



Aspiring Ashwood

Mathematics

Mathematics

Intent



Mathematics enables us to understand and change the world. We want all pupils at Ashwood to experience the beauty, power and enjoyment of mathematics and develop a sense of curiosity about the subject with a clear understanding. We believe all children can achieve in mathematics and teach for secure and deep understanding of mathematical concepts through small, manageable steps. We use mistakes and misconceptions as an essential part of learning and provide challenge through rich and sophisticated problems. Throughout their learning journey at Ashwood, they spend time becoming true masters of content, applying and being creative with new knowledge in a variety of ways.

Planning

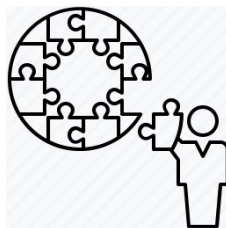


The knowledge, skills and understanding that the children will be taught on their Ashwood journey is clearly mapped out. We use White Rose, which is fully aligned to the National Curriculum.

Our short-term planning takes the form of notebooks. Our medium term plan takes the form of our half-termly overviews and are taken from the White Rose small steps.

Our long-term planning sets out the number of lessons within a unit of work and the flow of these units throughout the year. We cover less content in each lesson but instead, focus on a single concept to explore and understand in depth.

Implementation



Mathematics is taught through a mastery approach to ensure no child is left behind in their learning journey at Ashwood. We move children through the curriculum content at broadly the same pace to enable our children to acquire a deep, long-term and adaptable understanding of mathematics. By doing this, it allows children to develop their self-confidence and build their resilience. By following White Rose's blocked learning sequence, it allows sufficient time to develop deep and sustainable understanding of core maths concepts. This allows time for struggling learners and provides the opportunity for deepening understanding for more-advanced, advanced learners.

Assessment



At Ashwood Spencer Academy, we continually use Assessment for Learning (AFL) to assess children on a daily basis. At the beginning of a KS2 block of learning, children use Learning By Questions (LBQ) as a pre-assessment of knowledge which provides teachers with an insight into retained knowledge and allow further small steps to be built into lessons if required. LBQ is then used at the end of the block to assess knowledge and highlight gaps that will need revisiting. At the beginning of each lesson is an 'Activate' to assess knowledge retention. At the end of the Autumn, Spring and Summer terms, children take a summative PUMA test which enables us to analyse and monitor progress using standardised scores. Formative assessment is continuous throughout lessons, and 'toolkits' are used as a feedback mechanism each lesson.

Metacognition and retrieval practice



The Ashwood approach to mathematics is based on current research. Our lesson structure is built on the principles outlined in the 'EEFS Metacognition and Self-regulated learning' guidance report. At Ashwood, we want learners to be able to monitor, purposefully direct their own learning and make links between their own learning. Therefore, we have adapted the seven-step model for explicitly teaching metacognitive strategies.

1. Activate (Activating prior knowledge)
2. Explain (Explicit strategy instruction). We use 'I do', 'We do' and 'You do' to help with the memorisation of the strategy.
3. Misconception Buster (Taken from Tom Sherrington's WalkThrus)
4. Varied Fluency (Guided practice)
5. Reasoning and problem solving (Guided practice)
6. Independent practice
7. Reflection (through the use of toolkits)

Retrieval practice is a key element to our approach to mathematics as we want to ensure we interrupt the forgetting. Children complete a weekly 'Four Lasts' which involves revisiting learning from 'Yesterday', 'Last Week', 'Last Term' and 'Last Year'. We encourage the use of journaling in KS2 (on the left hand side of their maths book) so no learning becomes 'lost'. Children use this to help scaffold their own learning.

Interventions



When a child fails to grasp a particular concept or procedure, we quickly identify the need for early intervention to ensure the child is ready to move forward with the whole class in the next lesson. These interventions are delivered by our Learning Ambassadors and Teachers on the afternoon of the same day where possible. KS1 use the NCETM's Mastering Number programme as an additional lesson on their timetable. This happens for 10 minutes a week, four times a week. KS2 teams supplement their interventions with the use of LBQ which provides instant feedback to the adult. SHINE Interventions are used in to support learners achieve their potential. SHINE Interventions are created from the Rising Stars PIRA tests. They pull out the children who need to improve a specific reading skill and provide intervention materials.

