



Mathematics Policy

Date Policy Created;	January 2022
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Policy Agreed by Governors;	January 2022
To be reviewed;	September 2022
UNCRC (United Nation Convention of the Rights of a Child) Articles included in this policy;	1, 2, 3, 4, 5, 6, 12, 15, 16, 17, 23, 24, 28, 34, 36 and 39

Our Mission Statement

At St Anne's RC Primary School, we work together, learn together, play and care together in God's love to enable each unique person to achieve their full potential.

We aim to meet the needs of every child through a challenging, enriched curriculum, where everyone feels valued and respected. Providing a safe, secure and stimulating learning environment through an inclusive partnership between children, parents, our school, our church and the wider community.

Aims

- ❖ To solve real-life problems in practical, creative and innovative ways
- ❖ To have sufficient depth of knowledge and understanding to reason and explain mathematical concepts and procedures.
- ❖ To foster a sense of enjoyment and curiosity about the subject.
- ❖ To apply their skills to other areas of the curriculum e.g. science, technology, computing
- ❖ To apply their skills in their daily lives e.g. personal finances, cooking, time keeping
- ❖ To use their prior knowledge to approach unfamiliar questions or problems
- ❖ To make links between the topics they have studied
- ❖ To accept that making mistakes is a part of the learning process

In the EYFS (Nursery and Reception), the teaching of maths is based on the area of learning Mathematical Development. This is broken into two strands;

- **Number-** providing children with opportunities to **develop** and improve their skills in counting, understanding and using numbers, calculating simple addition. and subtraction problems.
- **Numerical Pattern** to describe and explore shapes, space and measures

In Key Stage 1 & 2 the teaching of maths is based on the **three aims of the national Curriculum which are;**

- **fluency** 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.
- **reasoning** mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- **solving problems** by applying their mathematics to a variety of routine and nonroutine problems with increasing sophistication, including breaking down problems into a series of smaller steps and persevering to seek solutions.

Working Walls

- Should be current and give the title of the current maths topic
- Provide visual prompts, examples of methods being taught, demonstrate concrete and pictorial representations of concepts being taught.
- Display key vocabulary with definitions if necessary.

Concrete, Pictorial Abstract

When introduced to a new concept, children should have the opportunity to build competency by taking this approach.

Concrete – children should have the opportunity to use concrete objects and manipulatives to help them understand what they are doing.

Pictorial – alongside this, children should use pictorial representations. These representations can then be used to help reason and solve problems.

Abstract – both concrete and pictorial representations should support children's understanding of abstract methods.

Cross Curricular Links

- Maths naturally links to many other subjects such as Design & Technology, Science, Geography and Physical Education. The children are introduced to a Maths concept before it arises in another subject so learning can be consolidated. For example, if

a Design Technology unit involves making a fresh pizza, pupils would be taught about weighing using grams and kilograms prior to the unit

Maths Language

The following strategies are used to build children's mathematical vocabulary, understanding and confidence.

Full Sentences

Encourage children to use full sentences when reasoning, explaining or discussing maths. This helps both speaker and listeners to clarify their own understanding. It also reveals whether or not the speaker truly understands, enabling you to address misconceptions as they arise.

Stem Sentences

These important sentences help children express mathematical concepts accurately and should be used in daily maths lessons. Children should be encouraged to repeat them frequently, whether working independently or with others. Examples of stem sentences are: '4 is a part, 5 is a part, 9 is the whole.' 'There are ... groups. There are ... in each group.' Teachers and children alike need to use full sentences to explain or respond. When children use complete sentences, it both reveals their understanding and embeds their knowledge.

Key Vocabulary

The Teacher Guidance for Power Maths and White Rose Maths list important mathematical vocabulary for every unit and lesson. Key language is to be displayed on working walls and used in lessons by pupils and adults.

The Teaching Sequence

Discover

A practical real-life problem arousing curiosity. Children find the maths through storytelling.

Share

Teacher led, this interactive session follows the Discover activity and highlights the variety of methods that can be used to solve a single problem.

Work Together

Children work in pairs / groups to discuss questions and record their answers on mini whiteboards. Concrete resources to be used where necessary.

Practice

Children work independently in their Practice Books. Teacher / and or TA to work with target children / SEN children.

Reflect

The reflect section provides children with the opportunity to check how deeply children understand the target concept.

