

Torre C of E Academy: Mathematics Strategy

Aim

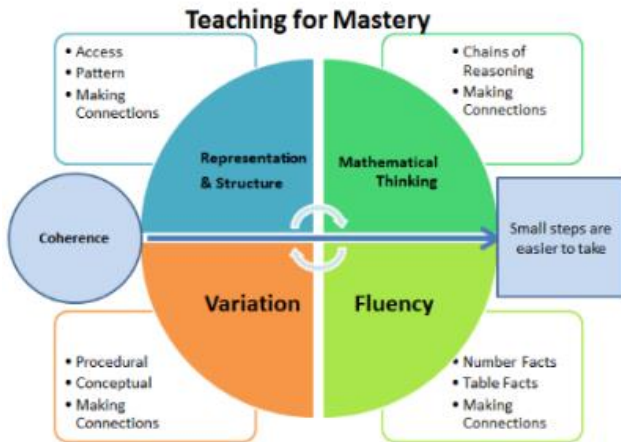
Mathematics will play a fundamental part of children's education and should have a pivotal role on their daily lives and the development of their character. It will provide a key foundation to many future opportunities. We want the children to develop curiosity to gain knowledge and understanding about the key concepts of mathematics through enjoyable experiences. We want all children to acquire the skills of calculation, reasoning and problem solving. We aim for children to be equipped for maths in everyday life, to enable them to further their education and to provide a platform for understanding the world.

Using White Rose as the spine of our mathematics planning, learners will master small steps in an order that enables them to grow into competent mathematicians. They will understand the importance, relevance and wonderful influence that maths has in our world on a daily basis and apply their knowledge in sophisticated and contextual problems.

We have 5 main aims for mathematics at Torre:

- 1) To provide a consistent and personalised approach to maths 'mastery' that benefits all pupils.
- 2) To ensure pupils build upon prior knowledge, using a scheme of work, ensuring coverage and sequential planning. Lessons adopt a **Know, Show, Grow** structure.
- 3) To develop our pupils' fluency, reasoning and problem solving.
- 4) To ensure ALL pupils make good progress in mathematics, providing quick catch up for pupils that do not.
- 5) To ensure mathematics in EYFS and KS1 lays the early foundations that supports relationships with children and promotes learning in an enabling environment.

1) To provide a consistent and personalised approach to maths 'mastery' that benefits all pupils.



The 'mastery approach' to teaching maths is the underlying principle of Mathematics Mastery through the use of the White Rose planning resources. Instead of learning mathematical procedures by rote, pupils are taught to build a deep conceptual understanding of concepts that will enable them to apply their learning in different situations.

We believe all students should have opportunities to develop reasoning and solve problems as well as develop fluency. Although we adopt a 'mastery approach', individual needs will be met through varying the degree of support, use of scaffolds and manipulatives, using extending questions and problems, and providing opportunities to deepen understanding for

those children who grasp concepts more quickly.

2) To ensure pupils build upon prior knowledge, using a scheme of work, ensuring coverage and sequential planning. Lessons adopt a Know, Show, Grow structure.

Torre has adopted the White Rose maths scheme across the school. This scheme has been adopted to ensure staff are supported in planning units of work that build upon prior knowledge; provide opportunities for fluency, reasoning and problem solving; support staff subject knowledge and approach to teaching mathematics. To support the teaching of the four operations in maths, Torre as developed a calculation policy to support teachers with progression of addition, subtraction, multiplication and division.



Our small step approach is designed to ensure that students will revisit taught mathematical concepts in different units of work throughout the year and as they progress within the school. Links and opportunities for mathematics in Learning Enquiries will be made where appropriate.

Children will have online and home-learning mathematical provision through Times Table Rockstars and Numbots. These online platforms are used throughout the school. Children will have regular maths home-learning to support learning in class. This may be revisiting previous learning or to support pre-teaching of new objectives.

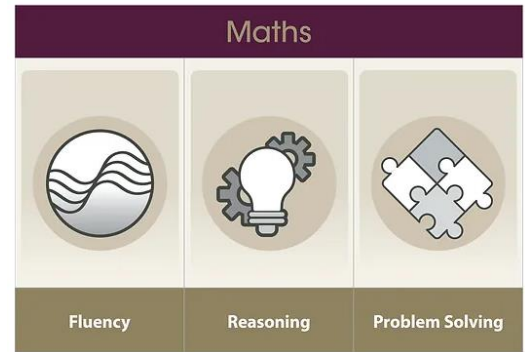
Sequence of lessons are structured using a Know, Show, Grow approach. New learning is revisited (what do I know), then acquisition of new knowledge is gained (What do I know now?), children move to apply and transfer their learning in different ways and finally children are able to grow as a learner by justifying, reason and problem solve using their new knowledge.

