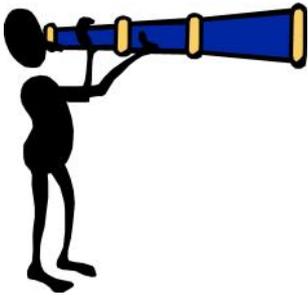




All Saints C of E Primary School

Continuing the
**Mathematics
Journey**





Pure mathematicians just love to try unsolved problems - they love a challenge.

Andrew Wiles





All Saints C of E Primary School

Through Christian teaching, we aim to develop an inclusive learning community, where through strong relationships the achievements of all are celebrated.

Mathematics Policy

Aims

At All Saints C of E Primary School we encourage children to:

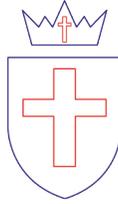
- Develop children's knowledge and understanding of Mathematical concepts whilst enabling them to practise and use a variety of skills and methods;
- Enable them to think critically and communicate their understanding, demonstrating mathematical reasoning;
- Give them opportunities to apply learnt mathematical skills in different contexts in Maths and across the curriculum;

The new curriculum 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 contextual 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.

Through the teaching of Mathematics we will also:

- Continuously give the children new experiences that results in them having wider vocabularies.
- Encourage the children to improve their application of different language structures.
- Make units of learning link with Personal, Social, Health and Economic development.
- Develop critical thinking skills through collaborative problem solving.



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Mathematics Guidelines

1. Assessment

Assessment of a child's progress and needs in maths is the starting point for all teaching and learning and continues to be the major priority for class teachers. Maths assessment should reflect the general principles and procedures in the school's assessment policy as well as the specific assessment methods laid down in the following guidelines.

When teachers plan we use a digital assessment grid where the objectives have been taken from the 2015 Mathematics Curriculum. The objectives are organised into 6 strands, including the Number system, Calculating, Fractions, decimals and percentages, Measurement, Geometry and Statistics.

2. Curriculum

All subject policies, guidelines and learning progressions in All Saints C of E Primary School must be written in a manner which meets the following principles designed by the teachers.

- Teachers can continuously and accurately assess the attainment of all children.
- Teachers are easily able to select learning objectives that match the attainment of different groups of children (including children who have SEN or EAL).
- There is a clear progression of targets that enable the children to self-assess their learning.
- Specific language structures and key vocabulary are given a central position in all units of learning.
- There are frequent opportunities for the children to use their mathematical learning in all subjects.
- Children are given regular experiences of learning outside of school and with

visitors.

- Learning progressions and schemes of work encourage the children to learn and think like a scientist, historian, geographer, artist, designer, musician, programmer etc.
- Units of learning are given a purpose, context and audience and include many collaborative problem solving tasks.
- Any policies, guidelines or progressions should be written for adults with limited confidence, subject knowledge or experience.
- There is an accessible bank of resources that adults can use to deliver the full range of learning objectives in subject progressions.

2.1 Foundation Stage

The school follows the 'Development Matters in the EYFS' document which enables the school to fulfil the requirements of the 'Statutory framework for EYFS'. Our EYFS curriculum incorporates the themes of unique child, positive relationships and enabling environments.

The school follows the Statutory Framework for the Early Years Foundation Stage and the children are given opportunities to:

- Learn competence in recognising, ordering numbers and counting out objects reliably to 20;
- Sort objects and notice patterns using a range of resources;
- Add and subtract using objects as well as counting on and back in their heads;
- Recognise 2D and 3D shapes and be able to talk about their properties.
- Begin to recall number facts, such as doubles and halves of numbers.
- Show understanding and start to use language appropriately to talk about money, time, capacity, length and weight.

2.2 Key Stage 1 and 2

The school aims to meet the statutory requirements laid out in the New Mathematics Curriculum 2015 and is designed to promote fluency, reasoning and problem solving.

In Key Stage 1 and 2 children should be taught a range of skills in the following strands:

- Number
- Calculations
- Fractions, decimals and percentages
- Geometry
- Measurement
- Statistics (except for Year 1)

Please see the new curriculum framework for a breakdown of all the objectives covered.

3. Planning

3.1 Long and Medium Term Planning

Units of learning are planned and organised by the class teachers in Key Stage 1 and 2, depending on each class's individual needs and weaker areas in their assessments. In the Foundation Stage class teachers use topics and formative assessments to plan teaching and learning so that all the skills taught are related to the topic. Cross curricular links are used in many of the classes to make the learning more meaningful and allow more connections to be made between the different subjects.

Medium term plans are organised by the class teachers and each strand is given an allocated number of weeks where they should be taught out of the school year. This is broken down as follows currently: Number, Calculating and Fractions strands 20% (23 weeks), Geometry and Measurement strands 15% (6 weeks on each of these strands) and 10% on Statistics (4 weeks on this per class, except for Year 1).

Teachers can choose when they teach these allocations throughout the year and this is often decided by looking at the last teachers assessment and focusing on weaker areas and priorities for their particular class.

3.2 Unit Planning

We believe that for successful learning to take place, teachers need to understand what the children know and then plan next steps for each attainment group. Therefore the teachers use their digital assessment grids as the main planning tool to decide what needs to be taught next. Objectives are taken to build on known facts and learning from the appropriate Year group. Children working significantly lower or higher than this are planned for according to any gaps that need to be re-taught or extension tasks to ensure every child is challenged and enthusiastic about their learning.

