

## Philosophy and overarching principles

### Belief in success for all

All children can be successful at mathematics when given high quality instruction and meaningful support.

### Mastery through a collaborative approach

The children learn through collaboration. The opportunity to work as part of a team supports the development of understanding and reasoning skills.

### Moving all children together

Children progress through learning at broadly the same pace, with opportunities for faster graspers to deepen their understanding.

### Prioritising depth over breadth

Each topic should be explored in greater depth and in a variety of ways; a topic is only considered to be complete when the children's knowledge is secure.

### Focus on understanding

The ability to solve a calculation is not enough; children must be able to demonstrate and articulate their understanding of the mathematical concept.

## Turnham will support the mastery approach by:

- **Investment in subject knowledge**
  - A clear understanding of what is meant by a 'mastery approach' will be shared along with the pedagogy behind it
  - Regular CPD sessions will be planned and delivered on all areas of the mathematics curriculum for teachers and TAs
  - Examples of resources will be provided
- **Investment in resources**
  - Useful, relevant, concrete and pictorial resources will be made available to each class
  - Training in the use of resources will be provided
- **Mathematics support will be readily available from the leadership team**

- Planning support will be available during PPA
- There will be the opportunity to observe other teachers delivering mathematics lessons, e.g. through teacher research groups (TRGs)
- Team teaching of lessons
- Professional dialogues about strengths and areas for development

## Features of a successful mathematics lesson utilising a mastery approach include:

### Planning and design

- ✓ **Coherent, carefully sequenced learning steps:** each part of the lesson supports the children accessing the next part
- ✓ **'Ping Pong' instructional model:** there is a high level of back and forth between teacher modelling and pupil activities, e.g. a six-part lesson
- ✓ **Conceptual variation:** the mathematical concept is presented in a variety of ways so children are able to discern the essential features
- ✓ **Multiple representations:** a variety of manipulative and pictorial representations have been used to explain the mathematical concept
- ✓ **Procedural variation:** questions have been chosen with care to demonstrate a particular concept, ensuring that calculations are more than simply finding an answer, but about understanding patterns and concepts too
- ✓ **Fluency:** children have the opportunity to develop their fluency, enabling them to work flexibly, accurately and efficiently to solve mathematical problems
- ✓ **Depth for all:** every child in the lesson has the opportunity to apply their key learning through extension, application, reasoning or problem solving (or a combination)
- ✓ **Scaffolding:** support is available for those who need it (this could be additional concrete resources or further support from the teacher in a focus group)

### Delivery

#### Collaboration

- ✓ Talk tasks in groups or pairs to develop understanding
- ✓ Transition time between activities used for mathematical chants, rhymes or songs

#### Communication

- ✓ Accurate and appropriate vocabulary is used by all
- ✓ Sentence stems are taught and consistently referred to in order to provide clarity on how to speak mathematically

#### Curiosity

- ✓ There is an opportunity for children to go 'beyond the answer' and to explain how they got there
- ✓ Children have the opportunity to go from specific examples of concepts to developing these into general rules

\*Features of an SFA lesson will also be evident, e.g. team cheers, Random Reporter, zero noise signals