Maths in EYFS and Key Stage One

Nursery

The Maths lesson

One 15 minute session of maths taught daily using a range of number and shape resources. These sessions are linked to the children's topic and help embed early counting skills and exploring shape space and measure. Discussions of learning with a partner and verbal feedback/ peer assessment linked to the learning objective is a part of each lesson.

Daily counting (during morning carpet session)

Children have one focus session per week. This session is planned as a physical lesson incorporating the children's gross and fine motor development into their maths learning. For example- exploring their outdoor environment with handmade 'shape binoculars' to search for 2d and 3d shapes in their environment or using their bodies to explore moving in a variety of ways to reach a number tile on the ground, hopping, jumping, skipping etc.

Classroom display

Number of the week is displayed in the classroom maths area. The number is introduced on a Monday and the display is changed with the children, having them selecting the correct number, searching for items around the room. Children

also have access to a number table which has a range of resources allowing the children to explore the number. The classroom learning wall is updated weekly to display the children's focus of the week. This includes interactive resources, pictures and work of the children that links to the learning being shared.

Maths within the learning environment

Maths is incorporated into all of the children's learning. Ensuring both the classroom area and the outdoor environment has a maths enhancement which is changed fortnightly. For example- a range of numbers buried in the sand tray. Children use tools to dig out the numbers and are supported in trying to order the numbers correctly. Outdoors, children may be challenged to build a structure in the construction area using a range of equipment; boxes, large polygon construction, crates and tyres. This helps them explore shape within their environment and build an understanding of how to use 2d and 3d shapes correctly.

Reception

The Maths Lesson

One 20 minute session of maths taught daily using the White Rose scheme of work with their interactive resources and a wide range of number and shape resources. This year Reception are piloting the Mastering Number program as a basis for the teaching of number. Discussing learning with a partner. Verbal feedback/ peer assessment linked to the learning objective.

Daily counting (during morning registration)

Children have one focus session per week in ability groups based on the maths being learnt that week.

Classroom display

Number of the week displayed in the classrooms maths area. The number is introduced on a Monday and the display is changed with the children, having them selecting the correct number, searching for items around the room and creating art work that display the number. Children also have access to a number table which has a range of resources allowing the children to explore the number. The classroom learning wall is updated weekly to display the children's focus of the week. This includes interactive resources, pictures and work of the children that links to the learning being shared.

Maths within the learning environment

Maths is incorporated into all of the children's learning. Ensuring both the classroom area and the outdoor environment has a maths enhancement which is changed fortnightly. For example- weighing scales in the water tray where children can use a range of equipment to fill and empty the scales to discuss if the capacity is balanced or unbalanced. Outdoors, children may be challenged to think of how to record time when completing an obstacle course- they are provided with a range of digital timers, sand timers, number lines and instruments to work out a format to use to time their friends.

Year 1

The Maths Lesson

1 hour of maths taught daily using the Power Maths scheme flexibly. This includes;

- Daily counting (at least three minutes per day)
- Flashback Four – revisit questions

Y1 has introduced the Challenge Curriculum this year so children complete the activities in the Practice Books in a small group with adult support. Each week a Maths challenge is set to revise previous learning.

Additional number sense sessions are taught four times per week (See appendix 1 Arithmetic Policy)

Year 2

The Maths Lesson

1 hour of maths taught daily using the Power Maths scheme. This includes;

- Daily counting (at least three minutes per day)
- Flashback Four – revisit questions

Additional number sense sessions are taught daily every other week (See appendix 1 Arithmetic Policy)

Maths in Key Stage 2

Year 3 and 4

The Maths Lesson

One hour of maths taught daily using the Power Maths scheme. This includes;

- Daily counting (at least 1 minute per day)
- Flashback Four – revisit questions

Additional 10 minute arithmetic sessions are taught daily. (see Appendix 1)

Year 5 and 6

The Maths Lesson

One hour of maths taught daily using the Power Maths scheme where appropriate.