Mathematics

National Curriculum



Learning Environment and Cultural Capital



EYFS



Ambitious for DP, SEND and EAL



CPD and Monitoring



An Ashwood Mathematician



Our planning is aligned to the 2014 English National Curriculum and addresses the aims of the mastery curriculum.

Lessons have been carefully crafted as a result of mathematical research. The mastery approach is based on pupils being taught longer units of work over the course of the year to ensure that they have the time to cover the different areas of mathematics in more depth. Lessons provide the small building blocks required to develop a genuine conceptual understanding.

At Ashwood, we build cultural capital through hosting events such as TTRockstars Day and NSPCC Number Day.

We make cross-curricular links where possible and provide hands on, real-life experiences. There are opportunities across the curriculum for pupils to apply their mathematics skills for example, measuring heart rates and jump lengths in PE, using statistics in science and coordinates in geography. We develop children's reading skills through mathematics by having a vocabulary bank which is accompanied by a bank of symbols using a dual coding approach to help pupils build a maths schema.

Every classroom contains a working wall which displays the 'Our Learning Question (OLQ)' and the 'Learning Block'. Teaching and learning the language of mathematics is vital for the development of mathematical proficiency therefore, each working wall has a 'vocabulary' section for children to refer to when needed.

Maths boxes are available in each classroom to ensure that children always have access to a variety of manipulatives. All children are encouraged to show the relationship between the concrete experience, the pictorial representations and the abstraction to demonstrate their understanding of the structure of the mathematics.

FS1 uses resources from 'Master the Curriculum' which is aligned with the White Rose Maths framework and the National Curriculum.

FS2 largely follows the White Rose small steps but is heavily supplemented with Mastering Number.

The children have the opportunity to access all areas of learning through the structure of continuous provision. Children engage in their indoor and outdoor learning environments on a daily basis.

We ensure that our curriculum is ambitious for all children by following the mastery approach.

All children have access to the curriculum and to ensure that children can access it, we ensure that for disadvantaged pupils we include:

- Rapid interventions
- High quality resources to enable children to be able to see the maths.
- The have opportunities to attend afterschool clubs throughout the year.

For our SEND and/or EAL children we include:

- Visual representations
- The use of concrete resources
- The use of scaffolds in lessons to support learning.
- Communication in Print

Children in the Team Courage provision are significantly below age-related expectations, working at Pre-Key Stage level. They require individualised support that is tailored to meet their needs and challenge them in maths. Children in the Team Friendship provision use our A SEN DREAM curriculum which is designed around pupil's developmental stages of learning, as opposed to their chronological age. This approach is bespoke to each pupil supporting individual Special Educational Needs and Disabilities. Pupil's individual learning objectives are outlined within their bespoke SEN provision which provides both short and long-term goals. These relate to a child's learning needs applying the Graduated Response. Where a child has an Education, Health and Care Plans (EHCP's) our A SEN DREAM Curriculum embeds these goals.

Learning walks and monitoring are completed regularly to ensure that maths teaching is consistent across school and leading to good progress for all children. Next steps planned accordingly. Share outcomes and plan next steps accordingly.

Pupil and staff voice is completed throughout the year.

CPD is delivered regularly to all staff at school, as year groups and at an individual level. This tailored approach to CPD ensures maths teaching is of high quality ensuring all children make good progress.

Having studied our mathematics curriculum, an Ashwood child will leave us:

- Being able to move fluently between representations of mathematical ideas.
- Have the ability to build on their learning when they leave us.
- Be able to make connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems.
- Having achieved automaticity in all areas of the mathematics curriculum.
- Being able to transfer their mathematical knowledge into other subjects and be able to transfer these skills and apply them in real-life contexts.