



# Curriculum Overview Document

## 311's Mathematics



### **Our whole School curriculum intent believes:**

Kickstart Academy is committed to providing a safe, caring and stimulating environment for all students. This allows our young people to re-engage with learning and either return to mainstream schooling or achieve success whilst remaining with ourselves. During this time, the learning needs of each individual pupil are accurately assessed to support personalisation of learning.

Our main aims as an academy are:

- To keep our students safe
- To provide a high quality of education
- Help our students to personally develop
- Improve outcomes for our young people

Our curriculum is the vehicle to deliver our whole-school vision and we believe that the delivery of an effective curriculum to help improve educational outcomes is a vital way to positively impact our students' futures. We endeavour to further our students' intellectual development, social and emotional development, character and responsibility, happiness, and success.

We underpin our curriculum using our whole school values: Belong, Respect, Inspire, Succeed, Enjoy. Our teachers aim to develop and deliver the curriculum in a way that remains true to the subjects' core content and concepts, creates a safe learning environment, encourages progression, and develops a lifelong love of learning.

### **Our whole School curriculum intent believes:**

Our intent is to provide students with educational success and provide them with the opportunities to develop the essential skills and knowledge that they remember, not just encounter, ready for the next stage of their lives. This may be when they return to mainstream school or when they leave Year 11 and embark on their journey into further education, training, or employment. Our curriculum is designed for progression and to be inclusive for all whilst setting high expectations of our learners. We encourage our students to be active thinkers with the product of knowledge being our overarching goal.

We aim to provide a broad curriculum that offers a range of academic and vocational pathways whilst fostering creativity and developing critical thinking. We intend for our students to leave Kickstart with an ability to read, write, and communicate effectively. We also have a strong focus on the personal and social development of our students that allows them to understand and manage their emotions, recognise risk, increase resilience, and further their knowledge on the culturally rich communities in which they live.

As a school we also work closely with outside agencies, to help further support our young people to the greatest extent. Our target is for our students to leave Kickstart with an increased cultural capital that supports their development and allows them to achieve success beyond the classroom.

We strive to identify and work on the different and individual needs of our young people within school to help them develop in whatever they require for success. We aim to identify their individual needs and gaps in learning whilst supporting them through the use of differentiation. It is our intention that our students leave with a broad knowledge and understanding of the British Values and understand the positive impact they can have on their communities.

Improving outcomes for our young people is of utmost importance to us. We look to maximise attendance and punctuality, to ensure our students can access the provision they need to help them remain safe, improve their well-being, and succeed. We also have a key focus on behaviour management, with a very skilled staff team that work closely with our students to ensure that behaviour for learning is positive.

**Our intention for our curriculum is:**

‘Go down enough into anything and you will find mathematics’ - Dean Shlicter

At kickstart Academy, the maths department are committed to providing a safe, inclusive, and engaging environment that allows students to thrive from receiving high quality teaching through passion of the subject. We are a non-judgemental team who understand that every individual has a different level of prior knowledge and understanding, and we endeavour to support each student to achieve to the best of their ability.

By studying mathematics, students are aware of real-life opportunities and implications of number. Numbers are everywhere and our students will leave Kickstart knowing how they apply to a range of situations. The mathematics curriculum aims to equip students with the knowledge, ability and functionality to solve, reason and justify problems by applying their mathematic skills to a variety of real-life applications. This is supported by embedding and regularly reinforcing cross curricular skills through the six strands of mathematics: Number, Algebra, Probability, Statistics, Geometry and Ratio and Proportion.

The sequencing of our curriculum is designed to embed learning into the long-term memory by closing any gaps in learning from an interrupted education.

Each time students revisit an area in maths, they are exposed to more complex content, building on what they have already learnt.

