



MATHEMATICS POLICY

Intent

We know that our children start school with different experiences of maths understanding. Our curriculum is designed to ensure that all children have access to high quality learning that is both challenging and enjoyable. This supports children in becoming inquisitive and resilient, preparing them for their future as a lifelong learner.

- We ensure that all children have a secure understanding of all mathematical concepts.
- We use the CPA approach to ensure that children easily make links between practical equipment, pictures and abstract numbers
- All children are exposed to age related expectations in a keep up approach through mastery. Adaptive teaching approaches are used to ensure success.
- Specific language development and practical experiences in maths will enable them to become "deep thinkers" acquiring maths skills that can be recalled quickly and transferred and applied in different contexts.
- We build fluency through clear instant recall facts and provide practice at securing these.
- Reasoning and competence in problem solving is presented in different ways to enable children to become resilient, making clear connections across the areas of maths, using their knowledge in other subjects and in their everyday lives.

Implementation

The calculation policies clearly show the methods that we teach to solve the four operations. In school children are taught a range of mental and written methods, children are encouraged to consider the most efficient methods. All pupils have access to daily maths lessons.

Long term plans are in place for all year groups and these are followed by staff.

Unit of work

- National Curriculum Programmes of Study are used for long term and medium-term planning.
- White Rose Maths (WRM) small steps - this programme is used for long term, medium term, weekly and daily lessons.
- A mastery format is delivered where all children working at their age-related expectations all start at the same point and then progress through the fluency and reasoning problems at their own pace.
- Prior Learning - this is achieved through targeted questioning and the analysis of the end of unit assessments for the previous year group and the current year group (where appropriate) that are completed at the beginning of a unit to identify strengths and next steps.
- Working Walls - reflect the unit of work that is being taught and demonstrate the build-up of skills throughout the unit incorporating the CPA model and key vocabulary. Working walls are referred to regularly throughout lessons to encourage and promote independence. Working walls also reflect the journey that the class has been on, this supports retrieval of previous skills in order to apply to new learning.

- Vocabulary - a wide range of mathematical vocabulary to be modelled and displayed on the working wall and used in context to demonstrate understanding. We also display the stem sentence of the week for the maths lesson focus and the mastering number focus.
- Teach -The CPA (concrete, pictorial, abstract) approach is used to encourage children to make links between practical equipment, pictures and abstract numbers whilst learning new ideas and building on their existing knowledge to explore abstract concepts in a more familiar and tangible way.
- Application - varied fluency, reasoning and problem solving are used to develop a deep and secure knowledge and understanding of mathematical concepts.
- Assessment - through live marking, formative and summative assessment (prior learning and end of unit assessments) as well as through questioning, feedback and plenaries.

Lesson structure

- Teachers are aware of prior learning and how this feeds into understanding new content. Teachers plan to enable all learners to make connections between prior learning and new learning.
- New content is broken down into small steps to ensure that lessons/ units have clear objectives that are progressively linked. There are planned opportunities for spaced retrieval to ensure changes in long term memory are embedded and can be recalled upon quickly in order to apply knowledge in different contexts.
- Mathematical vocabulary is explicitly taught so that children can discuss their thinking and explain their reasoning. Stem sentences are used to support pupils in speaking in full sentences in order to communicate their ideas and understanding.
- The lesson structure follows these 7 steps, some steps may be taught over two sessions. This is evidenced in the books by codes which the children write in.
 1. Can you still? (Code C)
 2. Share learning objective
 3. Guided Input/ Discussion
 4. Guided Practice
 5. Independent Practice (Code P)
 6. Varied Fluency (Code F)
 7. Reasoning (Code R)
 8. Plenary.
- Manipulatives are used throughout lessons as part of our adaptive teaching approaches to ensure that all children have success. These manipulatives are carefully selected to be the most efficient and appropriate.
- Metacognitive approaches are used as a way for children to become independent in their thinking, children are encouraged to plan, do and review in order to rehearse their thinking.

Key instant recall facts

- Snappy maths or 3-minute fluency checks are completed daily. Mastering number sessions are taught outside of the maths lesson in order to give additional time for fluency practice. These support pupils in developing number sense.
- Teachers follow the whole school progression document to ensure coverage of key skills in each year group.
- In nursery these are used as the starter to their session.
- Number of the week fluency MATs are used to support children recalling facts about a given number, these allow children to recall facts such as doubles, halves, multiplication facts and representation of numbers.

