

# Curriculum Intent, Implementation, Impact

## Subject: Core – Maths

Intent (Curriculum design, coverage and appropriateness)	Implementation (Curriculum delivery, teaching and assessment)	Impact (Attainment and progress, destinations)
<p>Maths is one of three core subjects at The Courtyard.</p> <p>Teachers set clear boundaries and expectations before each topic highlighting WHY learning these specific skills will help and boost learners' independence in future lives. In class we promote questioning and curiosity about mathematics. The main aim is for pupils not only to become fluent in the fundamentals of maths and be able to reason and use skills to problem- solve, but also to not be scared about 'talking maths'. We will try to eradicate the misconception that 'maths is difficult and that it is another language I can't speak.'</p> <p>We intend to achieve this by taking aspects of the Mastery method and combine it with concrete and 'real maths' This supports our whole school curriculum of PAIL (Preparation for Adult Independent Life) which involves lessons such as: collecting data for the whole school's favourite pet, and spending money in local cafes/shops (adding and subtracting as well as paying with the correct money when there is a discount). This will ensure that Maths is 'REAL'; pupils can relate to it in everyday life and are able to apply mathematical knowledge to problem-solve rather than teaching maths for the purpose of passing an exam.</p> <p>The curriculum is designed to incorporate the aims of the National Curriculum for Maths.</p>	<p><b>Mastery at The Courtyard</b></p> <p>The key aspect/principles of Mastery that we will implement into our lessons is that the lesson design focuses on small steps through a carefully sequenced learning journey.</p> <p>Each lesson content includes;</p> <ul style="list-style-type: none"> <li>• Questioning</li> <li>• Mini whiteboards work</li> <li>• True or False</li> <li>• Short tasks</li> <li>• Pupil explanation through challenge, demonstration and discussion</li> </ul> <p>Resources will utilise the CPA (concrete, pictorial and abstract) approach.</p> <p>Significant time in the curriculum is spent developing a deep knowledge of mathematical ideas to underpin future learning and to further solidify fluency and reasoning in mathematics.</p> <p>Mastery is an element of classroom practice to help learners develop a deep understanding of maths. When introducing new topics children are given the opportunity to use concrete objects to help model problems. The intent is to move them on to representing problems in pictorial form. Finally with the hope that pupils are able to answer abstract questions, drawing on previous knowledge and skills to help answer.</p> <p>We take these aspects of Mastery teaching practice to help our pupils to engage more in maths and make maths more enjoyable.</p> <ul style="list-style-type: none"> <li>• <b>Mini whiteboards</b> - Instant and not so 'concrete' like pen in books. Learners will gain more confidence knowing that they can 'rub things off' if it is not correct. This will also allow more discussions in class through sharing methods of working</li> <li>• <b>Short Tasks</b> - Can also be done on mini whiteboards with picture evidence. This will eliminate/reduce pupils' anxiety by seeing one or two questions at a time. Short tasks will also ensure the teacher has a greater awareness that their pupils understand the topic through regular feedback</li> </ul>	<p>The impact of mathematics curriculum at The Courtyard is that learners have a deeper understanding of mathematics and are able to relate it to real world concepts. Through open questioning and encouragement to 'talk maths', we have fostered an environment where 'no question is a silly question and no answer is a silly answer' because teachers care more about the journey to finding an answer. Learners are developing skills in being articulate and are able to reason well verbally, pictorially and in written form.</p> <p>With the combination of Mastery and the PAIL ethos at The Courtyard, learners' enjoyment of maths and the levels of engagement have increased. They have started to demonstrate a quicker recall of facts and mathematical procedures as well as having more confidence when attempting to tackle problems. Learners are beginning and continue to develop fluidity and flexibility to use different representations to help them to problem-solve.</p>

- **True or False** - This encourages mental reasoning without having to 'work out an answer'. Learners will be challenged to give their reasoning to their choice of True or False response. This will open the room up for discussion should there be 2 conflicting answers. More importantly, this will encourage and start to normalise the discourse around maths. The more we talk about all things maths, the less pupils will find it an 'alien' language.
- **Reasoning** - We will combine their ability to reason mathematically within a real life context; putting maths topics into their everyday lives. The common question is 'why would I need that?' We discuss the skills required to solve problems and apply those into our day to day lives. E.g.: Algebra requires collecting like terms and solving. In 'real life' this will be useful with shopping and managing a spending budget

#### **PAIL at The Courtyard**

- Teachers relate maths topics to 'everyday life'. The aim is to explain why and when we need maths to help with our day to day life so that learners have a deeper understanding of how maths being used in everyday life will enhance their future independence.
- Teachers use precise questioning and ask for explanations. This is to ensure that deeper understanding takes place as well as being able to relate to their day to day situations.
- Teaching will be supported with carefully chosen resources that are tactile and practical to support Mastery's intention of a deeper understanding of the fundamentals of maths.

At The Courtyard teachers use maths schemes of work at various levels to note down learners' progress day by day or week by week. These documents will be marked using the traffic light system and thus will inform teachers which areas of maths each individual student is struggling with as well as achieving in. These documents will also give clear indication on topics which need to be looked at in terms of teaching style, questioning, resources and the correct level of support. Furthermore, pupils will be assessed every term using past papers/teacher curated assessment to check progress.

Learners are assessed termly, usually in the form of a sample paper or, if pupils are ready, the formal qualification paper.

## Core – Maths Teaching Overview

Autumn Term 2019	Spring Term 2020	Summer Term 2020
<b>Functional Skills Entry Level</b> Number knowledge including fractions, decimals and percentages	<b>Functional Skills Entry Level</b> Measure including length, area, volume, weight, temperature, time	<b>Functional Skills Entry Level</b> Data, probability - links to real-life, revision of all topic areas
<b>Functional Skills Level 1</b> Number knowledge including fractions, decimals and percentages	<b>Functional Skills Level 1</b> Measure including length, area, volume, weight, temperature, time	<b>Functional Skills Level 1</b> Data, probability - links to real-life, revision of all topic areas
<b>GCSE Maths</b> Number knowledge, algebra, charts and graphs, fractions, percentages and decimals	<b>GCSE Maths</b> Sequences, properties of shapes, angles, statistics and sampling, perimeter, area and volume	<b>GCSE Maths</b> Transformations, construction, loci and bearings, vectors
<b>GCSE Statistics</b> Types of data, population and sampling, sampling methods, planning and collecting data, tabulation	<b>GCSE Statistics</b> Measures of central tendencies and dispersion, box plots, representing outliers, describing correlation	<b>GCSE Statistics</b> Spearman's rank, moving averages, two way table probability, Venn and tree diagrams, interpreting index numbers
<b>A / AS Level</b> Bridging the gap between GCSE and A Level, algebraic functions	<b>A / AS Level</b> Coordinate geometry in the (x and y) plane, further algebra, trigonometry, vectors, differentiation and integration, exponentials and logarithms	<b>A / AS Level</b> Statistical sampling, data presentation, probability, statistical hypothesis testing, quantities and units in mechanics