Bellerive FCJ Catholic College

Department: Maths **Year Group: 11**

Half Term	Learning Focus	Key Knowledge and Skills	Additional Higher Content	Assessment	Challenge and Enrichment
1	Shape Transformations	Identify, describe and construct congruent and similar shapes, including on coordinate axes, by considering rotation, reflection, translation and enlargement (including fractional scale factors)	Construct enlargements, describe combined transformations, and use invariance and vector notation for translations and other transformations.	Mini white board assessment Fortnightly mini assessment of topics following revision calendar (Version A in class and Version B at home) Fortnightly Sparx homework on content covered with feedback.	Transformers Activity Translations with vectors Rotations booklet Describe the enlargement Reflections
	Congruence and Similarity	Identify and use congruence and similarity in shapes to solve geometric problems		Mini white board assessment Fortnightly mini assessment of topics following revision calendar (Version A in class and Version B at home) Fortnightly Sparx homework on content covered with feedback.	Similar areas and volumes Constructions and congruence in triangles
	Length, Area and Volume Scale Factors	Compare lengths, areas and volumes using ratio notation and apply scale factors to identify similarity in figures.	Apply the relationships in lengths, area and volume scale factors in similar figures	Mini white board assessment Fortnightly mini assessment of topics following revision calendar (Version A in class and Version B at home) Fortnightly Sparx homework on content covered with feedback.	Area and Volume Scale Factor GCSE Question
	Bearings and Scale Drawings	Use and construct scale drawings and maps, calculate lengths, and apply bearings and compass points		Mini white board assessment Fortnightly mini assessment of topics following revision calendar (Version A in class and Version B at home) Fortnightly Sparx homework on content covered with feedback.	Scale drawings resources Bearings worksheets Bearings Challenges

	Circumference and Area	Calculate surface areas of solids and work with arcs, sectors, and angles in circles.		Mini white board assessment Fortnightly mini assessment of topics following revision calendar (Version A in class and Version B at home) Fortnightly Sparx homework on content covered with feedback.	Circles questions Arc length and sector area Cone surface area Surface Area Challenges
	Volume	Calculate volumes of solids and apply to solve real-life problems.		Mini white board assessment Fortnightly mini assessment of topics following revision calendar (Version A in class and Version B at home) Fortnightly Sparx homework on content covered with feedback.	Triangular prisms Volume and area GCSE questions
	Loci and Constructions	Measure and draw accurately, construct geometric figures, and use loci to define regions and paths		Mini white board assessment Fortnightly mini assessment of topics following revision calendar (Version A in class and Version B at home) Fortnightly Sparx homework on content covered with feedback.	Online constructions demonstrations and tools Loci challenges booklet
	2D Representations of 3D Shapes	Use 2D representations and isometric drawings to analyse 3D shapes.		Mini white board assessment Fortnightly mini assessment of topics following revision calendar (Version A in class and Version B at home) Fortnightly Sparx homework on content covered with feedback. **M 1-6 Assessment**	Drawing in 2D and 3D Nets of solids
2	Trigonometry	Recall exact trigonometric values for key angles and use them to solve right-angled triangles without a calculator.	Use the sine and cosine rules to solve 2D and 3D problems, interpret trigonometric graphs, and calculate the area of triangles using trigonometric formulae.	Mini white board assessment Fortnightly mini assessment of topics following revision calendar (Version A in class and Version B at home) Fortnightly Sparx homework on content covered with feedback.	GCSE Questions: Sine & Cosine Exact trig values worksheet

	Coordinates and Linear Graphs	Use coordinates to plot points, midpoints and graphs, calculate gradients, and determine equations of lines.	Use gradients to identify parallel and perpendicular lines, and represent inequalities on a graph.	Mini white board assessment Fortnightly mini assessment of topics following revision calendar (Version A in class and Version B at home) Fortnightly Sparx homework on content covered with feedback.	Exam Questions Gradient and y intercept
	Quadratics	Factorise and solve quadratics, and draw and interpret their graphs.	Solve quadratics by various methods, analyse graphs, solve inequalities, and represent solution sets.	Mini white board assessment Fortnightly mini assessment of topics following revision calendar (Version A in class and Version B at home) Fortnightly Sparx homework on content covered with feedback.	Using the quadratic formula Completing the square activity Quadratics from roots, vertex and y-intercept
November Mocks					
3	Simultaneous Equations	Solve simultaneous linear equations and apply them to real-life problems.	Solve simultaneous equations involving one linear and one quadratic equation by finding the points of intersection of their graphs.	Mini white board assessment Fortnightly mini assessment of topics following revision calendar (Version A in class and Version B at home) Fortnightly Sparx homework on content covered with feedback.	Simultaneous equation tasks Simultaneous equations and graphs
	Functions	Understand and use number machines, interpreting operations diagrammatically and as expressions or functions.	Understand functions as relationships between sets of values, use function notation, and substitute values. Interpret and solve equations using composite and inverse functions.	Mini white board assessment Fortnightly mini assessment of topics following revision calendar (Version A in class and Version B at home) Fortnightly Sparx homework on content covered with feedback.	Evaluating Functions Composite functions worksheet pack Inverses of Discrete Functions worksheet
	Iteration **(H only)**		Use systematic trial and improvement and recursive formulae to find approximate solutions of equations without simple analytical methods.	Mini white board assessment Fortnightly mini assessment of topics following revision calendar (Version A in class and Version B at home) Fortnightly Sparx homework on content covered with feedback.	GCSE Style Questions Iteration Questions