At Kickstart Academy we challenge our students, whilst providing appropriate scaffolding, to ensure that all students develop through the rigorous development of knowledge and skills across the curriculum. Using their previous knowledge and ongoing learning students will be able to simplify problems into a series of smaller steps that will enable them to solve, reason and justify their solution to any problem. Within lessons students are taught strategies to solve problems and are encouraged by teacher modelling to be able to express themselves mathematically using keywords. Throughout our curriculum we use diagnostic questions to underpin the knowledge of our students and use this to address common misconceptions. Our lessons are designed to allow students to discuss their thinking and articulate how they achieved their answers; whilst creating an 'it is ok to make mistakes' culture we strive for students to build their resilience through praise and challenges. This approach challenges our students to gain a deeper understanding of the mathematical skills we are embedding, and further enhances their use of mathematical language and skills.

With a common misconception that maths is not used widely in the real world, teachers and students discuss the benefits of understanding, learning and mastering mathematics. Here at Kickstart Academy we aim to inspire our students to appreciate the power and beauty of mathematics and to gain a sense of enjoyment and curiosity from the mathematics that surrounds them in everyday life. In the short time pupils may attend Kickstart Academy we encourage students to overcome any preconceived opinions and disbeliefs regarding mathematics and strive for greatness.

**Linking our curriculum intention to our local community:**

The curriculum, through enrichment during the school day and within enrichment opportunities, will maximise the use of the local area. We will link our curriculum to the following:

- Telford college – British values – sharing resources and career taster opportunities
- Hadley Community Centre-sharing resources and having in line CPD with link practitioners
- Admaston House – Cooking - Cross curricular – proportions, time management and money handling
- Brightstar boxing- Mathematical skills needed for a sportsman
- Future focus- exploring career options
- Working relationship with west Mercia police
- Wrekin Primary school for work experience

**Implementation**

Lessons are engaging because they are challenging and fun. Students want to succeed and, through hard work and achievement, they want to learn more. Modelling is a key aspect of teaching in Mathematics. Through regular feedback and guided practice students master key concepts, methods, processes and formulas. Students learn how to revise and revisit prior knowledge so that they can be successful in regular low stakes tests whilst reinforcing their knowledge for the larger end of module/term assessments and ultimately their GCSE examinations. This helps to ensure long-term retention of core principles from KS3 through to KS4 and beyond. Within lessons; Maths starters entice students to reach into their prior knowledge to secure skills into the long-term memory whilst becoming intrigued into the new learning.

Pupils work both collaboratively and independently when problem solving, which requires them to persevere and develop resilience; carefully scaffolded and individualised learning creates a safe environment for errors and improvements. Class groups are not set upon ability therefore differentiation is greatly used to allow individual pace but to also stretch and challenge. Formative assessment is incredibly important in mathematics, focusing on analysing comprehension. Extension work, mini plenaries and discussion with students show the retention of information by the students.

The Mathematics classroom provides a good standard of resources to support learning in each area. Students are familiar with these and are able to access them independently where needed to support their learning. Visual aids are often used in relation to the real world, food, sport and fashion are particular favourites. Visual aids of multiplication grids, lists of formulae and clear displays are present for students to explore their calculations independently.

Our students will also have the opportunity to apply their skills at vocational settings such as construction, ensuring that they can apply the skills learnt throughout the modules to more functional style problems in real life. The new math GCSE, with its increased focus on real world problem solving, demands higher literacy skills. As such, we aim to embed literacy throughout our curriculum. We focus on vocabulary in all lessons and explicitly challenge students to apply this knowledge to be able to locate the maths within language.

To ensure our aims for the curriculum are implemented effectively we instil 6 core values into our curriculum known as 'The Kickstart 6.' In Mathematics this is achieved in the following ways:

#### Knowledge

- Use of retrieval practice of topics taught using a combination of short term and longer-term memory (lesson visuals, and 'Do Now' activities etc.)
- Reducing cognitive overload when introducing new topics by chunking information down, modelling new concepts ('I Do / We Do / You Do' etc.) and using regular low-stakes assessment to check new learning.
- Developing subject knowledge of teachers regularly through CPD.

The retrieval process in mathematics is important to layer learning. During lessons, students will need to revisit key knowledge from early learning of maths to be able to tackle more complex calculations. Problem solving requires patience and regular practise, this is why we follow the I do, we do, you model to support students to access long term memory through teacher led activities until they are confident new learning has developed into knowledge.