Numbots and Times Table Rockstars

All have the opportunity to support their learning through the online app 'Numbots.' This is an online game that when played little and often will significantly improve a child's recall and understanding of number bonds and addition and subtraction facts. These are critical foundations in mathematics. It was designed with the Mastery approach in mind. The children are able to move through the games completing the different levels in the stage becoming more confident as they go.

Children in Year 2 also benefit from the TTRockstar Programme. It is a structured sequenced games that allows the child master their times tables. Time in the curriculum timetable is also allocated for pupils to practice these.

Number formation

This is taught through the use of Ten Town and its characters. These are introduced in EYFS and used throughout school to secure formation.

Assessment

Assessment is an integral part of the teaching and learning process. Assessment is used to inform planning and to facilitate effective learning. The assessment of children's work is on-going to ensure that understanding is being achieved and that progress is being made.

Formative assessment

Effective marking and feedback are an important element of teachers' responses to children's learning. This may be given either orally during live marking it is always:

- specific, accurate, and clear
- celebrates success
- compares what a pupil is doing right now with what they have needed to improve before
- provides specific guidance on how to improve as their next step

Summative assessment

This supports teacher judgments, each class in KS1 undertakes a termly formal assessment.

- End of unit checks
- White Rose termly progress checks
- NTS maths papers (end of year)
- KS1 SATS
- In EYFS - ELG - number and numerical pattern are continually assessed in order to make summative judgments. Observational evidence supports teacher assessment.

Monitoring

Role of the leaders:

- Plan an effective and varied schedule of monitoring including moderation, which is triangulated through in school and MAT moderation.
- Respond quickly and supportively to all barriers preventing outstanding implementation and impact in Mathematics.
- Support staff to identify potential barriers and plan effective and quantifiable interventions.
- Use assessment information to provide effective CPD and challenge.
- Provide clear updates to the LCGB link governor, Headteacher and SLT.

Monitoring consists of:

- Book scrutiny
- Lesson observations (formal and drop-in)
- Pupil discussions
- Moderation (internal and external)
- External teaching reviews

All class teachers and support staff will be given a copy of the structure document and manipulatives document. These documents outline a set of non-negotiables that all members of staff will follow to allow for consistency in Maths across the school.

Maths across the Curriculum

Although the mathematics curriculum is organised as a discrete subject, there are many potential cross-curricular activities, linked closely to the topic for that term. Making links between areas of learning deepens children's understanding by providing opportunities to reinforce and enhance learning.

Parent Involvement

Parent workshops take place across the MAT and are run by the maths leaders, these focus on key knowledge for each year group. Parental reports also take place at key points through the year both verbally and written.

Inclusion

The starting points for educating all pupils are the same: an acceptance of diversity, pupils' rights, and the knowledge that all pupils can learn if they receive good teaching. All pupils have a right to effective teaching and full participation in the community of a school as set out in international agreements (the UN Convention on the Rights of the Child, 1989) and education law in England (the Equality Act, 2010 and the Children and Families Act, 2014).

At Alexandra Infants' and Junior School it is our belief that all children have an equal right to a broad and balanced curriculum, which enables them to meet their full potential. Through our teaching we provide learning opportunities that are ambitious for all and enable all pupils to make good progress.

Teachers set high expectations for all pupils in Maths. They will use appropriate assessment to set ambitious targets and plan challenging work for all groups, including:

- More able pupils

- Pupils with low prior attainment
- Pupils from disadvantaged backgrounds
- Pupils with special educational needs (SEN)
- Pupils with English as an additional language (EAL)

(For further details, see separate policies)

Teachers will plan lessons so pupils with SEN and/or disabilities can study Maths, and ensure that barriers to learning are reduced through adaptations as part of high-quality teaching. Teachers will also take account of the needs of pupils whose first language is not English. Lessons will be planned so that teaching opportunities help pupils to develop their English, and to support pupils to take part in Maths. Further information can be found in our statement of equality information and objectives, and in our SEN policy and information report.

As a school we strive to ensure that all children, staff and members of our school community are treated fairly and equally. All children have equal rights to access all areas of the curriculum, regardless of race, gender, religious beliefs, sexual orientation and disability. Within this subject area, the Senior Leadership Team (SLT) and all staff endeavour to provide the appropriate provision for this to occur. This policy follows the guidelines and practices that are stated and outlined in Alexandra Infants' and Junior Schools Equality Scheme. Please see this policy for further detail.'

Policy monitoring and review

The Maths subject leader is responsible for the monitoring and implementation of this policy. The subject leader reports on the effectiveness of the policy to the head teacher and the governing body.

This policy will be reviewed annually.
Reviewed May 2024 by Miss H Thompson