In order to give our children a broad and rich mathematical experience, we will also supplement White Rose using NCETM, Classroom Secrets and Nrich resources. White Rose teacher slides can be used but are adapted to suit the needs of our pupils.

3) To develop our pupils' fluency, reasoning and problem solving.

We intend that the study of mathematics will enable our pupils to:

- **become fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.
- **can solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.



To support this in lessons and marking feedback, pupils are encouraged to reflect upon their work – this will be shown using a lightbulb. Children might explain their mistakes or thinking, prove their understanding through calculations or explain their methods trying to think about the most efficient. Teachers may use an E, P or M to focus children’s reflections. Children have regular opportunities for self-assessment and are encouraged to reflect on and correct incorrect answers.



Explain

Prove

Method

4) To ensure ALL pupils make good progress in mathematics, providing quick catch up for pupils that do not.

Identify - Use of assessment	React
<p>Formative Assessment</p> <ul style="list-style-type: none"> ● Assessment during Whole-class teaching ● Assessment of work in books ● Reasoning and understanding ● Use of Tapestry for Early Years to record children’s development and to set next steps. <p>Summative Assessment</p> <ul style="list-style-type: none"> ● End-of-unit assessments ● Year 4 multiplication check. ● Termly Rising Stars PUMA Assessment (Year 3,4,5) ● Year 2 SATs ● Year 6 SATs ● Times table assessment (Y4 multiplication check) 	<ul style="list-style-type: none"> ● Provide opportunities in the classroom for all groups of pupils to be challenged – resulting in good progress ● Interventions put in place in EYFS to ensure a good level of early development. ● Precision teaching – daily intervention of times tables, number bonds, number recognition etc. This could be morning boosters. ● Targeted guided group work in class- working with the teacher on the area of need ● Additional targeted group work – small group work and pre-teaching groups ● Use assessment analysis to identify whole-class area of needs.

5) To ensure mathematics in EYFS and Year 1 lays the early foundations that supports relationships with children and promotes learning in an enabling environment.

At Torre, we understand the importance of a solid foundation in mathematical teaching which will provide the basis for future mathematical confidence and success. In EYFS, learning will focus on developing counting skills and using understanding numbers up to 10. Children will also have access to mathematical activities and learning through continuous provision in a rich and engaging environment. Parents will be able to engage and support their child's mathematical learning through tapestry.

All children in EYFS and Year 1 take part in the Mastering Number Project facilitated by the NCETM. In Year 2, children who are identified as needing the further support with number will also partake in the the Mastering Number Project. This project aims to secure firm foundations in the development of good number sense for all children from Reception through and Year 1. The aim over time is that children will leave KS1 with fluency in calculation, and, confidence and flexibility with number. Attention will be given to key knowledge and understanding needed in Reception classes, and progression through KS1 to support success in the future.

Supporting Documents

Progression of Mathematical Concepts:

<https://docs.google.com/document/d/13wngClyeT1DvMKmUAM4j6AKFvdB4Dzu6Frgc0hvEAlc/edit>

Written Calculation Policy:

<https://documentcloud.adobe.com/gsuiteintegration/index.html?state=%7B%22ids%22%3A%5B%221CtTmWYnoRbmdSMbuzGBEhFIPfNUhsfly%22%5D%2C%22action%22%3A%22open%22%2C%22userId%22%3A%22103478563754385731161%22%2C%22resourceKeys%22%3A%7B%7D%7D>

Times Tables Policy: <https://docs.google.com/document/d/1FrqPlfkF2cFbX7xIS9WaqJzQtHoixNvbD5ir47JqqH4/edit>

Example documents in books:

https://docs.google.com/document/d/1hrYKYB5PQ0c7yKnuzh72fsyqZtH_yOhcRcDHNUSWpE/edit

Manipulatives and resources:

https://docs.google.com/document/d/1oounSsUEv1P5YaBOgQMqlzdweFjUd_7E_mhGxdeBbJ0/edit

Reception and KS1 Mastering Number overviews https://drive.google.com/file/d/1B8dZ0mvDfkSIBNXP3Q2UCmNilXz-6YmG/view?usp=drive_link

https://drive.google.com/file/d/1BCxrSP1d5YzNOALNOiRcokpQNDxo34dN/view?usp=drive_link

Long term plan - TBC to include mixed age planning

https://docs.google.com/document/d/17eO0CKkb7L_o_Qc3rYKRD0EvvzbhCxxk/edit