3.3 Short Term Planning

Lesson plans should include:

- Oral / mental starter objective **and** a main lesson objective to be taught / modelled within the whole class part of the lesson (Key Stage 1 and 2);
- Useful list of mathematical vocabulary to be used / modelled within the lesson;
- Differentiated independent tasks;
- Plenary to review the objective and learning;
- Evaluation and assessment of learning.

4. Teaching and Learning

Teaching and Learning in Mathematics supports the general principles and procedures set out in the school's Teaching and Learning policy as well as the specific expectations

laid down in the following guidelines.

The school uses a variety of teaching and learning styles in mathematics lessons. Children have the opportunity to use a wide range of resources such as number lines, number squares, digit cards and small apparatus to support their work. They use ICT in mathematics lessons where it will enhance their learning, as do the teachers in modelling ideas and methods. Wherever possible, we encourage the children to use and apply their learning in everyday situations.

In all classes there are children with differing maths ability. We recognise this fact and provide suitable learning opportunities to all the children by focusing heavily on Assessment For Learning. Teaching Assistants within All Saints Primary are viewed as an important 'asset' to the school and as such, are appropriately involved in the planning and delivery of the maths curriculum. Their knowledge and skills are constantly updated and supported by being involved in school inset / training days.

Within our daily maths lessons in Key Stage 1 and 2 the classes are often split into 2 groups and will work on different oral / mental starter and main lesson objectives. This ensures that the children are being challenged appropriately and working on their next steps to make good progress.

Children often work in different ways: independently and collaboratively (in pairs and groups) so that they have frequent opportunities to talk to adults and other children about their tasks to encourage their reasoning skills.

5. Equal Opportunities

Provision in Mathematics supports the general principles and procedures set out in the school's Accessibility, SEND and Behaviour policies as well as the specific expectations laid down in the following guidelines.

The Special Educational Needs Co-ordinator (SENCo) liaises regularly with the Maths Subject Leader and the SLT to plan interventions at Wave 2 and 3. Children working below expectations are involved in a range of interventions, some which are delivered in class and others that occur in the Hub. This is monitored and evaluated every half term, where changes are made where needed.

They will then discuss with class teachers and teaching assistants how these interventions will be managed and also supported in class.

Class teachers have responsibility for differentiating learning in all areas of maths and deploying teaching assistants effectively.

6. Learning Environment

Foundation Stage and Key Stage 1

Maths learning should be seen as an important life skill that has broader links with every day life across all the subjects in each classroom. Therefore there should be maths links / activities in a variety of contexts where applicable including:

- Role play area
- Classroom computer
- Small world area
- Carpet area
- Sand / water area
- Interactive maths displays / resources
- Listening area
- Knowledge and understanding of the world area
- Creative area
- Large number line / washing line with appropriate numbers displayed
- Large clock with hour and minute hands
- Number squares
- Number lines (with and without numbers on).
- Real and plastic coins
- A range of different sized 2D and 3D shapes
- A variety of counters for practical activities
- Cubes
- Numicon shapes and supporting materials

Years 3 and 4

- Posters displaying maths vocabulary
- Number lines
- Number squares
- Classroom computer
- Multiplication grids for times tables
- Cubes
- 2D and 3D shapes
- Counters
- Measurement materials including rulers, metre rulers etc
- Real / plastic coins

Years 5 and 6

- Calculators and protractors
- Poster for mathematical vocabulary
- Number squares
- Number lines
- Cubes
- A range of 3D shapes
- Classroom computer
- Number line with positive / negative numbers
- Multiplication grids

7. Homework and Parental Involvement

Homework in Mathematics supports the general principles and procedures set out in the school's Homework and Parental Involvement policies as well as the specific expectations laid down in the following guidelines.

Homework sent home will be based on learning / practising number facts by memory including number pairs that make 10, 20 or 100, doubles and halves and times tables.

In conjunction with the school's parental involvement policy and liaison with the Parental Involvement Co-ordinator the Maths Subject Leader is responsible for ensuring that teachers share targets and support ideas with parents/carers. This should be done by:

- Parents afternoon;
- Numeracy workshops / coffee mornings;
- Ideas and class activities shared on the school website;
- Class assemblies;
- Notes on maths homework.

8. Resources

There is a maths cupboard located in the hall which has a range of extra resources covering all of the areas of maths, including Number, Calculations, Fractions, Geometry, Statistics and Measurement. An audit of resources and needs in terms of training are carried out annually.

There are a range of Numeracy resources available on the school network for use on the Interactive whiteboards covering all the areas of maths.

9. Health and Safety

Provision in Mathematics supports the general principles and procedures set out in the school's Health and Safety policy as well as the specific expectations laid down in the following guidelines

10. CPD and Monitoring

The subject leader is responsible for auditing the confidence of teachers in delivering the policy and guidelines and monitoring the standards of teaching and learning across the school. They must ensure that new members of staff are made aware of important documents and provide support where needed so that there is consistency in terms of approach and expectations.

At least once each term the subject leader will conduct a scrutiny of learning using the children's folders and teacher's planning before providing feedback to the rest of the teaching staff. At the end of each academic year the subject leader will analyse the formative and summative assessments submitted by class teachers to inform their judgements on attainment and progress.

On an annual basis the subject leader will complete a digital evaluation tool of all areas of the subject which then forms the basis of the position statement and action plan. Within the action plan the subject leader will identify areas for INSET. These documents are then submitted to the Curriculum Lead who will use the collated findings to inform the Senior Leadership Team (SLT) when they are writing the School Improvement Plan (SIP) and setting future priorities.

INSET and lesson observations will be dictated by the school's cycle of monitoring and development planning set out in the SIP.

Miss. R. Tanner
Mathematics Subject Leader
September 2017



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