Intent, Implementation and Impact of the Mathematics Curriculum

Intent

At Stonehill School we see mathematics as a journey that is achieved through exploration and investigation, clarification, practice and application.

Mathematics is essential to everyday life and our aim is to ensure children:

- Can solve every day real life problems e.g. timetables, receipts, time keeping and data,
- Have an understanding of their finances,
- Can access further education and employment,
- Have an understanding of the world of engineering and technology.

At Stonehill School we aim to teach mathematics using a mastery approach to ensure that pupils have a deep learning that can be transferred and applied in different contexts.

We intend to do this by:

- Ensuring our children have access to a high quality mathematics curriculum that is both challenging and enjoyable.
- Providing our children with a variety of mathematical opportunities, which will enable them to make the connections in learning needed to enjoy greater depth in learning.
- Ensuring children are confident mathematicians who are not afraid to take risks.
- Fully developing independent learners with inquisitive minds who have secure mathematical foundations and an interest in self-improvement
- Developing mathematicians that can calculate fluently.

Implementation

Planning

1. Long term:
   Herts for Learning long term planning is used from Y1 to Y6 and based on the aims in the National Curriculum. EYFS also use the Essential Maths Reception plans flexibly to meet Early Learning Goals.

2. Medium term planning:
   The Herts for Learning Long term plan is split into 'Learning Sequences'. Each learning sequence clearly states the key NC statement outcome and any other related statements. It also outlines the key concepts of that learning sequence.

3. Short term planning:

Each 'Learning Sequence' is split into carefully designed 'steps'. The steps are planned to enable the children to work methodically towards meeting the NC statement by the end of the sequence. Each step has a clear learning intention which is shared with the children. Each step will not necessarily equate to one lesson and teachers use their professional judgment as when to move on to the the next 'step'.

Short term planning uses a Concrete, pictorial, abstract approach to teaching mathematics:

When introduced to a key new concept pupils are encouraged to physically represent mathematical concepts. Objects and pictures are used to demonstrate and visualise abstract ideas, alongside numbers and symbols.

Concrete – children have the opportunity to use concrete objects and manipulatives to help them understand and explain what they are doing.
Pictorial – children then build on this concrete approach by using pictorial representations, which can then be used to reason and solve problems.
Abstract – With the foundations firmly laid, children can move to an abstract approach using numbers and key concepts with confidence.

Within the short term planning key 'Destination Questions' are used to ensure children have understood the concept and also to ensure that they can apply their understanding and reason. Teachers use these during lessons or as 'Next Step Marking' questions. Other materials from NCETM are also used as reasoning activities.

Additional greater depth activities are planned as part of each learning sequence.

A detailed Skills Progression documents highlight the skills that are taught in each year group and is linked to the long term, medium term and short term planning.

Each classroom has a Maths strategy board that shows current learning. Staff should refer children to this so that they are familiar and use it regularly as a prompt to learning. This can be also used to help develop independence.

Each teacher has a Maths handbook for their year group. This contains key information to help them with the teaching and assessment of mathematics.

Assessment

1. Summative assessment:

   Herts for Learning Steps assessment resources are used to report termly and track pupil progress over the year. This data is used as part of the Pupil Progress meetings and to set children's targets. (TAFs in Year 2 and Year 6 are also used to assess children formally.)

2. Diagnostic assessments:

   Herts for Learning diagnostic assessments are used termly to help inform summative judgments and to inform future planning of lessons, additional support and fluency sessions.

3. Formative assessments:

Teachers and learning support assistants are continually assessing children's learning. This information can be: used as immediate feedback during the lesson, given as part of the marking and feedback given in books, used to inform future lessons or additional support.

Moderation:

To ensure assessments are accurate, the subject leader and teachers take part in in-school and local moderation clusters. (Y2 and Y6 may also be moderated in line with the KS1 and KS2 TAFs)

Impact

What impact has the above had on:

- Quick recall of facts and procedures?
- The flexibility and fluidity to move between different contexts and representations of mathematics?
- The ability to recognise relationships and make connections in mathematics?
- Children's enthusiasm and resilience in their learning?

A mathematical concept or skill has been *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.

These will be assessed through: assessment, marking and feedback, tracking, pupil progress meetings, performance management, moderation and standardisation and pupil voice.

Written by Nick Phillips (Mathematics Subject Leader).