Deepen mastery approach.
- Mathematics assessment carried out towards the end of each term using commercial resources as well as teacher's own materials. These assessments are objective driven and are linked to the non-negotiable key assessment objectives, and should not be assessed during the same learning journey but at an appropriate distance in order to assess degrees of mastery.
- Children in Year 2 and Year 6 will take part in SATs style assessment activities, with results, feedback and self-evaluation and monitoring ensuring that the assessments are a part of the feedback loop. Children in other year groups may, where appropriate, also complete timed written tests.
- Overall pupil progress in mathematics is assessed three times a year at the specific assessment point.

Implications for the whole school:

- Mathematics subject leader, class teachers and head teacher will analyse data to identify individuals or groups who are not achieving their potential, including provision for G&T.

PRINCIPLE 4

The learning environment is ordered, the atmosphere is purposeful and children feel safe.

There will be evidence in the learning environment of:

- The safe use of resources.
- The use of additional adults to support and challenge all pupils.
- The use of purple pens by children to correct, improve and self-evaluate their work, including entering into a dialogue about their work with the class teacher where appropriate.

Teachers will ensure that:

- All children's responses are valued, and that errors are seen to be a significant learning opportunity.
- Talk partners are used effectively and in a positive and supportive nature to allow all children the opportunity to develop their skills in a safe environment.
- Pupils have the opportunity and are encouraged to self-evaluate their learning and respond to marking, flagging up any difficulties or concerns.

Implications for the whole school:

- Lesson observations in mathematics to habitually consider the learning environment and how conducive it is to effective learning.
- Lesson observations and Book Looks to habitually focus on the marking by the teacher (in black) and the response by the pupil (in purple).

PRINCIPLE 5

There are strong links between home and school, and the importance of parental involvement in their child's learning is recognised, valued and developed.

There will be evidence in the learning environment of:

- Acknowledgements and praise for children who have carried out effective home learning, including the use of weekly learning of rapid recall facts and the inclusion of mathematical tasks as part of the topic homework sheets.

Teachers will ensure that:

- Parents are welcome to share in their children's mathematics learning through looking at their mathematics books and mathematics within topic book and discussing learning.
- House points are awarded to pupils for completed home learning activities.

Implications for the whole school:

- Ensure parents are informed about school events and relevant topics through weekly newsletters, termly calendars of special dates, text messages, notice boards and the school website.
- Ensure parents will have access to appropriate home learning activities linked to the child's age and ability.