Newport Girls' High School **Y7-11 Learning Overview**

Subject:	Maths	**Lead Teacher:**	Mrs C Petford	**Year:**	7

Curriculum organisation
Students are taught in mixed groups of 30 for **three** hours per week. They are not grouped by ability.

Overview of Topics & Key Information

Term	Unit(s) of Work	Key Enquiry Questions	Key Content/ Terminology	Skills developed
Autumn Term	• Types of number • Calculations • Working with shapes • Place value and rounding • Coordinates and transformations • Using letter symbols • Measurements • Working with decimals • Further calculations • Sequences • Area and perimeter	• Which of these numbers is divisible by …? • Find the square/cube number from this list of numbers. • Find the common factors of these number • How do you identify the order to complete a calculation? • Which of these shapes are regular? • How many lines of symmetry does this shape have? • What is the order of symmetry of this shape? • What type of transformation has happened to this image? • How many tenths in one whole? • What is the value of 6 in 4632? • How do you round to the first decimal place? • How do you simplify expressions? • I think of a number, multiply it by 3 and then add 5. My answer is 17.	• Multiples, factors, primes, powers and roots • Multiplying and dividing integers, word problems, BIDMAS • Properties of 2D shapes, line and rotational symmetry • Understanding decimals, rounding • Coordinates, translations, reflections and rotations • Word formulae, using letters, simplifying expressions and equations • The metric system, converting units of length • Multiplying and dividing by powers of 10, adding, subtracting, multiplying and dividing decimals • Multiplying and dividing decimals • Working with sequences, generating sequences • Perimeter, area of rectangles, triangles and compound shapes	• Finding multiples and common multiples, finding factors and common factors, testing divisibility, identify prime numbers, square and cube numbers, find the square/cube root of a number • Use written multiplication and division methods, solve worded problems, complete calculations using the correct order of operation • Recognising types of angles, properties of 2D shapes, classifying types of triangles, recognising and drawing lines of and rotational symmetry • Drawing axes and plotting coordinates in all four quadrants, describing translations, reflections and rotations, translating, reflecting and rotating an object • Writing and using a word formula, substitution, writing and simplifying expressions, solving equations • Using metric units, reading scales, converting units of volume, mass and length • Multiplying and dividing by powers of 10, calculating with decimals • Calculating with decimals, problem solving • Find terms of number and pattern sequences, use position-to-term rules

How will your child be learning?

- Whole class discussion
- Pair work
- Problem-solving tasks
- Independent work
- Group work
- Investigations

		What number was I thinking of? • How do you convert between mm, cm, m and km? • What do you need to remember when adding and subtracting decimals using the column method? • What calculation can you use to help solve 1.6 x 0.2? How? • What written methods can you use when calculating? • Are these numbers/images part of the sequence? • What is the difference between area and perimeter? • How do you calculate the area of compound shapes?		• Find perimeter, area of rectangles, triangles and compound shapes, problem solving	
Spring Term	• Negative numbers • Fractions • Angles • Percentages • Ratio and proportion • Averages and range • Constructions	• What happens when you add a negative number? • Are the rules for multiplying and dividing negative numbers the same? Why? • Which fraction is bigger? Why? • How many tenths in one whole? • What is a reciprocal? • What are the properties of the different types of angles? • What is the difference between corresponding, alternate and co-interior angles? • How do you find the total of the angles in a polygon? • • What does percent mean? • How do you convert between fractions, decimals and percentages?	• Understanding negative numbers, adding, subtracting, multiplying and dividing negative numbers • Equivalent fractions, adding and subtracting fractions, finding a fraction of an amount, dividing an integer by a fraction, multiplying and dividing fractions • Angle facts, angles in triangles, quadrilaterals and polygons, angles on parallel lines • Understanding percentages, percentages of amounts, converting between fractions, decimals and percentages • Understanding ratio, share in a given ratio, proportion • Mode, median, mean and range • Bearings, scale drawings, constructions	• Understanding negative numbers, comparing directed numbers, adding, subtracting, multiplying and dividing negative numbers, squares, cubes and roots with negative numbers • Find equivalent fractions, simplify fractions, compare fractions, write one quantity as a fraction of another, add and subtract fractions, find fractions of amounts, dividing an integer by a fraction, divide a fraction by an integer, find reciprocals, multiplying and dividing fractions • Angles on a straight line, at a point, vertically opposite, in a triangle and quadrilateral, corresponding, alternate and co-interior angles, interior and exterior angles of polygons • The meaning of percentages, one quantity as a percentage of another, finding percentages of an amount with and without a calculator, converting between fractions, decimals and percentages	

