The Welbeck Federation of Schools

Maths Policy September 2024

Review September 2025

Intent

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 have conceptual understanding and are able to recall and apply their knowledge rapidly and accurately to problems
- **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.

The intent of the Welbeck Federation's mathematics curriculum is to enable our pupils to be able to 'think like mathematicians'. Through a mastery approach, we aim for our children to understand that mathematics is a life skill. It is an essential element of communication, widely used in society, both in everyday situations and in the world of work. We want children to understand that mathematics is all around us and that being a good mathematician opens up endless possibilities.

Why we teach mathematics at the Welbeck federation:

- To equip pupils with the mathematics they need to become numerate.
- To develop their ability to apply mathematical skills with confidence and understanding when solving problems, including problems from everyday contexts.
- To enable pupils to express themselves and their ideas using the language of mathematics with assurance.
- To develop positive attitudes to mathematics, recognising that mathematics can be both useful and enjoyable.
- To nurture a fascination and excitement of mathematics.
- To be able to use and apply the skills in other curricular areas.
- To promote enjoyment and enthusiasm for learning through practical activity, exploration and discussion.

The mastery approach

At The Welbeck Federation we use the mastery approach to ensure that all children have the same opportunities to achieve in maths.

We strongly believe in the use of concrete, pictorial, abstract in building pupils' progression of mathematical knowledge. Children use a range of resources and models such as number lines, part whole models,bar models, Numicon, number squares, digit cards and place value counters to embed knowledge into long term memory.

At the Welbeck Federation, we use White Rose Maths to deliver in depth teaching and mastery learning. We use White Rose Maths overview to follow the scheme of learning, and develop a progression of knowledge. We ensure that knowledge and vocabulary are revisited so that learning can be secured. White Rose Maths assessments used to track progress and attainment.

The expectation is that most pupils will move through the programmes of study at broadly the same pace. However, pupils who do not rapidly grasp concepts, receive additional opportunities to practice fluency with the support of manipulatives, pictorial and written representations and resources. Pupils who grasp concepts rapidly access a challenge which is designed to develop their mastery skills.

Rapid graspers use knowledge to problem solve and reason, where appropriate pupils are moved on to challenge task which is indicated using blue highlighter in books. Pupils who have not grasped the concept, return to teaching point and then fluency to consolidate using a range of manipulatives, pictorial representation, peer and group work. The intention being pupils will have the goal to access some aspects of problem solving or reasoning by the end of the lesson. Learning may be recorded through photographs and scribed annotations; this is indicated using pink highlighter in books.

Maths is taught discretely 5 times a week, with additional times tables and mental arithmetic.

Assessment

Short Term Assessment will be an informal part of every lesson to check understanding, which will help to adjust day to day lesson plans. Teachers will live mark children's work, giving them feedback and key areas they need to work on. Marking will follow the school's marking policy. Medium Term Assessment will take place three times a year in the form of data submission and work scrutiny. Each class complete White Rose end of unit assessments. Work is scrutinised internally and at family of school

moderation to ensure accuracy of assessment. The progress of children will be tracked using the appropriate Year Group objectives. Class teachers are expected to identify children who are below their expected progress and set up appropriate scaffolds.

Monitoring

Monitoring the standards of children's work and quality of teaching in mathematics is the responsibility of the SLT, supported by the subject leaders and governors.
The maths subject leader will attend network meetings, monitor pupils' books, talk to pupils and observe classroom practice through learning walks. In addition, the work of the subject leader involves supporting colleagues in the teaching of mathematics and informing teachers about current developments in the subject.
The mathematics subject leader gives the head teacher an annual summary in which s/he evaluates strengths and weaknesses in the subject and indicate areas for further improvement. An action plan to address issues is created every academic year.

Resources and Display

In our school we have various resources available in the classroom:

- A range of models and images, age-appropriate equipment (class based) practical maths equipment (centrally stored).
- Numicon throughout FS, KS1 and KS2

Children are encouraged to work independently where appropriate within the classroom, selecting the appropriate equipment they need in order to complete the task.
We recognise the importance of a stimulating learning environment. Each classroom has a maths display area, which includes a working wall with mathematical vocabulary, visual aids and clear worked through examples. Annotations from classwork will be present to remind the children what they have done previously.

Times Tables

At the Welbeck Federation, the quick recall of multiplication and division facts (times tables) are viewed with high importance. The ability to recall these facts quickly enables children to answer related questions with ease.

According to the National Curriculum 2014 the expectation of times tables in each Year Group is as follows:

Year 2: 2x, 5x,10xYear 3: 3x, 4x, 8x

Year 4: 6x, 7x, 9x, 11x, 12x (All times tables should be known by the end of year4)

Year 5: All x and ÷ facts (12x12)

Year 6: All x and ÷ facts (12x12) and related language/symbols e.g. % and square root

By the end of Year 4, children will take the national times table test. To prepare the children for this, The Welbeck Federation has invested in Times Table Rockstars, an online game in which the children can create their own rockstar.

Progression from Foundation

Number

In Foundation we sing number rhymes (one more and one less) and number songs. Daily counting sessions and opportunities to rote count take place, for example we use everyday occasions to count people, objects and actions. We compare quantities using milk and fruit time, voting and play, such as sorting (who has more, who has less). Subitising opportunities will be available through dice activities, simple card games and dot patterns. We understand composition of number using 10 frames, part-part whole and Numicon. We drive understanding and recognition of number through number of the week using the Number Blocks resources. Once we have secured a basic knowledge of number, children move towards problem solving including representing patterns within numbers, odds and evens, doubling facts and number bonds to 5 and 10.

Measurement

We develop an understanding and use of language related to different units of measurement by talking to the children about size, weight, capacity and length, using high quality provision to provide opportunities for children.

Children will be given opportunities to compare and contrast measurement e.g. by providing three different sizes for jugs, sieves, cylinders for them to explore. Children understand the basic concept of time through daily visual timetabling, introduction of language to be able to sequence familiar events. The days of the week song is sung daily. Timers are used to help with turn taking.

Geometry

We use propositional vocabulary through everyday occasions by explaining to each other where to find an object, tidying away and looking at maps linked to People, Culture and Communities. We provide opportunities for the children to manipulate shapes and develop spacial reasoning through physical activities such as obstacle courses, making maps, printing with shapes and small construction. We encourage the children to notice and talk about the patterns they see in the environment and books, enabling them to create their own pattern and correct a repeating pattern.

Statistics

Our Foundation children are exposed to statistics using concepts such as voting to talk about preferences, the children display this with pictures and comparing quantity.