Curriculum Overview – Year 9

The Sutton Academy

At The Sutton Academy year 9 is 'Phase 2', a yearlong phase which acts as a bridge between key stage 3 and key stage 4. We start preparing our students for the challenges of GCSE maths by revisiting prior learning and consolidating and continuing to build on those foundations. We aim to ensure that students move through the curriculum at an appropriate pace, with students who require extra support being given more time to consolidate knowledge and practise key skills whilst the more able students are stretched and challenged through tasks requiring them to apply their knowledge to problem solving tasks. Once the initial foundations that need to be built on are secured we will then introduce new topics and concepts to our students to ensure they are constantly progressing. Our higher ability students will move through the curriculum at a slightly faster pace to allow us to begin to introduce 'higher tier' GCSE content to ensure they are well prepared for the challenges of the new GCSE in years 10 and 11.

How can parents best support?

Over the course of the academic year parents and guardians can best support their child in a number of ways.
Firstly a great way to support is by helping your child to complete all of their maths homework on time. At the Sutton Academy we appreciate that maths is not all parents 'cup of tea' so we strive to ensure that you can easily support with any tasks simply by guiding your child in the right direction for support.
Each week your child will be set two pieces of homework by their maths teacher. One of the homework tasks set for our students will be a topic based worksheet designed specifically to aid with retention of key topics that have been learned in previous lessons. You can support your child in completing this by helping them to access the correct Hegarty Maths videos which are provided on every homework task.
The second homework task that students will be set is a Hegarty Maths task. This will be on something that your child needs to revise based on assessment during lesson time and in tracking exams. To support your child in completing this please encourage them to use the website to its maximum potential, completing questions on paper to practise showing their working before inputting their answers. It would also be great if you could ensure that they access the videos that come with any tasks that they struggle with rather than just giving up.
As well as completing homework it would be greatly beneficial to encourage your child to use Hegarty Maths independently to practise the skills they have been learning in maths. Using the Hegarty Maths guide that we have created students can easily go over any topics that they have been taught as extra revision.
The document attached details the topics being covered each half term and the respective Hegarty Maths clip numbers that should be used to revise this content.

Unit Title	Learning	How can parents best support specifically each half term?
Number Skills (Half Term 1)	By the end of this unit students should be able to: • Understand and use place value • Round accurately to decimal places and significant figures in order to estimate answers • Determine upper and lower bounds for a rounded number • Add, subtract, multiply and divide decimals accurately • Calculate with powers and roots • Use BIDMAS to calculate accurately • Use the index laws • Convert numbers in and out of standard form	**Half Term 1:** This half term it would be great if you could help your child to complete the 'Tracking 1 Revision Guide' given to them by their class teacher. This will be handed out the week before the tracking exams and will replace both pieces of homework that would ordinarily be set that week. Each topic within the revision guide could come on your child's tracking exam so ensuring they spend plenty of time going over these and using the Hegarty clip numbers to revise anything they are a little bit unsure on will really help prepare them for their exams.

	• Identify and list factors, multiples and primes • Calculate fractions of amounts • Add, subtract, multiply and divide fractions and mixed numbers • Solve problems involving percentages with and without a calculator **Higher ability students will also be taught about:** • Negative and fractional indices • Calculating with numbers written in standard form • Surds	
Fractions, Decimals and Percentages (Half Term 1)	By the end of this unit students should be able to: • Use fraction notation • Simplify fractions and find equivalent fractions • Convert between improper fractions and mixed numbers • Add, subtract, multiply and divide fractions and mixed numbers • Calculate fractions of amounts • Convert between fractions, decimals and percentages • Calculate percentages of amounts with and without a calculator • Increase and decrease by a percentage • Percentage change • Simple interest **Higher ability students will also be taught about:** • Compound interest • Reverse percentages	

Algebraic Expressions and Equations (Half Term 2)	By the end of this unit students should be able to: • Construct algebraic expressions from words • Simplify expressions by collecting like terms • Simplify expressions involving multiplication and division • Construct expressions to describe the perimeter of a shape • Expand single brackets • Factorise linear expressions • Substitute numbers into formulae • Solve simple linear equations involving one variable • Solve two step linear equations • Solve linear equations where there is an unknown on both sides of the equal sign • Form and solve linear equations to solve real life problems • Represent and solve inequalities • Rearrange simple formulae **Higher ability students will also be taught about:** • Factorising quadratic expressions • Rearranging more complicated formulae • Solving quadratic equations by factorising • Solving quadratic equations using the quadratic formula	**Half Term 2:** This half term your child will be bringing home a copy of their personal learning checklist. They will have produced this in lesson time based on their tracking exams and it will clearly show your child's strengths and areas for development. Please celebrate the successes with your child and support them in developing their understanding of the topics that they didn't perform well on using Hegarty Maths. The checklist will state the clip numbers that your child needs to revise to make it easy for them to find what they need quickly. The topics highlighted could come up on the next tracking exams so the more they tick off the better prepared they will be.
Ratio and Proportion (Half Term 2)	By the end of this unit students should be able to: • Simplify ratio • Divide amounts into a given ratio • Solve problems involving ratio • Convert between currencies • Scale up recipes and solve other real life problems • Solve real life problems involving proportion • Use and interpret statements involving direct and inverse proportion	**Half Term 3:** This half term it would be great if you could help your child to complete the 'Tracking 2 Revision Guide' given to them by their class teacher. This will be handed out the week before the tracking exams and will replace both pieces of homework that would ordinarily be set that week. Each topic within the revision guide could come on your child's tracking exam so ensuring they spend plenty of time going over these and using the Hegarty clip numbers to revise anything they are a little bit unsure on will really help prepare them for their exams.

