



Maths Policy

November 2022

(Review November 2023)

CAPTAIN WEBB PRIMARY SCHOOL

Maths policy

At Captain Webb, we are committed to ensuring that children are able to recognise the importance of Maths in the wider world and that they are also able to use their mathematical skills and knowledge confidently in their lives in a range of different contexts. We want all children to enjoy Mathematics and to experience success in the subject, with the ability to reason mathematically. We are committed to developing children's curiosity about the subject, as well as an appreciation of the beauty and power of Mathematics.

Aims of teaching

At Captain Webb, our intent for mathematics is to teach a rich, balanced and progressive curriculum that helps children develop an ability to solve problems, to reason, to think logically and to work systematically and accurately. We believe that equipping our children with fundamental maths skills will pave pathways to creating resilient, forward-thinking learners, who will continue to build upon these skills in every key stage.

Through our maths learning, we provide opportunities which cater for the needs of all individuals and sets them up with the necessary skills and knowledge for them to become successful in their future adventures. We aim to prepare them for a successful working life; we incorporate sustained levels of challenge through varied and high quality activities that use maths to reason, problem solve and develop fluent conceptual understanding in each area.

1. Teaching and learning

In EYFS, Key Stage 1 and Key Stage 2 Maths is taught on a daily basis.

In each aspect of the Maths Curriculum and throughout each key phase, the children embark on a contextualised mathematical journey. This ensures that there is breadth and depth to the curriculum offer.

Each journey consists of the following:

- 1) Use of Assessment to build on pupils' existing knowledge and understanding.
- 2) Use of well-planned manipulatives and representations which the children can then draw upon independently in the future. (See Jottings Policy)
- 3) The teaching of strategies in order for the children to solve calculations (See Calculation Policy).
- 4) Opportunities for the children to make connections between mathematical facts, procedures and concepts, thus developing a rich network of mathematical knowledge.
- 5) The development of independence and motivation in order to develop metacognition-the ability to independently plan, monitor and evaluate their thinking and learning.
- 6) The use of contextualised tasks and resources which challenge and support pupils' mathematics; deepening their thinking with models of proof and conjectures.

Through our creative curriculum approach, we also seek to explore and utilise further opportunities to use and apply mathematics across all subject areas which is promoted during our Theme work in the afternoon.

We recognise the importance of establishing a secure foundation in mental calculation and fluency. Therefore, each lesson is begun with K.I.R.F. Time (Key Instant Recall of Facts) These sessions last for approximately ten minutes and give the children the opportunity to learn, recall and embed number facts to support standard written methods and give the children the knowledge to access the wider

maths curriculum. We use accurate mathematical vocabulary in our teaching and children are expected to use it in their verbal and written explanations.

2. Programmes of study

At Captain Webb Primary School, we use the National Curriculum for Mathematics (2014) as the basis of our mathematics program, supported by White Rose Material The National Curriculum order for mathematics describes in detail what pupils must learn in each year group. This is reflected in our long-term plans and medium-term plans. These plans, combined with Captain Webb's Calculation Policy, ensure there is continuity, progression and high expectations for attainment in our mathematics units.

We are committed to ensuring that all pupils build on previous knowledge and achieve mastery in the key concepts of mathematics, appropriate for their age group. By doing so, we ensure genuine progress is made and any gaps in knowledge are addressed.

Through a well-planned mathematical journey, pupil's knowledge is built upon. Varying elements of the maths curriculum is presented to the children contextually so that the children understand the purpose of the maths they are learning. With a focus on **fluency**, the knowledge and understanding of key concepts is developed and deepened through quality first wave teaching. Children are then encouraged to **reason** and to **solve a variety of problems** presented to them in a wide range of situations.

3. Foundation stage

Pupils are encouraged to develop their Problem Solving, Reasoning and Numeracy in a broad range of contexts in which they can explore, learn, enjoy, practise, discuss and extend their skills. Pupils are encouraged to exploit their mathematical potential in both indoor and outdoor environments. They are provided with a wide range of activities that promote regular active participation, exploration of real life problems, development of imaginative play and early experience of mathematical language. All pupils are supported positively and encouraged to gain confidence and competence in their skills.

By the end of the Foundation Stage pupils should be able to count reliably with numbers from 1 to 20, place them in order and say which number is one more or one less than a given number, using quantities and objects, add and subtract two single-digit numbers and count on or back to find the answer. Solve problems, including doubling, halving and sharing. The children should be able to use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems. Recognise, create and describe patterns.

