Mathematics

We strive to ensure that all children enjoy mathematics and have the confidence to apply their understanding to their everyday lives. Our mathematics teaching is engaging, fosters positive 'can-do' attitudes and develops pupils' fluency, reasoning and problem-solving. To achieve this, teaching for mastery forms the basis of our approach to mathematics, ensuring children have a deep understanding. Our approach is informed by the EEF guidance reports, Ofsted's maths report and NCETM research.

Intent

We aim to:

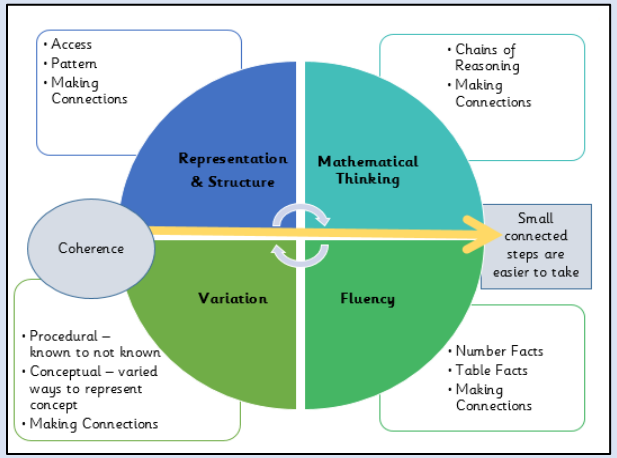
- Be ambitious and have high expectations of all pupils – at Holywell we believe everyone can!
- Equip pupils with strong foundation in fluency, reasoning and problem solving to support their progress.
- Develop a deep understanding of core mathematical concepts.
- Foster a love for maths through engaging, challenging and meaningful learning experiences.
- Ensure all staff have access to high-quality CPD to support effective and consistent teaching practices.

Implementation

How we achieve our aims:

Ambitious Curriculum for All

5 big ideas behind the NCETM's approach to maths that underpin our maths curriculum:



Knowledge

A spiral approach aligned with the National Curriculum, revisiting key concepts at greater depth as children progress:

- Number
- Measures
- Geometry
- Statistics

Developing number fluency is essential:

- EYFS and KS1 - focussed on developing additive reasoning (NCETM Mastering Number).
- KS2 - multiplicative reasoning is further developed.

Skills

We develop pupils' ability to think like mathematicians by:

- Using a Concrete-Pictorial-Abstract (CPA) approach to help them gain a thorough understanding of the how and why behind mathematical concepts and processes.
- Embedding reasoning and problem-solving opportunities into every maths lesson to deepen their analytical and critical thinking skills.

Curriculum Links

As a core subject, maths runs across the curriculum enabling children to apply their mathematical knowledge and understanding. This is particularly apparent across our STEM subjects. Examples include:

- Science: collecting, analysing and presenting data.
- Computing: use of graphs, IP addresses and coding.
- Design Technology: measures and geometry.
- History: timelines and Roman numerals.
- Geography: co-ordinates.

Enrichment

We enhance our maths curriculum through:

- Numbots and Times Table Rock Stars (TTRS. competitions and rewards.
- Decembar – a whole month celebrating bar models!
- Secondary school maths workshops.
- Maths themed celebration days.
- House maths challenges.

Inclusive and Adaptive Teaching

The expectation is that the majority of children will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of children' understanding and their readiness to progress. (National Curriculum)

Support

- Small, connected steps in learning.
- Accessible concrete resources for all.
- Appropriate scaffolding e.g. times table grid, continued use of resources.
- In lesson guided groups.
- Adapted/differentiated worksheets.
- Pre-teaching and intervention.
- Targeted intervention programmes.

Challenge

- Greater depth questioning throughout lesson.
- Opportunity to explore maths concepts in a variety of ways
- Explaining their understanding.
- Greater depth application challenge (journal).
- Generalising and testing rules.
- Maths journal cards.

Effective Teaching in Mathematics

- The use of well-chosen practical resources, models and images.
- Paired and group work to support exploration and promote maths talk.
- Lots of reasoning and problem solving with children talking about their learning.
- No preconceived ideas of a child's ability.
- 'Ping pong' style teaching - to share ideas, misconceptions, pose questions and challenge.
- A real focus on precise mathematical language.
- Positive use of mistakes/misconceptions, developing a positive learning environment.
- Teachers and LSAs supporting learning, asking skilful, probing questions.
- Open ended investigations incorporating low threshold/high ceiling tasks.
- Arithmetic fluency activities that promote number sense across the 4 operations – connect 4+

Assessment

Formative assessment takes place every lesson:

- Assessing if the children are ready to move on at the point of teaching.
- Live, in lesson marking.
- Active feedback post lesson to identify misconception and plan next steps/

Summative assessment occurs regularly:

- Half termly teacher assessment judgements informed by in lesson assessment
- Bi-annually standardised assessment and QLA.
- Regular KS2 arithmetic tests analysed and scores tracked.

Home Learning

In order to promote number sense and confidence in our learners, the focus of our home learning is fluency. This include the practice and retrieval of number facts in EYFS and KSI, multiplication in LKS2 and consolidation in UKS2.

Subject Leadership

Resources

- Maths No Problem
- White Rose Maths
- NCETM
- Nrich
- Arithmetic quizzes
- Numbots and TTRS
- Mathsbot

CPD

CPD ranges from professional discussions, in-house training, external courses and online subject knowledge videos accessible through MNP Hub.

Quality Assurance

We quality assure through:

- Pupil book study
- Learning walks
- Book looks
- Staff voice
- Data analysis

Impact

Our outcomes:

Children show an enjoyment and curiosity for mathematics.

Children use precise mathematical vocabulary.

Children are confident answering fluency, reasoning and problem solving questions.

Teaching teams are confident when teaching all aspects of mathematics.

All children make progress from a range of starting points and achieve well in statutory testing.