Teachers regularly upskill on current methods of mathematical practise, retrieval and top tips on how best to support students in their qualifications and later everyday use of problem solving.

### Explanation and Practice

- Teacher-led explanations are clear and concise.
- Information is provided in a student-friendly way that is accessible by all.
- Information is chunked when necessary.
- Guided and independent practice is embedded within lessons using clear success criteria.

Through clear explanation and modelling students are exposed to non-intimidating mathematical problems at scaffolded levels of ability. Through teacher passion, students can enjoy maths with clear individually personalised explanation. The maths department take great pride in challenging past misconceptions towards mathematics; by changing the narrative and becoming a subject that students enjoy and thrive in. Students have clear aims with vibrant success criteria available in displays, teacher explanation and personal goal setting. Through knowing our students, staff are able to support individualised learning for an array of future careers and interests; using the model 'we are learning this so that we can' will capture students interest and give purpose to their practice.

### Modelling and Scaffolding

- New concepts, tasks, and knowledge are modelled first with differentiated scaffoldings provided where required to help build students' confidence.
- A variety of models (worked examples, live modelling etc.) are shared with students to enhance their understanding.
- Scaffolding is withdrawn when teachers have assessed that students are ready.

Once the love of mathematics is rebuilt, scaffolded work is vital to build the true picture of problem solving in the real world. Real life scenarios and physical apparatus allow students to visually see why maths is important. Students will learn money and time keeping skills in an environment where they feel safe. A non-judgemental approach to making mistakes is modelled through teacher led and peer assessed work. Students are encouraged to interact with whole

class engagement to build confidence and share common misconceptions. The environment is calm, with work that meets kinaesthetic, dyscalculia, low self-esteem and learning support needs.

### Questioning

- Targeted questions are used to gain live feedback from students in the lesson.
- A variety of questioning methods are used (cold calling, show-me boards etc.)
- Questioning is used to allow students to deepen their understanding through subject-specific terminology and academic dialogue.

Our warm classroom experience allows students to provide live feedback when taking part in questioning and answering. Through knowing students varied ability, the teacher will aim questions that not only boost self-esteem but stretch and challenge. Through key words that are explained and modelled throughout the lesson, students will become familiar to subject specific terminology and academic knowledge. To explore deeper learning, thought provoking questions such as 'can you use an inverse operation to support your answer' will strengthen core knowledge of the English curriculum to build a dialogue that's rich in life skills.

### Feedback

- Feedback includes a combination of live questioning within the classroom and more deeply marked pieces of work.\_
- Feedback is personalised (Pink for Think, live marking etc.) to allow students to progress with their individual learning.\_
- Feedback is given in a positive, encouraging, and constructive way (WWW and EBI etc.)\_
- Students are actively encouraged to engage with feedback (DIRT, Purple for Progress etc.) to address learning gaps.

In the maths department we pride ourselves on the positive instant feedback given verbally to students. Working alongside students support plans, support staff will provide feedback that does not intimidate or single out a student. Feedback is personalised through the school policy of 'pink for think' to allow misconceptions to be rectified and aspects of work are marked deeply for reflection. The maths department provide directed improvement and reflection time through clear marking sheets, these are to summarize the progress, highlight improvements and celebrate the learning. The maths classroom boasts great work, through displaying positive engagement and attitude to learning, this is shared regularly with parents and carers. The maths department aim for students to reach self-actualisation and increase passion and drive; this is supported by relevant and constructive daily feedback.

### Behaviour and Relationships

- Teachers create environments in which all students feel safe.

- Positive and professional relationships are established through clear roles, routines, expectations, and boundaries.
- Routines and behaviours are rehearsed and positively modelled by staff.
- Differentiated behaviour management strategies are applied to help challenge and correct student behaviour.

The learning environment is warm and welcoming from the start. Students feel comfortable to make mistakes, to ask for support and feel valued within the classroom and school. Consistent routines and clear boundaries allow teaching and learning to happen in safe space. Positive behaviours are role modelled by staff to ensure that every child is heard and supported to learn and thrive with their peers and adults. Staff are aware of students' behaviour management plans that support learning, intervention and extra-curricular activities to remove any barriers to learning. The maths classroom is welcoming, personalised to a variety of needs, interests, and abilities.

