

# STANNINGTON INFANT SCHOOL

## Policy for Mathematics

Agreed by Governors

Next Review March 2022





## Stannington Infant School Policy for Mathematics

### Stannington Infant School Vision:

- To encourage a caring and positive attitude amongst the children towards all others and their environment.
- To provide a challenging, creative and rich curriculum which will develop curiosity, confidence and independence.
- To provide an inclusive, safe, secure, healthy and happy environment.

Mathematics is the study of relationships in number, measures, space and data-handling and their application to solving problems in a variety of situations.

It provides children with a way of viewing and making sense of the world in which they live. Building on their own experience, it encourages thinking and reasoning skills, embraces natural curiosity and develops the confidence to tackle problems which arise not only in mathematics but other areas of the curriculum.

### Aims and Objectives

At Stannington Infant School we aim to:

- Foster a positive attitude to maths for all children enabling them to approach mathematical activities with confidence, understanding and pleasure.
- Provide a curriculum which meets the needs of The Foundation Stage and KS1 of the National Curriculum, which is appropriate to the needs and learning styles of all children, and will develop enquiring, logical, investigative and problem solving approaches.
- Build upon and extend the children's previous experiences and ensure progression in the development of their understanding, knowledge and use of mathematical language.
- Inform parents of their child's progress and suggest ways they can support them in their learning.

Our mathematical objectives are:

- Numerate children.
- The ability to communicate mathematical ideas and concepts using appropriate language.
- Understanding of mathematical symbols and conventions including mathematical language.
- Appreciation of a range of recording methods.
- Ability to select and use a range of mathematical resources.
- To value the process of enquiry as well as the answer and to appreciate that the definitive answer is not always possible.

We will achieve this by:

- Engaging the children in some mathematical activity everyday.
- Nurturing an atmosphere where children are at ease and are not inhibited about 'having a go'.

- Encouraging the children to communicate with each other and with adults, question, explain, predict and try alternative ideas and methods.
- Encouraging the children to record their ideas initially in an informal way and later both in standard written methods and informal jottings.
- Teaching key concepts in Y1 and Y2 as detailed in the National Curriculum,
- Teaching key concepts in the Foundation Stage as detailed in the Early Years Foundation Stage Curriculum.
- Taking account of the varying needs of individual children.
- Providing a variety of readily available apparatus to support their learning and to provide models and images.
- Providing a focused area for mathematics within each classroom where key vocabulary and resources are displayed.
- Keeping parents informed of their children's progress in mathematics through parents evening discussions and reports.
- Developing reasoning and problem solving skills.

## **Teaching and Learning in Mathematics**

At Stannington Infant School we believe that progression should be planned at an individual rate. Success is vital, but so is challenge, therefore we aim to ensure children are actively engaged both mentally and physically.

- Thus children will be given time to:-
  - use trial and adjustment approaches
  - undertake mental work
  - develop their own methods
  - discuss their methods with adults and other children

## **Foundation Stage**

In the Foundation Stage the organisation and management of mathematics lessons is tailored to meet the needs of the children who arrive from different settings e.g. nursery, playgroup etc. and therefore will have had different learning experiences. The yearly teaching programme for Reception is in line with the Early Learning Goals and provides a bridge from the goals to the National Curriculum that begins in Year 1. The sequence of maths learning is planned primarily using the White Rose scheme of work, the NCETM's current research projects and most recently the work we completed in the Northern Powerhouse Project (2018-2019).

In Reception, a wide range of cross-curricular activities support the teaching and learning of mathematics and children's early number sense, including stories, songs, rhymes, imaginative play, board games and outdoor play. Much of the maths learning is focused around daily routines, e.g. have we got enough snacks for everyone in our class? Can we line up in 2's, with a partner? Over a week, the teaching of maths will include whole class activities e.g. counting, discussion of main teaching objectives and group activities. These are approached flexibly to accommodate the needs of the children.

The Foundation Stage environment includes maths areas with number challenges for children in independently access. Children also know where the counters and number lines are kept so that they can make independent choices about what resources they need to help them with their learning. This set up also encourages children to use and apply their developing mathematical ideas and methods, for example, by selecting resources to design and make a maths game.

## **Key Stage 1**

In Years 1 and 2 maths sessions begin by focusing on developing mental and oral skills. All children are encouraged to develop mental methods of calculation, recall of number facts and mental imagery. The purpose of this part of the lesson is to keep skills sharp. There is an emphasis on developing instant recall of number facts as well as looking for patterns and shortcuts in the number system. It is delivered with a fun, fast pace.

The session objectives are then be shared with the children and the concept taught using models and images to support children's learning. Mathematical activities are introduced to the children through concrete experiences and at all levels abstract work is reinforced with practical activities. We encourage children to independently select and use appropriate equipment as much as possible to support their understanding.