		• What does the ratio 3 : 2 mean? • How do you calculate the mode, median, mean and range? • Is there an outlier? Should it be included when calculating an average? • What are the rules for measuring and drawing bearings?		• Recognising and understanding ratio, equivalent ratios, simplifying ratios, sharing into a ratio, ratio problems, understanding proportion, ratio tables, unitary method • Using the mode, median, mean and range, comparing and changing data • Understanding, drawing and measuring bearings, scale drawings, constructing a triangle using a ruler and protractor	
Summer Term	• Probability • Displaying data • Graphs • Working with 2D shapes • Properties of 3D shapes	• Give an example an outcome an experiment this is (impossible, certain, likely, etc.) • Are these events mutually exclusive? • What is the best diagram to display the data? Why? • What is the x coordinate for the line x = 3? • What is a quadrilateral? What different types of quadrilateral are there? • What property do all prisms have? • How many different ways can you draw the net of a cube? • What is the difference between surface area and volume?	• Probability and single events • Using tables and charts, vertical line charts • Straight line graphs, real life graphs • Types of quadrilaterals, area • Properties of 3D shapes, nets, surface area and volume of cuboids	• The language of probability, the probability scale, experiments and outcomes, equally likely outcomes, mutually exclusive events • Drawing and interpreting frequency tables, pictograms, bar charts, vertical line charts • Horizontal and vertical lines, plotting graphs using a table of values, using straight line graphs, interpreting and plotting real life graphs • Types and properties of quadrilaterals, area of a parallelogram and trapezium • Prisms, planes of symmetry, identify faces, edges and vertices, nets, surface area and volume of cuboids	

Equipment needed for lessons	**How will learning and progress be assessed?**
• Standard school stationery (Pencil, Blue/Black Pen, Green Pen, Rubber, Sharpener, Ruler, Whiteboard pen) • Exercise book • Scientific Calculator • Pair of Compasses • Protractor	• Half termly tests • Formal assessment week • Peer and self-assessment • Homework tasks • Retrieval practice activities

Extension & Enrichment opportunities	**What can you do to support your child?**

• Junior mathematics challenge • House mathematics competition • KS3 Puzzle and problem-solving lunchtime club	• Several websites are very useful that include videos, questions and walked through examples, these are: mymaths.co.uk, corbettmaths.com and drfrostmaths.com • Encourage regular revision
Inclusion	**Inclusion within Y7 Maths**
• Teachers follow student passports to ensure that the needs of all students with SEND are met. • Work is enlarged to the necessary size for visually impaired students. • Teachers will ensure that classrooms are quiet learning environments where possible and will dim lights to support students with sensory needs. • Students have the use of laptop if they have a SEND need whereby use of a laptop supports them. • Hearing impaired students are supported through use a radio aid and teachers ensure that students can lip read at all times during lessons. • Dyslexic students are encouraged to use coloured overlays when they are required to read long passages. • Use of dyslexic friendly fonts and coloured backgrounds used in PowerPoints/resources. • Students with ADHD are given movement breaks, fidget toys and lessons are 'chunked' to aid concentration. • Students are seated according to their needs, students work with the SENDCo to decide upon this.	• Equipment is adapted wherever necessary to accommodate the needs of students with SEND • Where necessary, pupils are given frequent one to one tutorials to revisit previous topics and methods taught to support their understanding • Pupils are provided with online resources to help with learning outside of the classroom and homework, such as videos and worked examples • Students have access to spare mathematical equipment to help with organisation

If you have any questions about this Learning Overview, please contact the named Teacher above.