

Central Hub Brighton – Curriculum Topic Information Sheet

Subject	Year	Term
Maths	KS3 A and B (Year 8/9)	Autumn 2
Topic/s		
Work in the Cartesian Plane; Represent Data; Tables and Probability		
Content (Intent)		
Prior Learning (Topic/s):		
<p>Prior Learning (for above Topics) KS2/3 (Primary/Secondary National Curriculum) that include:</p> <ul style="list-style-type: none"> • Whole Numbers and Decimals • Mental calculations and the four operations • Coordinates, 'x' and 'y' graphs • Barcharts, Frequency tables, Pic Charts, Tally Charts 		
Future Learning (Topic/s) and Links and next steps for current topics		
<p>Future Learning (Topics on Overview): Brackets, Equations and Inequalities; Sequences; Indices</p> <p>Links and next steps for work in the Cartesian Plane:</p> <ul style="list-style-type: none"> • Students could plot points on axes with different scales • Students will use these skills when plotting and interpreting scatter graphs • Students could explore axes with different scales • Students will later perform transformations of shapes in all four quadrants of a coordinate grid • Students could begin to interpret points on graphs with different scales on the axes • Students could explore lines such as $x = 2.5$ or $y = 1/2$ • Students will later describe reflections using lines parallel to the axes • Challenge students to substitute negative values. • Students could explore tables of values for more complex equations, for example $y = -2x$ or $y = x^2$ • Students could substitute negative values for x • If appropriate, students could plot a graph where a table of values is not given • Students could explore straight line graphs from other subjects such as Science • Students could choose their own x-values to construct a table of values to plot a graph • Students could explore straight line graphs from everyday contexts • Students could create tables of values and plot more complex graphs, for example $y = x^2$ and $y = -3x^2$ <p>Links and next steps for Represent Data:</p> <ul style="list-style-type: none"> • Challenge students to read scatter graphs with more difficult scales • Students will analyse two-way tables when studying probability • Students could explore data sets that include outliers and identify these • Students could explore correlation and causality • Challenge students to think of a pair of variables that have, for example, negative correlation • Students could investigate what is meant by interpolation and extrapolation using a line of best fit <p>Links and next steps for Tables and Probability:</p> <ul style="list-style-type: none"> • Students could investigate the minimum amount of information needed to complete a two-way table and create their own problems for a partner to solve • Challenge students to convert probabilities between fractions, decimals and percentages • Students could investigate the product rule for counting to find the total number of outcomes for an event. 		

What Knowledge or Skills will be Taught? (Implementation)	How will your Understanding be Assessed and Recorded (Impact)
Knowledge	On Going Assessment
<p>Main scheme steps for work in the Cartesian Plane:</p> <ul style="list-style-type: none"> • Work with coordinates in all four quadrants • Identify and draw lines that are parallel to the axes • Recognise and use the line $y = x$ • Recognise and use lines of the form $y = kx$ • Link $y = kx$ to direct proportion problems • Explore the gradient of the line $y = kx$ H • Recognise and use lines of the form $y = x + a$ • Explore graphs with negative gradient ($y = -kx$, $y = a - x$, $x + y = a$) • Link graphs to linear sequences • Plot graphs of the form $y = mx + c$ • Explore non-linear graphs H • Find the midpoint of a line segment H <p>Support scheme steps for work in the Cartesian Plane:</p> <ul style="list-style-type: none"> • Work with coordinates in the 1st quadrant • Work with coordinates in all four quadrants • Understand coordinates in all four quadrants • Lines parallel to the axes • Tables of values • Plot graphs of the form $y = mx$ • Plot graphs of the form $y = x + c$ • Plot graphs of the form $y = mx + c$ • Draw straight line graphs <p>Main scheme steps for Represent Data:</p> <ul style="list-style-type: none"> • Draw and interpret scatter graphs • Understand and describe linear correlation • Draw and use line of best fit Identify non-linear relationships • Identify different types of data • Read and interpret ungrouped frequency tables • Read and interpret grouped frequency tables • Represent grouped discrete data • Represent continuous data grouped into equal classes • Represent data in two-way tables <p>Support scheme steps for Represent Data:</p> <ul style="list-style-type: none"> • Read and interpret tables and scatter graphs • Plot scatter graphs • Understand linear correlation • Draw and use a line of best fit <p>Main scheme steps for Tables and Probability:</p> <ul style="list-style-type: none"> • Construct sample spaces for one or more events • Find probabilities from a sample space • Find probabilities from two-way tables • Find probabilities from Venn diagrams • Use the product rule for finding the total number of possible outcomes <p>Support Steps for Tables and Probability:</p>	<p>Ongoing Assessment</p> <ul style="list-style-type: none"> • Q&A throughout the lesson and in the plenary • Mini-whiteboards • Self and Peer assessment • Feedback and Challenge Time (FACT)

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<ul style="list-style-type: none"> • Two-way tables • Probability review • Sample space diagrams 	
Skills	Formal Assessment
<ul style="list-style-type: none"> • Apply the four operations • Work with Graphs ('x' and 'y') and Coordinates • Using mental methods and a calculator • Using concrete resources to reinforce learning • Work with a variety of tables and charts • Use a ruler and pencil to draw charts and graphs 	<ul style="list-style-type: none"> • Formal Assessment End of term White Rose Maths
SEMH Curriculum Knowledge & Skills	Assessment of SEMH Development
<ul style="list-style-type: none"> • Self Esteem • Social Skills • Emotional Resilience <p>Full details can be found within our SEMH Curriculum</p>	<ul style="list-style-type: none"> • Acorns assessment with keyworker • On-going dynamic assessment

How Can Families Help at Home?

Use websites to help reinforce learning and practice skills learnt at school:

Corbettmaths.com

BBCBitesize.co.uk

Practise times tables on a regular basis – Pixl times table App or similar

Encourage your child to use numeracy in their wider world, at home and out of school; and to explore and research Maths for themselves in their everyday lives.

Helpful Further Reading/Discussion (including Reading and Vocabulary Lists)

Reading	Vocabulary Lists
<p>Students should regularly read through Maths problem solving questions to practice interpreting the information which will enable them to pinpoint the Maths skills and knowledge they require to answer the questions.</p> <p>Using Maths revision guides will enable students to become familiar with the meanings of key words which will develop their literacy skills to access further Maths.</p>	<p>Coordinate, Quadrant, Graph, Linear, Scatter Graph, Frequency, Correlation, Tally, Interpret</p>