Prior knowledge check into year 10: Upon arrival to Kickstart students will revisit the year 7,8 and 9 curriculum we build upon the knowledge taught throughout Key Stage 2 and 3 to introduce more functional and multi-step problem solving. Through this we introduce key concepts that will be fundamental knowledge for their Mathematical journey through to their GCSEs. Students who are ready to build on their key stage 3 topics will follow the year 10 knowledge, skills, and objectives. Students will become familiar with scientific calculators, strengthen their multiplication and comprehension skills.

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| <p><b>GCSE Baseline assessments:</b></p> <p>Through autumn 1 we study analysing and displaying data and number skills, this is a fundamental element of all mathematics. The key skills covered will be the building blocks of their mathematical. We</p> | <p>During Autumn 2 we revisit and recap our knowledge of statistics. We extend our knowledge of averages and introduce averages from tables and estimated means. Throughout this unit we discuss how averages can yield different results and the implications this can</p> |                | <p>Spring 1 recaps Key Stage 2 decimal arithmetic and geometry and measures module of angles. Students are familiar with angles in a straight line, triangle, and quadrilaterals through KS2. Students should understand angles in parallel lines and interior/exterior angles of</p> | <p>Decimal arithmetic in Spring 2 uses the previous knowledge from the fractions and number module and applies this to decimal calculations. Students will also discover equivalent fractions, decimals and percentages and how these are used in calculations. Students then extend their knowledge of</p> | <p>During summer 1, We extend our knowledge of expanding and factorising from previous learning and apply this to solving equations and multistep problems. We further develop the pupils' knowledge of sequences and introduced non-linear and geometric sequences. Within this</p> | <p>Summer 2 delves deeper into rational using ratio, proportion, and probability. Students have encountered ratio earlier in their mathematical journey. We deepen their understanding to multi operational problems with ratio, fractions, and percentages. Students will also be expected to</p> |                |

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| <p>introduce the laws of indices, and how these can be used to solve HCF and LCM problems from units. This consolidates the prior learning and introduces the concept of prime factor decomposition, and builds on the venn diagrams, to find HCF and LCM of two or more numbers. From here we move on to the study of chance and probability. We look at experimental and theoretical probabilities and how these differ in the real world.</p> | <p>have. Students consolidate their graph work and interpret real life graphs, looking at financial exchange rates and interpreting distance time graphs. We liaise with Employability for links to careers and finances. Students will begin to explore their future career/vocation.</p> <p><u>Students will complete a Functional skills Entry 3 exam. Those students with large gaps in knowledge will begin at Entry 2 and build on their journey to reach GCSE.</u></p> | <p>polygons. Students will revisit area, perimeter and volume – addressing real life capacity problems. Students will further their knowledge of area from KS2, moving away from squares and rectangles and focusing on trapezia and compound shapes. Following this, students study multiplicative reasoning. This will nicely support students when mastering geometry.</p> | <p>fractions, decimals and percentages. We move on from fraction/percentage of amounts and move to financial maths and repeated percentage change. During this module, we introduce bank statements, credit cards, interest rates and how these can affect your financial situations. We introduce links with Employability and where these skills are used outside of the curriculum.</p> | <p>module we also expand on solving equations and introduce the solving of inequalities. We also further develop the rules of indices, as the pupils solve direct and inverse proportion problems using exponentials. By this point students will be able to recognise the relationship between term-to-term rules and rule of nth term.</p> | <p>calculate unitary ratios and express ratios as 1:n. Students will also be familiar with direct proportion from their work in previous years. We use this knowledge to introduce inverse proportion, for example if a cake feeds 5 people with 500g of flour how many people will a cake made from 750g of flour feed? Students to liaise with cooking to put calculations into practise.</p> <p><u>The end point assessment at the end of year 10 not only assesses all previous knowledge but also prepares the students for the demands of the GCSE course. Students will complete tailored summative assessments to direct learning through their final year of school.</u></p> |
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**Year 10 Curriculum implementation**

The Year 10 curriculum aims to combine the application of students' knowledge and communication skills to challenging GCSE style problems. Students are expected to be able to apply their knowledge from previous years to multi step problem solving problems. Students will be expected to present their arguments in a logical manner and justify their answers using the correct Mathematical terminology. All students will have the opportunity to complete Functional skills maths entry qualifications as a base for their GCSE.