Key Stage 1

The principal focus of mathematics teaching in Key Stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the four operations, including with practical resources (e.g. concrete objects).

At this stage, pupils should develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money.

By the end of Year 2, pupils should recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100. They should be precise in using and understanding place value. An emphasis on practice at this early stage will aid fluency.

Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing

word reading and spelling knowledge at Key Stage 1.

Lower Key Stage 2

The principal focus of mathematics teaching in lower Key Stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value. This should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers.

At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number.

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.

Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.

Upper Key Stage 2

The principal focus of mathematics teaching in upper Key Stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio.

At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.

By the end of Year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages.

Pupils should read, spell and pronounce mathematical vocabulary correctly.

All classes have a daily mathematics lesson. In Key Stage 1 lessons are 45 – 60 minutes and in Key Stage 2 at least 90 minutes so that , Maths fluency (KIRF) can be taught

Teachers in EYFS ensure the pupils learn through a mixture of adult led activities and pupil initiated activities both inside and outside of the classroom. Mathematics is taught through an integrated approach.

4. Cross-curricular links

Cross-curricular links are embedded throughout our curriculum, which allows children to make links with their learning and explore Maths in real-life contexts. Maths skills are also mapped out across our Science and Geography curriculum, focussing on Measure, Statistics and Geometry.

5. Assessment

Short term

Children's class work is assessed frequently through:

- regular marking
- analysing errors
- questioning

- discussion
- Progress checks
- plenaries

Teachers make regular assessments of pupil's knowledge at the start of each new unit of work. Assessment outcomes are recorded against key knowledge and these contribute towards final judgements of a child's knowledge and understanding. Targets are set considering what children must know and now need in order to progress.

A record of a child's attainment against the key objectives for the appropriate year group is recorded in a school proforma. Class Teachers analyse these assessments to inform future planning and interventions.

This is used to inform future planning and teaching. Lessons are adapted readily and short term planning is evaluated in light of these assessments.

Termly assessments are to be carried out across the school using the White rose assessment materials for each year group. These materials are to be used alongside judgements from class work to form a teacher assessment for each child. These judgements are then passed onto the assessment leader to be fed into the whole school tracking system.

Long term

Y2 and Y6 to complete SATs assessments every May. These are analysed and helps to inform the next Academic Year's Action Plan for the development of the subject

6. Equal opportunities

Positive attitudes towards mathematics are encouraged, so that all children, regardless of race, gender, ability or special needs, including those for whom English is a second language, develop an enjoyment and confidence with mathematics. The aim is to ensure that everyone makes progress and gains positively from lessons and to plan inclusive lessons. Lessons involving lots of visual, aural and kinaesthetic elements will benefit all children including those for whom English is an additional language (EAL). Differentiated questions are used in lessons to help children and planned support from Teaching Assistants and other adults.

7. Resources

All teachers organise an area within the classroom dedicated to mathematics resources. This area is easily accessible to all children and allows them to become familiar with all resources.

A working wall and washing lines are also evident in every classroom and is a visual record of the mathematical journey the children are on. These can be easily accessed by the children, in order to embed key objectives and be a model for good practice. Walls are updated regularly in accordance with the area of maths being taught at the time.

Working walls contain:

- Vocabulary

In each classroom maths vocabulary and enquiry questions are displayed and discussed regularly.

- Models and Images

In each classroom we also display models and images to stimulate mathematical thinking, whether they are of children's work, teachers' modelled examples or of materials that support mathematical processes.

Magical Mistakes

This encourages the children to spot errors in workings and deepen their understanding of methods and mathematical procedures.

- Key conversion tables for measures and time

- Examples of written strategies, appropriate to year group and ability.

8. Differentiation

In school, we aim to meet the needs of all our children by differentiation in our maths planning and in providing a variety of approaches and tasks appropriate to ability levels.. This will enable children with learning and/or physical difficulties to take an active part in mathematical learning through practical activities and investigations and to achieve the goals they have been set. Some children will require closer supervision and more adult support to allow them to progress whilst more able children will be extended through differentiated activities. By being given enhancing and enriching activities, more able children will be able to progress to a deeper level of knowledge and understanding appropriate to their abilities.

9. Role of the subject leader

It is the responsibility of the subject leader to monitor the standards of children's work. The subject leader is also responsible for supporting colleagues in their teaching, for being informed about current developments in the subject, and for providing a strategic lead and direction for science in the school.