Maths Policy

CAPTAIN WEBB PRIMARY SCHOOL

Curriculum

Document History

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Written by – N Weston

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Intent

At Captain Webb Primary School, our overarching principle about learning is: 'Knowing more and Remembering more'. We have designed our curriculum so that more time is given to embed key knowledge, make connections and be ready for the next stage of a child's learning journey.
Through their growing knowledge and understanding, we aim to make all our children confident and competent mathematicians, who can make links in their maths learning to other areas of the curriculum.

We aim to provide all pupils with a challenging mathematics curriculum and high-quality teaching to produce individuals who are numerate, creative, independent, inquisitive, enquiring and confident. We also aim to provide a stimulating environment and adequate resources so that pupils can develop their mathematical skills to the full.

Through our well-planned maths learning journeys, we provide opportunities which cater for the needs of all individuals and empowers them with the necessary skills and knowledge to become successful in their future adventures. We incorporate sustained levels of challenge through varied and high-quality activities and ensure that children are on track at each stage of their education in fluency, reasoning and problem solving. Thus, in turn will prepare them for the next stage of their education and a successful working life.

Implementation (Planning an inclusive curriculum).

Our inclusive knowledge-based curriculum plans for success. Through small, well-sequenced steps (as outlined in our medium-term plans) new mathematical concepts are introduced using a **'Concrete, Pictorial and Abstract'** approach. This enables all children to experience hands-on learning when discovering new mathematical knowledge and allows them to have clear models and images to aid their understanding. This also ensures that models of proof are constructed to exemplify mathematical laws and principles.

The **Concrete-Pictorial-Abstract model** also allows children to build on their knowledge of key concepts in small steps and allows all learners to keep up with the curriculum demands.
This approach to Maths is reflected in our calculation policy and pedagogy, with Teachers modelling and exploring key knowledge through the I-We-YOU approach.
At Captain Webb the scope of our curriculum is inclusive and ambitious. Through declarative, procedural and conceptual knowledge, teacher's use a curriculum ,engineered by the National Curriculum and White Rose, to ensure that children are exposed to mathematical knowledge and concepts which will prepare them for their next stage in education. It is our belief that mathematicians are best developed through memorisation of core facts and formula.

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) Activating Prior Knowledge
   Use of a variety of assessments to revisit and build on pupils' existing knowledge and understanding.
2) Instruction
   Use of well-planned manipulatives and representations which the children can then draw upon independently in the future. (See Jottings Policy)
3) Modelling of strategies
   The teaching of methods and procedures in order for the children to solve calculations in preparation for reasoning and problem solving (See Calculation Policy).
4) Guided Practice.

Opportunities for the children to make connections between mathematical facts, procedures and concepts, thus developing a rich network of mathematical knowledge.

5) Independent Practice.
   The development of independence and motivation in order to develop metacognition-the ability to independently plan, monitor and evaluate their thinking and learning.
6) Structured reflection
   The use of contextualised tasks and resources which challenge and support pupils' mathematics; deepening their thinking with models of proof, generalisation 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.

Early Years

The 2024 Development Matters, which supports the statutory framework, is used to drive the curriculum and is supported by Numbersense. It is widely accepted that early acquisition of core maths facts is a significant indication of future success. In reflection of this, Numbersense was introduced in Reception in September 2023. This program is reflective of phonics. Its rigorous and repetitive approach ensures children retain knowledge in order for them to move on to the next stage of their learning.

The curriculum in Early years focuses on depth over breadth. Pupils are encouraged to develop their Problem Solving, Reasoning and fluency 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 enabling 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.

It is essential that children leave Early Years with a strong sense of number so that children are ready for the Year 1 curriculum.

This is achieved through:

- A sequenced, progressive learning journey.
- Ensuring children are emersed in maths so that times like snack time and play are incidental opportunities to revisit knowledge.
- Planning activities are in place with a clear intent for each session.
- Ensuring independent activities consolidate prior learning or pre-teaching concepts to come.
- Parental engagement and opportunities for families/carers to engage in the curriculum both in school and at home.
- Enquiry based sessions which embedded through play.