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| <p><b><u>Ratio, probability, and proportion</u></b></p> <p>During this period of learning we use the knowledge of Fractions, decimals, and percentages to expand on probability to identify probabilities of various events happening, to calculate mutually exclusive outcomes and introduce tree diagrams. Students will be expected to list the outcomes of two or more events happening and calculate the associated probabilities. Probability can also draw on their knowledge of Venn</p> | <p><b><u>Graphs and transformations</u></b></p> <p>Spring 2 we apply their knowledge of reflection and rotations and apply this to enlargements and translations. Once mastered we move on to Loci and constructions and ensure pupils can construct accurate drawings using a ruler and protractor. Through this topic we link with Art and design to construct 2-point perspective drawings, enlarge drawings by scale factors and reflect shape and images. Whilst working through the four transformations</p> |                | <p><b><u>Angles, volume, and introduction to Pythagoras theorem</u></b></p> <p>Students build upon their knowledge of area, perimeter and volume of regular shapes and extend this to compound shapes and problem-solving style questions. Students also extend their knowledge of unit conversions and apply these to area and volume problems. In autumn 1, we extend our knowledge of area and perimeter and introduce circles, cylinders, and Pythagoras' theorem. Students will spend time identifying the hypotenuse to support</p> | <p><b><u>Fractions, indices, and standard form.</u></b></p> <p>In Spring 2 we revisit fraction and percentage of quantities whilst moving to converting between fractions, decimals and percentages. Students will extend this knowledge to ordering FDP in ascending and descending order. Students' knowledge of percentages is deepened further with the introduction of simple interest problems and calculating reverse percentages. With standard form we apply the rules of indices from standalone calculations to applying the four rules of numbers. We link with science during this</p> | <p><b><u>Equations, Inequalities and Sequences</u></b></p> <p>Within this unit, we strengthen the students' knowledge of solving equations and extend it to solving inequalities. Once students have mastered this, we deepen their understanding with an introduction to error bounds. Sequences are reintroduced in this module. We extend from linear sequences and move onto quadratic and Fibonacci sequence. Students begin to experiment with expanding brackets, collecting like terms, and focusing on the rules of indices and multiplication of negative numbers.</p> | <p><b><u>Algebra and quadratic equations</u></b></p> <p>Here we place a greater emphasis on the use of the correct notation and build into writing and solving multi step algebra problems. We deepen our algebraic manipulation skills to include linear expansion and factorising. These skills will be revisited throughout further units.</p> <p>Students will complete a summative Mock GCSE paper or continue through their individual functional skills journey with Entry 3 and level 1.</p> |                |

