St Anne (Stanley) CE Primary School

Mathematics Policy

1 Introduction:

A 'high-quality' mathematics education provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject. (National Curriculum September 2013)

2 Vision:

To develop fluency in mathematics, children need to secure a conceptual understanding and efficiency in procedural approaches. It is important to make connections between concrete materials, models and images, mathematical language, symbolic representations and prior learning. We must ensure that children have opportunities to practise the key skills whilst building the understanding and knowledge to apply these skills into more complex activities. The basic skills must continually be practised to ensure that they secure the building blocks in mathematical learning.

3 Personal, Social, Health Education and Citizenship:

Mathematics is a tool that can teach children how to make sense of the world around them through developing their ability to calculate, to reason and to work together as well as independently to solve real life, everyday problems. It enables children to understand and appreciate relationships and pattern in both number and space in their everyday lives. Through their growing knowledge and understanding, children learn to appreciate the contribution made by many cultures to the development and application of mathematics.

4 Aims:

The national curriculum for mathematics aims to ensure that all pupils:

- become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can **solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

5 Daily Maths Lesson:

All pupils have a daily maths lesson. The structure of each lesson is flexible and will vary depending on the needs of the children and the content of the lesson.

Typically, a maths lesson will include; a learning objective, activities that provide challenge for each ability group, key questions and the use of additional adults. Other areas for consideration include, steps to success, teacher modelling and the structure of the lesson (chunking, show and go, staggered input).

Children will be encouraged to tackle real life problems enabling them to make secure links between maths and their lives.

6 Basic Skills:

Knowledge of the basic skills is fundamental in helping pupils move towards procedural efficiency. Basic skills sessions gives teachers the opportunity to link with previous, current or future learning so that the prerequisite skills of an objective can be regularly practised and rehearsed.

A typical basic skills session could include; counting, recall of facts and practise of a skill linked to current learning. Jotters alongside whiteboards are a useful way of recording basic skills work.

7 Planning and Resources:

The Liverpool maths plans are used as the main structure for planning. Other resources that may be used include; calculation policy, calculation sequence, an agreed supplementary maths scheme, text books and resources that support investigative/problem solving work.

8 Calculation Policy:

There is an agreed calculation policy that should be followed. For each operation there are four or five stages, starting with practical methods that support conceptual understating moving through to methods that allow children to demonstrate efficiency in procedural approaches.

The calculation sequence provides an opportunity for pupils to practise the skills of calculation through a range of application activities including the use of inverse, missing box, word problems and investigations.

9 Times Tables:

By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work. (National Curriculum in England, July 2014.) Teachers will ensure children practise times tables daily to enable them to meet this requirement. Children will be well prepared for the proposed national times tables assessment at the end of Year 4.

10 Marking and Feedback:

Consistently high quality marking and constructive feedback from teachers ensures pupils make progress in their learning.

Teachers will follow the agreed marking key and feedback to children will be given in writing and or verbally.

Children will respond to teachers comments in writing in their books (answer challenge questions or explain how they arrived at their answers). Younger children's responses can be captured by teachers and recorded in books.

Children will be given time to reflect on prior learning at the beginning of each lesson. This will include partner/whole class discussion, 1:1 feedback with the teacher/ other adult and individual responses in books.

Marking and feedback will include next steps marking where appropriate.

11 Presentation:

Pupils should be reminded to take pride in their work. Children will follow DUMTUMS (date, underline, miss a line, title, underline, miss a line, start work…) across the curriculum. In maths books, this will require children to use the short date and record the learning objective. In squared books, children will follow the 1 square, 1 digit rule, use a pencil when calculating and use a ruler correctly.

12 Working Walls and Maths Displays:

The learning environment is key to supporting pupils learning and their development of independence when solving problems/investigating. A maths working wall is a key part of this.

A working wall is the public display of the learning process and may include; objectives, success criteria/steps to success, models and images, challenge, vocabulary or examples of good work.