Key Stages 1 and 2

The scope of our curriculum design ensures that:

- There are systematic opportunities for retrieval, practice and overlearning.
- The learning journey allows children to practice and revisit key knowledge (as stated in our progression documents).
- Children revisit to the point of automaticity.

- Testing secures facts and methods into the long-term memory.

Planning for Success

Declarative Knowledge.

Declarative knowledge (fluency) is taught daily so that pupils know useful facts and formulae and develop an understanding of relationships and familiar patterns.
Every child's maths learning journeys start with revisiting previous knowledge in order to make connections with the new knowledge to be taught. Sufficient time and resources allow children to gain knowledge and be able retain key information at this stage.

Procedural knowledge

Procedural knowledge is the teaching of procedures and algorithms and is a fundamental part of the learning journey. The school has a clear calculation policy which ensures that there is a reliable, accurate and consistent forward projecting approach. This stage of the learning journey enables our pupils to process mathematical information accurately and at speed.

Conceptual Knowledge

At this stage, the children will know a combination of methods and facts in order to be exposed to a variety of problems and reasoning. These are taught using the variation model so that the children are exposed to a strategy and can over
learn this in order to have a get way into solving a range of challenging, rich and sophisticated problems.

Practice

A core element of our curriculum design is to allow children sufficient time to practice to the point of automaticity. Practice and revisiting of key knowledge is completed daily as part of morning activities; during our KIRF time (Key Instant Recall Facts) where children focus on knowing key facts in order to access the curriculum and be fluent in key skills and in lesson time.

Assessment

NCETM states that: ' If a pupil fails to grasp a concept or procedure, then this needs to be identified quickly and gaps in understanding addressed systematically to prevent them falling behind.' In reflection of this, assessment grids of non-negotiables are used to ascertain what must be known at this point to stay on the long-term trajectory.

Success

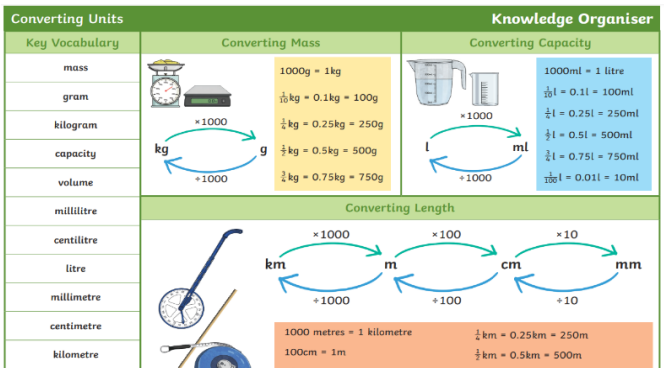
Children can identify and talk about their success against the targets given to them at the start of the unit. These are then shared with parents along with next steps.

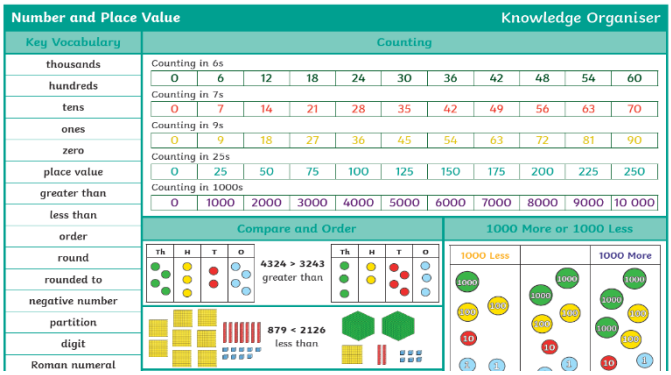
The Use of Knowledge Grids

At Captain Webb we have introduced the use of knowledge organisers to support children in their lessons and at home. These have proved a valuable tool in making children resourceful and independent learners. This is because:

- The knowledge organisers include judiciously selected tier 2 and tier 3 vocabulary. This vocabulary will be taught explicitly to students.
- The knowledge organisers incorporate the building blocks for learning in that subject that all students are entitled to know and understand.
- The knowledge organisers are designed to aid retrieval practice and metacognitive learning.