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| <p>diagrams and use this to represent the outcomes of real-life situations. Following on from their prior learning students will be able to divide quantities into 3 parts in each ratio whilst comparing different ratios. Students will focus on the mathematical wording used to identify how to tackle real life problems. Students will be able to differentiate between the formulas needed to problem solve.</p> | <p>(reflection, rotation, enlargement, and translation) they will be introduced to both negative and fractional versions.</p> <p><u>Common assessment tasks to be completed for identifying gaps in learning.</u></p> | <p>their findings 'does Pythagoras' theorem work with other shapes rather than squares on the sides of a right-angle triangle.</p> | <p>module through size of planets and atoms to interstellar travel. Students should be able to provide convincing counterarguments to statements concerning properties of stated numbers including laws of indices.</p> |  |  |
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| <p><b>Year 11 Curriculum implementation</b></p> <p>Year 11 is a synoptic year that will be largely based on Mock Exams. Students will be expected to recall and apply knowledge from the previous 4 years to functional and GCSE style problems, whilst preparing them to continue their mathematical journey after they leave Kickstart academy.</p> |   |                |   |   |   |   |                |
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| <p><b><u>Algebra and quadratic equations</u></b></p> <p>Following on from year 10, students look at algebraic manipulation. We deepen their knowledge of linear expanding and factorising and develop quadratic factorising and expanding multi bracket polynomials. Once mastered we use factorising to solve quadratic equations. Students at this point will feel comfortable in identifying the formula/calculation needed to substitute numbers into expressions with brackets and powers along with squaring single brackets. Students should be able to recognise and use quadratic graphs to solve problems.</p> | <p><b><u>Graphs and transformations.</u></b></p> <p>In Autumn 2 We build upon students' knowledge of coordinates and graphs in unit 9. Not only are students expected to plot and draw graphs, but they must also now be able to interpret graphs, calculate gradients, and find midpoints of coordinates. Students will also be expected to complete real-life graphs from the information provided. These graphs will also be extended into the negative axes. Students refer to prior learning to independently identify questions containing a mixture of units that they will be expected to convert. Here we apply all our knowledge of algebra and graphs to the equations <math>y = mx + c</math>. Students learn</p> | <p><b><u>Vectors and bearings</u></b></p> <p>In spring 1 the students revisit the constructions of triangles and polygons from previous years and expands to perpendicular and angular bisectors. To finish the module, we use the angle knowledge previously gained and apply this to bearing problems. Pupils will plot ship journeys and calculate position of objects based on the bearings from each other. To extend this further we use scale drawing to accurately construct bearing journeys. Students will explore maps of Shropshire to link in with geography.</p> | <p><b><u>Pythagoras, area, and volume of circles and cylinders.</u></b></p> <p>In year 10 we found area, volume, and perimeter of polygons. This term we extend this to circles, cylinders, cones, and spheres. Students are expected to learn the names for the parts of the circle and the formula associated with calculating area and circumference. Students will also be expected to calculate exact answers for these by leaving them in terms of <math>\pi</math>. When calculating surface area and volume of spheres and cones, the formula will be provided in the exam, so practice in this chapter will be ensuring all students can use and apply them.</p> | <p>Students prepare for GCSE examinations by working on tailored revision programs determined by the tutor which identifies gaps in their learning.</p> <p>Students will focus on exam tips, timing, and comprehension during exam style conditions.</p> <p>Throughout the spring term we invest in a variety of interventions to allow students to achieve their potential. These includes.</p> <ul style="list-style-type: none"> <li>• Ability set revision classes after school.</li> <li>• Personalised homework tasks.</li> <li>• Cross curricular links.</li> <li>• Links with other schools within the trust for extra GCSE lessons.</li> </ul> |  |
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|  | <p>how to interpret gradient, intercepts, and what it means if these variables were to change.</p> <p>Students will expand on their knowledge of the four transformations and be expected to solve multistep transformation problems both drawing and interpreting. During the module students will be introduced to the notation of proof, whilst demonstrating that two or more shapes are congruent.</p> <p><u>Common assessment tasks to be completed for identifying gaps in learning.</u></p> |  |  |  |  |
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### Impact of our curriculum:

The impact of our mathematics curriculum is that the students understand the relevance of what they are learning in relation to the real world. We have created an environment where it is ok to be 'wrong' because the journey to finding an answer is the most important. Students are encouraged to support one another in their own strengths and weaknesses and to understand that although time keeping is important, it is not necessary the fastest answer is the best answer. Our students have a growth mind-set and they make measurable progression against their own personal targets. Students build resilience by having the opportunity to sit regular functional skills exams with intentions to achieve to the best of their ability.

Our maths books are packed proudly with a range of activities showing evidence of fluency, reasoning and problem solving. Feedback through verbal communication and written praise is supportive, encouraging students to not be intimidated by maths. Positive phone calls and certificates are regularly used to encourage students to boast about their individual effort and ability. Our expectations in maths are high, we encourage students to know that all pupils have different strengths, students should be proud of their workbooks. Books are moderated internally to share good practice.