A maths display is an opportunity to celebrate pupils' success and as such can be found inside or outside of the classroom. Any display that includes a maths element should be highlighted to show cross-curricular links.

Teaching and learning resources (posters etc.) that reflect age related objectives will be displayed within the classroom and beyond to support children's learning.

13 Homework:

Opportunities for pupils to practise and consolidate their skills and knowledge are extended through the regular setting of homework. Teachers should set homework that matches pupil's needs accurately. Homework will be set at least once a week. Where teachers wish to consolidate/ accelerate specific learning this can be increased. Online resources such as 'MyMaths' will be used to supplement weekly homework tasks.

14 Developing Links Across the Curriculum:

Our focus for Mathematics is ensuring that we constantly use opportunities in all areas of our curriculum to develop children's mathematical understanding. For example how data is recorded in science through graphs and tables and then analysed to ascertain results; how reasoning skills can be used in everyday life to solve problems such as budgeting for a holiday or special event or comparing the size and shape of trees on a school trip that is focusing on the local environment in geography or history. Teachers and pupils are encouraged to indicate in books where links can be made with maths, for example, by using 'where's the maths in that' stickers.

15 Interventions and use of Additional Adults:

Interventions are used to support pupils who have been identified through teacher assessment as having gaps in mathematical understanding. Interventions will be reviewed termly by the subject leader/SENCo to assess impact.

Additional adults are used to support learning in class and in interventions.

16 Challenging Children:

Opportunities for children to be challenged and to deepen their understanding further will be created and include challenge, puzzle, games and problem solving clubs and workshops. Teachers will work with the subject leader to identify children who would benefit from additional challenges.

Children and staff will be encouraged to participate in external competitive and non-competitive local and national mathematics games, activities and competitions.

17 Assessment and Moderation:

Assessment is an integral part of teaching and learning and is a continuous process. It is the responsibility of the class teacher to assess all pupils in their class.

Assessment information can be gathered in various ways including by; pupil teacher discussions, observations, through marking, questioning etc.

Whole school formal assessment will take place at the end of each term. Results, alongside teacher assessment, will be used to inform planning for interventions\challenge activities.

Termly year group meetings will moderate teacher judgements against agreed criteria/end of year expectations.

Teachers will participate in regular cross school moderation activities and attend all statutory external moderation.

18 Monitoring and Evaluation:

Monitoring is important as it allows leaders to have an accurate understating of pupils performance.

Monitoring exercises will be undertaken across the year and will include; book scrutinies, observations, learning walks, pupil interviews and moderation meetings.

19 Role of the Subject Leader:

The subject leader is responsible for leading mathematics throughout the school.

This will include:

- Monitoring and evaluation of teaching and learning
- Leading CPD
- Writing action plans
- Assessing the impact of interventions\challenge activities
- Resources

- Analysing data and providing constructive next step guidance to all year groups
- Sharing good practise across the school

20 Parents/Carers:

Parents/carers are important influences on pupils' attitude and attainment. We will actively encourage and involve them in school life by:

- Making available curriculum content
- Homework
- Parent/Carer Workshops
- Information giving sessions
- Parent/Carer helper days
- Parent's/Carer's evenings
- Newsletters
- Inviting parents/carers into school to talk about how they use maths in their lives

21 Reporting to Parents/Carers:

Reporting to parents/carers is undertaken on a termly basis through parent's/carer's evenings and annually through a written report

22 Inclusion and Equal Opportunities:

All pupils have equal access to the curriculum regardless of their race, sex, religious belief or ability. This is monitored by analysing pupil performance throughout the school to ensure that there is no disparity between groups.

23 Review of Policy:

This policy was written by Vicki Nurse (Mathematics Subject Leader) and is subject to amendment during the year to reflect progress and development. The policy will be reviewed further in September 2019.

'Winners of the 2017 Dragons' Den Maths Game Competition, Liverpool'