Here are some examples of the knowledge organisers that we are currently using in different areas in maths:





Knowledge Organisers are used to promote planning, teaching and retrieving previous learning that will have the intended positive impact on our pupils' outcomes, experiences and future opportunities.

Due to the fact that pupils can access their maths knowledge organisers at any time, pupils are supported to become resilient and independent learners.

An Inclusive Approach-Adaptive Teaching

Curriculum Considerations

Adaptive teaching is when teachers "adapt teaching to respond to the strengths and needs of all pupils". Specifically, adaptive teaching requires teachers to:

- Know when and how to differentiate appropriately, using approaches which enable pupils to be taught effectively.
- Have a secure understanding of how a range of factors can inhibit pupils' ability to learn and how best to overcome these.
- Demonstrate an awareness of the physical, social and intellectual development of children and know how to adapt teaching to support pupils' education at different stages of development.
- Have a clear understanding of the needs of all pupils – including those with SEND, those of high ability, those with English as an additional language – and be able to use and evaluate distinctive teaching approaches to engage and support them

Scaffolding

We understand that pupils are likely to learn at different rates and to require different levels and types of support from teachers to succeed.
As a result of this, we seek to understand pupils' differences, including their different levels of prior knowledge and potential barriers to learning.
We adapt teaching in a responsive way, including providing targeted support to pupils who are struggling and offering the opportunity to think deeply within the concept for those who are ready for challenge. This will increase pupil success.
At Captain Webb we follow the mastery curriculum which ensures every learner is confident with a concept before moving onto the next stage. With the mastery approach, most learners will be working towards the same outcome, with teaching being tailored and scaffolded to meet individual needs.
We do acknowledge that there maybe some learners who may require a more personalised approach, including specific learning outcomes and provision to develop fundamental skills. We believe all learners should work alongside their peers. Research by EEF states that '*the best mass learning happens when learners can talk through their ideas with a teacher or a partner and therefore it is encouraged this productive discussion through lessons when planning opportunities talk we ensure that all learners have the support they need to access these discussions which include scaffolding such as sentence frames, visual support and all peer partners*'.
We believe it is important that all learners are given the equal chance to learn core knowledge appropriate to their age. These are highlighted as end points in our Assessments and are crucial so that children can keep up, not catch up.

Key Stage 1

- Learners should have 1-1 correspondence when counting
- Learners should develop automaticity in addition and subtraction facts to and within 10.

- Ensure learners have a concept of 'more than' and 'less then' and can describe the relative sizing of number.
- Encourage learners to represent numbers in many different ways in pictures, as calculation, in words.
- Ensure learners can explain the place value of 10s and ones.
- Use resources such as 10s frames numicon and base 10 blocks confidently to support learning where needed.

Key stage 2

- Ensure learners are secure with all times tables by the end of year four as this acts as a foundation for other maths and concepts.
- Learners should have secure understanding of place value up to 10,000 and beyond.
- Learners begin to apply their knowledge of number and written methods to reasoning problems.

Strategies to Scaffold learning.

At Captain Webb, we support learners in a range of ways to help them to keep up with the curriculum demands. Our adapted lessons consider how all learners can:

- Retain vocabulary.
- Access the Maths curriculum despite literacy difficulties.
- Allocate time to develop conceptual understanding.
- Be fluent in number facts.

Teachers refer to the 'Whole School SEND Teacher Handbook' ,the local Maths Hub and Captain Webb's Strategies for Supporting SEND Document for guidance and support.
https://www.wholeschoolsend.org.uk/resources/teacher-handbook-send)

Impact

We measure the impact of our curriculum through:

Formal and Summative assessments:

- Reception Baseline Data/ELGs
- Optional SATs KS1 and Teacher's Assessment using the framework.
- Multiplication Check Yr 4
- Key Stage Two SATs.

Formative and Internal Assessment

- Numbersense assessment tracks progress in key facts.
- White Rose Assessments are used to track the progress across the sequence of learning.
- Must Have/Now Need Tracking

Internal Monitoring

- Termly Pupil Progress Meetings
- Lesson Monitoring and Book scrutiny
- Pupil Voice

External Moderation

- Cluster Group Moderation.