Students have and will leave Kickstart with a greater passion for Mathematics, an understanding of how mathematics is used in the real world and a range of qualifications.

### Wider Curriculum offer

The following sections clarify how areas such as Personal development, Careers and Cultural Capital are woven into the intention, implementation and impact of the subject curriculum

#### Personal Development within our curriculum

##### Personal Development

Mathematics at Kickstart Academy aims to support our students to develop in many diverse aspects of life. We provide opportunities within our learning to enable our students to do this in several ways:

**Responsible, respectful, and active citizens:** Mathematics can help students to become responsible, respectful, and active citizens by enabling them to:

- Opportunities to develop and improve their skills in counting, understanding, and using numbers, calculating simple addition and subtraction problems; and to describe shapes, spaces and measures.
- Breakdown formulas and calculations.
- Be creative.
- Discuss topics, listening to the views of others and expressing their own viewpoints and findings.
- Build a secure framework of mathematical reasoning, which they can use and apply with confidence to everyday scenarios.

- Ask questions for quantitative reasoning.
- Present information to different audiences through images, speech and writing.
- Manipulate precise and intricate ideas.
- Construct logical arguments and expose illogical arguments.
- Supporting communication.
- Progressing time management.
- Develop budgeting and life skills

**Fundamental British Values:** Through the exploration and enthusiasm of the way numbers and formulas support the way of living all students will develop:

- an understanding of how citizens can influence decision-making through the democratic process
- an appreciation that living under the rule of law protects individual citizens and is essential for their wellbeing and safety
- an acceptance that other people having different faiths or beliefs to oneself (or having none) should be accepted and tolerated, and should not be the cause of prejudicial or discriminatory behaviour
- an understanding of the importance of identifying and combatting discrimination

**Inclusive Environment:** Learners in Mathematics will access an environment which is:

- supportive, respectful and promotes diversity and fairness.
- has high expectations for all students
- creates a supportive peer culture both inside and outside the classroom
- where learning is planned to include participation from everyone and encourages success
- Individual Learning Plans (ILPs), and short and long-term goal setting by the learner is included so that they feel they have ownership of their learning
- Has a 'community' approach to learning and teaching. Inclusive values are developed through a student's lived experience and their exposure to other cultures and world-views.
- Bringing the local community into the classroom and taking the classroom out to the community.

**Character:** Mathematics contributes to the school curriculum by developing pupils' abilities to calculate; to reason logically, algebraically, and geometrically; to solve problems and to handle data. Mathematics is important for pupils in many other areas and more so with emerging

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|                    | <p>technology. It is also important in everyday living, in many forms of employment, and in public decision-making. Mathematics supports confidence in problem solving, handling money and career choice. When learning, students are encouraged to independently seek answers and build resilience when a problem arises.</p> <p><b>Confidence, Resilience and Mental Health:</b> Through the Mathematics curriculum we intend to develop the social competence of our learners by creating a sense of:</p> <ul style="list-style-type: none"> <li>• Purpose</li> <li>• Confidence</li> <li>• Persistence</li> <li>• Willingness to discuss</li> <li>• Reflections and research</li> </ul> <p>Whilst studying Mathematics at Kickstart Academy, students will be introduced to new and exciting topics that can be daunting. Students are supported through one-to-one guidance to problem solve by trial and error. Over time students will feel a sense of pride and enjoyment of maths broadening their prospects and way of life.</p> <p><b>Careers and Readiness For Next Phase Of Education:</b> Every student will have the opportunity to achieve a qualification at a level appropriate for them. This will enable them to progress into the next phase of their education, training or employment. Students will follow a bespoke learning path whilst having access to the nation GCSE curriculum, those that are not yet ready will follow a function skills program to support their progress and development.</p>                      |
| <p><b>SMSC</b></p> | <p><b>Spiritual:</b> The study of mathematics enables students to make sense of the world around them and we strive to enable each of our students to explore the connections between their numeracy skills and every-day life. Developing deep thinking and an ability to question the way in which the world works promotes the spiritual growth of students. Students are encouraged to see the sequences, patterns, symmetry, and scale both in the man-made and the natural world and to use maths as a tool to explore it more fully.</p> <p><b>Moral:</b> The moral development of students is an important thread running through the mathematics syllabus. Students are provided with opportunities to use their maths skills in real life contexts, applying and exploring the skills required in solving various problems. For example, students are encouraged to analyse data and consider the implications of misleading or biased statistical calculations. All students are made aware of the fact that the choices they make lead to various consequences. They must then make a choice that relates to the result they are looking for. The logical aspect of this relates strongly to the right/wrong responses in maths.</p> <p><b>Social:</b> Problem solving skills and teamwork are fundamental to mathematics through creative thinking, discussion, explaining and presenting ideas. Students are always encouraged to explain concepts to each other and support each other in their learning. In this manner, students</p> |