- Daily counting (at least 1 minute per day)
- Flashback Four – revisit questions

Additional 10 minute arithmetic sessions are taught daily. (see Appendix 1)

Resources

- Power Maths subscription, textbooks and Practice Books
- White Rose Maths Premium resource subscription
- Mastering Number resources R-Y2
- Learning by Questions subscription (Y3-6)
- Number resources – Numicon, counters, multilink cubes, bead strings, Cuisenaire, base ten apparatus, place value counters, tens frames, place value cards, place value grids, number lines / squares, Rekenreks
- Shape resources
- Measure resources – weights, scales, rulers, capacity containers, mini clocks, coins and notes
- Times Table Rockstars and Numbots subscription

Assessment & Planning (refer to assessment and planning policy)

-for learning (formative)

- Learning Objective and outcomes clear and explicit
- Observation of children's explanations and reasoning
- Questioning
- Mini whiteboard work
- Demonstrating understanding through use of concrete resources
- Self-assessment (thumbs up)
- Discussing with a partner
- Verbal feedback from adult linked to Learning Objective
- EYFS observations of children's independent learning and group focus activities. These recordings are uploaded to Tapestry.

-of learning (summative)

- EAZ MAG Writer
- NTS termly tests / Practise SATs in Y2 and Y6
- Arithmetic tests (Rising Stars)
- Teachers in Y2-6 to track Times Table Rockstar statistics and target children who need to focus on a particular times table.

Planning will build on **prior knowledge**.

Children with SEN, and/or learning difficulties or disabilities will work towards the same objectives with support. Those working well below the level of their peers will be working on a related objective from an earlier year group (using White Rose Maths premium resource activities / Power Maths Practice books)

Children who are gifted and talented will be working to deepen or broaden their understanding of the objectives.

Children learning English as an additional language (EAL) will receive appropriate support (e.g. pre-teaching, concrete resources) to enable them to access the lesson.

Intervention

Pupils in Y1-6 who need to consolidate learning are identified and targeted in additional sessions with teaching assistants. The 1stClass@Number intervention programs are carried out by highly trained TAs in Y1-3. Pupils in Y4-6 who are identified as needing more support and consolidation take part in 1:1 sessions with a Maths Specialist teacher. The content of the intervention is determined by the class teacher using formative and summative assessment. Pupils within EYFS who need to consolidate their learning are identified and targeted when they independently learn within both the indoor and outdoor environment.

Maths at home

Pupils in Y2-6 are able to log into Times Table Rockstars (TTRS) at home to become more fluent in multiplication and division key facts. Pupils in Y1 & 2 are able to log in to Numbots which supports building fluency and understanding in mental calculation. Afterschool clubs are provided weekly to provide support pupils who have limited access to technology and the internet at home. Additionally, maths homework is given at the teacher's discretion.

We recognise that children make better progress when they are supported at home and when there is good communication between child-school-home.

We communicate with parents by:

Parent Consultations

Tapestry (EYFS)

Seesaw (KS1 & 2)

Maths Workshops

EYFS stay and play sessions

EYFS half termly newsletters sharing the maths focus and how to support this at home

Monitoring and Evaluation

This policy will be evaluated and reviewed annually.

Last updated January 2022

Appendix 1

St Anne's Primary School Arithmetic Policy

Arithmetic practice is vital for practising previous learning so the children's working memory doesn't become overloaded when reasoning and problem solving with more complex multi-step problems.

Arithmetic and revision in KS1

Y1 & Y2

- **Daily** afternoon sessions for 15 minutes following the Mastering Number program
- From January children will complete a Rising Stars arithmetic test weekly
- Flashback four revision questions to be completed daily on mini whiteboards.

Arithmetic and revision in KS2

Y3 & 4 to complete daily arithmetic session for 10 mins

Y5 & 6 to complete daily arithmetic session for 10 mins

Flashback four questions completed daily.

Each week all classes to complete a Rising Stars Arithmetic test.

Time

In addition to this, pupils have a short daily discussion around time in digital and analogue form to support learning to tell the time as this was identified across school as a topic most pupils find challenging.

Appendix 2

Multiplication Timetable

Y1	To Count forwards & backwards in 2s, 5s, 10s
Y2	To revise counting forwards and backwards in 2, 5, 10, 3 To learn the multiplication & division facts for 2, 5, 10, 3 times tables
Y3	To revise the multiplication facts for 2, 3, 5, 10 times tables. To learn the multiplication and division facts for the 4, 8, 9. 11 times tables
Y4	To revise the multiplication facts for 2, 3, 4, 5, 8, 9, 10, 11 To learn the multiplication and division facts for the 6, 7, 12 times tables Multiplication Tables Check
Y5 /6	Revise all times table facts up to 12 x 12