Curriculum Statement

Mathematics

Hooked on Thinking

Working With and For Local Families

Hindhayes INFANT SCHOOL

Intent – Mathematics at Hindhayes Recent research used to inform practice:

A Chinese proverb suggests 'Tell me and I'll forget; show me and I may remember; involve me and I'll understand.' How to involve or engage today's learner is at the forefront of much educational research that resonates well with our ethos at Hindhayes. Lead author Dr Emma Norris (UCL Centre for Behaviour Change, UCL Psychology & Language Sciences) states: "Physical activity is good for children's health, and the biggest contributor of sedentary time in children's lives is the seven or eight hours a day they spend in classrooms. Our study shows that physically active lessons are a useful addition to the curriculum. They can create a memorable learning experience, helping children to learn more effectively." Sams, C., Wegerif, R., Dawes, L. and Mercer, N. (2004, Thinking Together with ICT & Primary Mathematics: a Continuing Professional Development Pack) advocates the importance of classroom talk to clarify, challenge and deepen knowledge. These studies help to shape the learning experiences that we want for our learners.

Developing skilled mathematicians at Hindhayes:

We value a maths curriculum that is coherent, robust and accessible for all. Mathematics is an important part of everyday life which is why we dedicate five hourly sessions to the study of mathematics alongside a further three fifteen minute APE sessions in Key Stage One. Our intent for mathematics in the Foundation Stage is for daily opportunities to develop their mathematical understanding, primarily through play, to meet the needs of Development Matters. In addition to this, applications of mathematics can be found in our teaching of science, art and ICT.

At Hindhayes, we follow a mastery approach to the teaching and learning of mathematics. We therefore block mathematical concepts for an appropriate length of time to allow for learning pathways to be properly developed. We draw on a wide range of approaches and resources to fulfil our aim of engaging all learners; including 'Active Maths', 'Arithmekits', numicon and 'Super movers'. Our planning largely follows the White Rose Hub structure, with a focus on fluency, reasoning and problem solving for ALL pupils. We are currently developing 'low threshold/high ceiling' approaches to learning to emphasise our high expectations for all learners. Where some children require a slower, more measured pace of learning, our intent is to support their understanding by providing appropriate small steps teaching provision. Our whole school approach to developing resilient, resourceful learners further supports our mathematical intent, as we value time to talk, collaborate and learn from each other's mistakes as well as successes.

Implementation. How we deliver our maths curriculum:

We are currently taking part in the Boolean Hub 'Teaching for Mastery Work Group' two year project to support our mastery journey. Our maths lead and a senior teacher are engaged in regular CPD training, lesson observations and reflection tasks as part of the project. Staff meetings are then used to discuss and implement the key features of the mastery approach; such as the use of variation and stem sentences in lesson structures. The effectiveness of this area of development is further supported by year groups having shared PPA time to support consistency of vocabulary, representations and the use of resources. We adopt a "common approaches" strategy for teaching mathematics in order to ensure continuity across the year groups and to secure the learner's understanding. We recognise that the teaching sequence of concrete – pictorial – abstract helps to support the learning of all pupils. We seek to teach to misconceptions of mathematical learning to challenge pupils and to provoke reasoning dialogue. We recognise that there are benefits to different elements of classroom talk: Talk to agree and clarify learning intentions, Talk in pairs or small groups while attempting to produce ideas and solutions, Talk in whole-class sharing of ideas, coupled with organizing the approaches to learning. We aim to have children actively involved in their diet of varied fluency problems, investigations and reasoning tasks. The 'Answer it, Prove it, Explain it' sessions seek to deepen the children's understanding of mathematical topics by finding the 'odd one out', identifying patterns and 'spotting the mistake'. We match the content of the APE sessions to the current block of maths learning to provide further opportunity to use appropriate vocabulary, become more efficient in approaches and to make deeper connections between old and new learning.

Developing Cultural Capital

We want our maths curriculum to be engaging, relevant and rooted in real life contexts. So many life skills are fostered through mathematics; creative problem solving, the empowerment of reasoning and justifying, the development of resilience and a confident 'I can' attitude.

Impact

We measure the impact of our day to day maths curriculum by using the principles of assessment for learning. Teachers and teaching assistants work together to question pupils, challenge their understating with a 'convince me' invitation. Classroom staff then regularly converse to share observations, provide further 'marking makes sense' opportunities or additional 'teacher time' for additional scaffolding. We aim to have opportunities for whole staff training to support our approaches to maths, such as Maths of the Day training (March 2020), bar modelling (INSET Nov 2018), CLP calculation policy (CLP twilight May 2018) as well as more frequent staff meeting updates to disseminate new information. The impact of these advancements is observed through SLT lesson observations, full SLT book looks, pupil progress discussions and year group subject data and end of term assessments (see school monitoring programme). Timely decisions are then made around future training needs, resourcing needs and interventions for pupils who are at risk of not achieving ARE. This cycle for school improvement then continues to be fed into our school improvement calendar, mathematics action plan and staff meeting schedule.

What our data tells us:

Over the last 3 years Hindhayes has increased the percentage of children achieving ARE at the end of year 2 to be inline / above National Data, a 6% increase. Hindhayes has also increased the percentage of children achieving a Greater Depth in their learning to be in line with the National Data , a 5% increase.