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|   | <p>realise their own strengths and feel a sense of achievement which often boosts confidence. Social interactions via technology, transport and living use a variety of mathematical terms and equations, our students will experience using their skills to over time become more independent and resilient learners. Our aim is to allow students to explore their mathematical knowledge, build on this to enable to them to choose an exciting future career.</p> <p><b>Cultural:</b> Mathematics is a universal language with a myriad of cultural inputs throughout the ages. Various approaches to mathematics from around the world are used and this provides an opportunity to discuss their origins. This includes different multiplication methods from Egypt, Russia and China, Pythagoras' Theorem from Greece and so on. We try to develop an awareness of both the history of maths alongside the realisation that many topics we still learn today have travelled across the world and are used internationally. Students are expected to be able to summarise their own finding with and without technology.</p> |
| <b>Extra-Curricular &amp; Enrichment</b>      | <p>We enjoy a range of enrichment opportunities in Mathematics and we are always looking for new ways to enhance our classroom learning.</p> <p>Current enrichment opportunities:</p> <ul style="list-style-type: none"> <li>• Numeracy mornings during form time activities</li> <li>• Afterschool Maths revision clubs</li> <li>• Students have access to ipads to support independent research through videos and apps.</li> <li>• Students use mathematics during charity events, football tournaments, fishing and boxing.</li> </ul> <p>Future enrichment opportunities we plan to develop:</p> <ul style="list-style-type: none"> <li>• School trips</li> <li>• Classroom equipment</li> <li>• Parent guidance and learning</li> </ul>  |
| <b>Careers/Work Experience</b>                |  |
| <b>Careers</b>                                | <p>There is a demand for mathematicians and statisticians across a range of sectors. Mathematicians work in retail, hair and beauty, mechanics, medicine and health, IT, business consultancy and operational research, space science and astronomy, as well as many forms of engineering and different government departments.</p>  |
| Work Experience Offer & Staff Work Experience | <p><b>Students:</b> Within Kickstart students are encouraged to take part in vocational and work experience opportunities. We work alongside other providers to encourage development of relevant skills and knowledge that can support our students in their future careers.</p> <p><b>Staff:</b> Staff have the opportunities to attend CPD and work collaboratively with other schools to develop their own knowledge and understanding both within their specific subject are and within wider health, school and community related areas. Professional links have been made with Mr Craig Barton Maths and Rosenshine, principles by Tom Sherrington.</p>   |

## Cultural Capital

### Ofsted Definition

*It is the essential knowledge that pupils need to be educated citizens, introducing them to the best that has been thought and said and helping to engender an appreciation of human creativity and achievement.*

Here at Kickstart Academy teachers support students to build on previous knowledge in mathematics supporting cultural capital of the accumulation of knowledge, behaviours, and skills that one can draw upon and which demonstrates cultural awareness, knowledge and competence; it is one of the key ingredients a student will draw upon to be successful in society, their career and the world of work.

Examples of cultural development in maths include

- Pupils investigating the different number sequences and where they occur in the real world
- Allowing discussions on the cultural and historical roots of mathematics, such as Pythagoras' theorem
- Pupils discussing the use of Mathematics in cultural symbols and patterns
- Investigating who has the "best" mathematical mind throughout history?