

## Mathematics Subject Specific Target exemplars:

This is a working document, intended to support the setting of subject specific targets on lesson observation forms and at weekly mentor meetings. Ideas for mathematics specific targets are here and can be adapted. Targets can require wider thinking and revisiting of prior learning at any stage in the course where it would be helpful to a trainee.

Target area:	Actions:	
Curriculum	Mastery Curriculum	Engage with the <a href="#">NCETM website</a> to gain a greater understanding of the Mathematics Teaching for Mastery programme.
	Curriculum planning	Engage with the <a href="#">Mathematics Guidance for Key Stage 3</a> to gain a greater awareness of the importance of coherence within the National Curriculum to help impact on medium-term planning.
	Become familiar with GCSE question types	Read examiner reports from previous years trying to spot/ identify patterns/themes to gain insight into common mathematical misconceptions.
	Shadow marking of mocks	Pencil mark mock papers using the mark scheme and review with mentors/observe mentor marking to develop an understanding in the requirements of pupil responses.
	Become familiar with exam board specifications for new GCSE Mathematics courses	Consult exam board websites to compare and contrast the four exam specifications for GCSE Mathematics to develop a greater understanding of assessment at KS4.
	Plan for breadth AND depth	Review a departmental sequence to identify depth and breadth of the mathematical content within it.
	Plan for progress of all learners in your mathematics classroom	Talk to the TA team about the best way to present material for X student.
Subject knowledge	Develop mathematical knowledge for the required KS3 and KS4 courses	Revisit your subject-knowledge audit to address any gaps in your current knowledge.
		Research alternative pedagogical approaches to teach X and consider possible mathematical misconceptions.
	Understand the level of knowledge	Observe a series of lessons across key stages and reflect upon the depth and breadth of knowledge required by students at each level, for discussion at a mentor meeting.
	Observe a lesson	First watch/listen to X on the topic and then observe to see how an experienced teacher deploys the knowledge.

	Modelling	Pay close attention to the correct mathematical modelling of examples to ensure that explicit instruction is clear.
	Developing knowledge	Study the scheme of work to identify the key themes of working mathematically (reasoning, problem-solving and fluency) and discuss with mentor how they change over time.
	Use of manipulatives	Make use of practical mathematical resources to support calculations.
	Real-life application	Relate the mathematics to real life by provide reasons for calculating.
	Literacy	Use reading, writing and listening tasks to enhance reasoning and explanations in mathematics.
Teaching & Learning / Pedagogy	Resources	Reduce the amount of redundant information of slides and make use of 'live' mathematical modelling rather than pre-designed solutions.
	Mathematical context	Develop use of images to set the context for the learning in the lesson; for example, by referring to statistics from social media.
	Higher-level mathematical thinking	Develop strategies which encourage deeper mathematical thinking using open-ended activities and problems.
	Progression	Ensure progression – avoid rushing on too soon to the more complex types of abstract mathematical representations.
	Key concepts	Teach one key mathematical concept at a time; for example, finding 10% of a quantity before multiples of 10%, 5% and combinations.
	Adaptive teaching	Use fading of mathematical modelling to remove or re-introduce stages of a mathematical procedure.
Assessment	Use of questioning	Use open rather than closed examples when appropriate; for example, 'Why is a 17 prime number?' rather than, or in addition to, 'what is the next prime number after 13?'.
	Mathematical misconceptions	Use mini whiteboards to address common mathematical misconceptions more readily.
	Exam analysis	Reflect on pupil responses in question-by-question grid analysis of a summative test to help draw out common or pupil-specific mathematical misconceptions.
	Checkpoints	Use the <a href="#">NCETM Checkpoint</a> assessments to identify particular/common mathematical misconceptions.