4	Proportion	Use direct and inverse proportion to solve problems, set up equations, and interpret graphs.	Construct and use proportionality formulae to solve problems with direct and inverse relationships.	Mini white board assessment Fortnightly mini assessment of topics following revision calendar (Version A in class and Version B at home) Fortnightly Sparx homework on content covered with feedback.	Direct proportion Inverse proportion Proportion matching cards
	Real life Graphs	Plot and interpret real-life graphs, understand gradients, intercepts, and solve related problems.		Mini white board assessment Fortnightly mini assessment of topics following revision calendar (Version A in class and Version B at home) Fortnightly Sparx homework on content covered with feedback.	Card sort 1 GCSE Style Questions
	March Mocks				
	Algebraic Fractions		Simplify, manipulate and solve equations involving algebraic fractions.	Mini white board assessment Fortnightly mini assessment of topics following revision calendar (Version A in class and Version B at home) Fortnightly Sparx homework on content covered with feedback.	Adding and subtracting algebraic fractions Algebraic fractions worksheet
	Inequality Regions	Solve linear inequalities and represent their solutions on a number line using standard conventions.	Set up and graph inequalities, identify feasible regions, and represent solutions as discrete or continuous values.	Mini white board assessment Fortnightly mini assessment of topics following revision calendar (Version A in class and Version B at home) Fortnightly Sparx homework on content covered with feedback.	Set notation for inequalities Defining Regions Using Inequalities
	Graphs and Graph Transformations	Draw, recognise and interpret linear, quadratic, cubic and reciprocal graphs, and use them to find approximate values of x or y.	Draw, recognise and transform graphs of exponential, trigonometric, linear and quadratic functions, including translations	Mini white board assessment Fortnightly mini assessment of topics following revision	Graphing Transformations Graph Transformation GCSE questions

			and reflections, and interpret the resulting functions.	calendar (Version A in class and Version B at home) Fortnightly Sparx homework on content covered with feedback.	
5	Compound Measures	Convert between metric and imperial units, use compound measures, understand speed and related calculations, and interpret distance-time graphs.		Mini white board assessment Fortnightly mini assessment of topics following revision calendar (Version A in class and Version B at home) Fortnightly Sparx homework on content covered with feedback.	RNLI speed distance time IWB activity Compound Measures New GCSE Higher Exam Questions Distance Time Graphs
	Vectors	Use vector notation and column vectors to describe translations, calculate sums, differences, scalar multiples and resultants, and apply properties of vector addition.	Use vectors to solve 2D geometric problems, prove results, and determine parallelism or collinearity of points.	Mini white board assessment Fortnightly mini assessment of topics following revision calendar (Version A in class and Version B at home) Fortnightly Sparx homework on content covered with feedback.	Adding and Subtracting with Vectors Matching cards Vectors exam questions
	Proof	Use algebraic identities to show equivalence, solve for unknowns, and support arguments, including reasoning with even and odd numbers.	Construct rigorous proofs to justify results, including number properties, algebraic expressions, and general statements about integers.	Mini white board assessment Fortnightly mini assessment of topics following revision calendar (Version A in class and Version B at home) Fortnightly Sparx homework on content covered with feedback.	If a is an integer Algebraic proofs GCSE Quadratic proofs
	Circle Theorems Proofs **(H only)**		Prove and apply circle theorems, including angles at the centre, angles in a semicircle, angles in the same segment, cyclic quadrilaterals, and the alternate segment theorem.	Mini white board assessment Fortnightly mini assessment of topics following revision calendar (Version A in class and Version B at home) Fortnightly Sparx homework on content covered with feedback.	Circle theorems match up Circle theorems revision online task Angle problems including circle theorems
	Area under a Graph **(H only)**		Estimate gradients and areas under curves using tangents and shapes and interpret their meanings and units.	Mini white board assessment Fortnightly mini assessment of topics following revision calendar (Version A in class and Version B at home)	Finding the gradient of a curve using a tangent Area under graph

				Fortnightly Sparx homework on content covered with feedback.	
	Equation of a circle and tangent **(H only)**		Use and apply the equation of a circle, find intersections with lines, and determine tangents using the radius-perpendicular property.	Mini white board assessment Fortnightly mini assessment of topics following revision calendar (Version A in class and Version B at home) Fortnightly Sparx homework on content covered with feedback.	General formula for a circle Circles and tangents