2D Geometry **(Half Term 3)**	By the end of this unit students should be able to: • Identify irregular and regular shapes by counting faces, vertices, edges • Identify lines of symmetry within 2D shapes. • Draw and measure angles accurately using a protractor • Calculate missing angles around a point, on a line and in triangles • Calculate missing angles in polygons • Calculate missing angles in parallel lines • Construct shapes using a pair of compasses and a protractor • Construct regions using a pair of compasses • Calculate perimeter and area of 2D shapes including compound shapes • Calculate area and circumference **Higher ability students will also be taught about:** • Sectors of circles	
Pythagoras' Theorem and Trigonometry **(Half Term 4)**	By the end of this unit students should be able to: • Calculate missing lengths using Pythagoras' theorem in 2D • Calculate missing lengths and angles using SOHCAHTOA in 2D **Higher ability students will also be taught about:** • Applying Pythagoras' theorem to graphs • Using Pythagoras' theorem in 3D • Using SOHCAHTOA in 3D	
Data and Statistics **(Half Term 4)**	By the end of this unit students should be able to: • Use different methods of data collection • Use different sampling techniques • Explain how bias impacts on the accuracy of data	

	• Calculate the mean, median, mode and range for a small data set • Calculate the mean and median from frequency tables • Identify the mode or modal class from a frequency table • Representing data in pictograms, bar charts, stem and leaf diagrams, two way tables, pie charts and scatter graphs • Interpret pictograms, bar charts, stem and leaf diagrams, two way tables, pie charts and scatter graphs **Higher ability students will also be taught about:** • Time series • Frequency polygons • Cumulative frequency curves • Box plots • Drawing histograms	
3D Shapes (Half Term 5)	By the end of this unit students should be able to: • Identify 3D shapes • Draw nets, plans and elevations for 3D shapes • Calculate the volume of prisms • Calculate surface area **Higher ability students will also be taught about:** • Calculating the volume and surface of cones, spheres and pyramids • Solving more complex problems involving volume	**Half Term 5:** This half term it would be great if you could help your child to complete the 'Tracking 3 Revision Guide' given to them by their class teacher. This will be handed before the May half term holidays to give your child plenty of time to prepare for the end of year exams. Each topic within the revision guide could come on your child's tracking exam so ensuring they spend plenty of time going over these and using the Hegarty clip numbers to revise anything they are a little bit unsure on will really help prepare them for their exams.
Compound Measures (Half Term 5)	By the end of this unit students should be able to: • Calculate with density, mass and volume • Calculate with speed, distance and time **Higher ability students will also be taught about:** • Calculating with upper and lower bounds	

Graphs **(Half Term 5)**	By the end of this unit students should be able to: • Draw and interpret real life graphs • Draw straight line graphs • Find the equation of a straight line • Draw quadratic graphs • Draw cubic graphs • Draw reciprocal graphs **Higher ability students will also be taught about:** • Finding the equation of a straight line given coordinates • Interpreting quadratic, cubic and reciprocal graphs	
Probability **(Half Term 5/Half Term 6)**	By the end of this unit students should be able to: • Represent probabilities on a probability scale • Write the probability of an event as a fraction, decimal or percentage • Conduct probability experiments • Strategically list the outcomes of an event using sample space diagrams • Understand how to determine the number of combinations that can be achieved in an event • Use 1 – p to calculate missing probabilities in a table • Use probability to calculate relative frequency • Tree diagrams • Venn diagrams	

Transformations (Half Term 6)	By the end of this unit students should be able to: • Reflect shapes in a given mirror line • Translate shapes by a column vector • Enlarge shapes by a positive scale factor • Rotate shapes **Higher ability students will also be taught about:** • Negative and fractional enlargements	**Half Term 6:** Following the end of year exams, your child will be bringing home a copy of their personal learning checklist. They will have produced this in lesson time based on their tracking exams and it will clearly show your child's strengths and areas for development. Please celebrate the successes with your child and support them in developing their understanding of the topics that they didn't perform well on using Hegarty Maths. The checklist will state the clip numbers that your child needs to revise to make it easy for them to find what they need quickly. The topics highlighted are topics that will be built upon in the next academic year so the more they tick off and improve on the better prepared they will be for Year 10.
Similarity and Congruence (Half Term 6)	By the end of this unit students should be able to: • Identify shapes that are congruent • Identify shapes that are similar • Calculate missing lengths in similar shapes **Higher ability students will also be taught about:** • Similarity in 3D shapes	