Reasoning Lessons

"Mastering maths means pupils of all ages acquiring a deep, long-term, secure and adaptable understanding of the subject. The phrase 'teaching for mastery' describes the elements of classroom practice and school organisation that combine to give pupils the best chances of mastering maths. Achieving mastery means acquiring a solid enough understanding of the maths that's been taught to enable pupils to move on to more advanced material."

National Centre for Excellence in the Teaching of Mathematics (2021)

At Holland Park we take a mastery approach to maths lessons. We believe that every child can achieve in maths and that they can find maths enjoyable and be enthusiastic about their learning. Lessons are carefully planned to develop procedural and conditional skills/knowledge while providing full coverage of the curriculum whilst ensuring that children do not fall behind. There is a strong focus on oracy within maths lessons with the use of high level questions matched with stem sentences ensuring that children can explain their reasoning when answering problems.

Resources used:

Teachers are free to choose from a range of different resources when creating their lessons. Lessons can be based on the White Rose mastery planning, the NCETM mastery documents and on Power Maths resources. Teachers may also create their own resources as they feel is needed by their class. NRICH activities are also used to deepen understanding for those who finish work quickly.

Lesson expectations:

Lessons use a 'ping pong' style of teaching with lots of interaction between the teacher and the class. Retrieval practice for prior learning is incorporated into each lesson along with opportunities for children to think broadly about their prior learning. A typical lesson would look like:

- Whole class feedback - feedback from the previous day's learning with misconceptions addressed.
- Retrieval practice - a series of 3 or 4 quick questions about the previous day's learning. Children will respond either verbally or using mini-whiteboards.
- New teaching - the teacher will deliver new content in small steps with children being given the opportunity to talk in table groups or with their partners. The delivery style is one of 'ping pong' with lots of opportunities for teacher modelling followed but children trying the new skills they are learning. Stem sentences and key questions are incorporated into the lesson presentation to help the children think more deeply and form responses using the correct vocabulary.
- Independent work - children will be given one or more opportunities to work independently on the new skills (this can be either at the end of the teaching or part-way through the teaching and then again at the end). Independent work includes opportunities for building fluency of the new skill along with opportunities for reasoning and problem solving. During independent work teachers and LSAs will

circulate around the class supporting children where necessary and challenging those who can be pushed on to think more deeply.

- Extension work - for those children who successfully complete the work before others in the class resources stretching their thinking will be available. Resources from website such as NRICH may be used to deepen understanding.

During questioning, children who do not know the answer should be returned to after the correct response has been given by another child to offer them the opportunity to phrase the correct answer in their own words and therefore build the skills necessary for them to progress further and also prevent children from opting out of answering.

Concrete Resources/Manipulatives - concrete resources will be available in all classes at all times in maths lessons. For some lessons, teachers may chose to have the resources already on the tables but for others the children may chose to use them to support their own learning.