Children work in groups, pairs or as individuals on differentiated tasks to meet their individual needs. Working in groups or pairs provides children with the opportunity to talk which develops their mathematical reasoning and understanding of concepts. Discussion with peers, describing, explaining, clarifying ideas, predicting and reporting outcomes and asking questions, all fosters the development of mathematical language and conceptual understanding.

The children work on a variety of activities, usually practically at first using concrete objects, before moving onto using pictorial representations and finally and abstract method. As children develop, they are encouraged to record their work in a variety of ways, develop personal methods of recording, compare and discuss alternate methods, refine and practise useful methods. These will vary according to the type of activity. They may include symbolic, statistical, diagrammatic, pictorial, verbal reporting or the construction of a model. As children become more involved in investigative activities the onus is on them to decide the most appropriate methods of recording.

## **Planning**

Teachers' planning takes three forms:

### **Long Term Planning**

The National curriculum for Mathematics constitutes the long term planning for Y1 and Y2. The Early Years Foundation Stage Curriculum constitutes the long term planning for Foundation.

### **Medium Term Planning**

Each year group completes a termly topic overview which identifies the particular units of work being covered in maths that term. During each half term regular opportunities for reasoning and problem solving are planned in, to encourage children to use and apply their mathematical knowledge and skills in different and real life contexts. We use planning resources from a variety of sources including the Maths Hubs and ISee Reasoning.

### **Short Term Planning**

Working from the medium term overview each teacher then produces a weekly short term plan which contains details of lesson objectives, activities, resources needed and key vocabulary for each lesson. Activities are differentiated to meet the individual needs of children.

## **Assessment for Learning**

Assessment is both formative and summative and is undertaken both formally and informally.

Informal assessment is undertaken on a daily basis by teachers who observe and converse with children during the course of the maths session. These assessments may be recorded on the short term planning sheet and are used to inform future sessions and planning, particularly with regard to differentiation during the 'pupil activities' part of subsequent lessons.

For more formal assessment, we use maths assessment grids to support our assessment in maths and at the end of each half term the children are given a teacher assessed 'step' using the Sheffield Tracking and Assessment Tool which has been developed using the National Curriculum and Foundation Stage Early Learning Goals.

As a result of this at the end of each year teacher assessments, the Foundation Stage Profile and end of KS1 results are summarised and are passed on to the receiving teacher and parents as part of the annual report and on transition to Nook Lane.

## **Resources**

Each class has a range of mathematical equipment which is differentiated by year group. In addition we have a centrally based selection of mathematical equipment stored in the Resource room. These are available to staff as and when they require them.

Computers are available to children throughout school and we have a range of ICT resources to consolidate and develop skills further. Each class also has an interactive whiteboard. These are used daily during maths lessons with the whole class particularly during the mental and oral part of the lesson. They powerfully present to children models and images to support and reinforce their learning. We also use a selection of appropriate programmable toys and software for individual or paired work.

## **Inclusion and Equal Opportunities**

In line with our Equal Opportunities Policy we aim to provide a balanced mathematical education for all children irrespective of gender, race or ability. We will endeavour to use material which values the diversity of cultural and linguistic backgrounds.

## **Special Educational Needs**

Mathematics is taught within the SEN Policy guidelines. Through our assessment procedures we aim to identify children with special needs to enable all children to achieve their full potential. Those children who are experiencing difficulties are given extra support either from the class teacher, teaching assistants or through liaison with outside agencies. Activities are appropriately matched to children's' abilities and where and when appropriate resources are modified.

## **More Able**

Children who are very able mathematically are provided with challenges and support through:

- Differentiated planning of particular activities to ensure progression within a lesson, including extension activities focusing on further developing their reasoning skills.
- Targeted questions particularly directed at these children in whole class sessions.
- Assessments both formal and informal are reflected in planning.

## **Monitoring and Review**

Mathematics is monitored in line with the annual monitoring programme. The co-ordinator works with the head teacher in developing and implementing systematic procedures for the monitoring of the planning, outcomes and delivery of mathematics. This is achieved via lesson evaluations, monitoring pupil work and planning and discussions with pupils.

Self-evaluation is encouraged by asking staff to identify specific training needs and identify equipment to be purchased (budget permitting) to support their planning.

The maths co-ordinator is responsible for:-

- Leading CPD
- Supporting and advising staff in the delivery of the maths curriculum
- Managing the maths budget and providing resources with which to deliver the maths curriculum
- Monitor and evaluate teaching and learning
- Review the maths policy
- Attend co-ordinator briefings
- Monitoring pupil progress and achievement of individual children, groups of children and whole school

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