



Marshalls Park Academy - Curriculum Overview



Subject: Mathematics

Year Group: 8

In Year 8, the curriculum supports students become fluent in the fundamentals of mathematics. Students develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately. They also develop problem solving skills.

TERM 1	TERM 2	TERM 3
<p style="text-align: center;">CONTENT/SKILLS</p> <p>Number</p> <ul style="list-style-type: none"> • Use written methods to add and subtract more than two numbers (including decimals) • Use mental calculation for multiplication • Estimate answers to calculations • Know and use divisibility rules • Use a written method to divide decimal numbers by integers • Add, subtract, multiply and divide positive and negative numbers, including larger numbers and decimals • Calculate using squares, square roots, cubes and cube roots • Say which integers a square root lies between • Calculate combinations of squares, square roots, cubes, cube roots and brackets • Use index form • Write a number as the product of its prime factors • Use prime factor decomposition to find the highest common factor (HCF) and lowest common multiple (LCM) <p>Area and volume</p> <ul style="list-style-type: none"> • Derive and use the formula for the area of a triangle 	<p style="text-align: center;">CONTENT/SKILLS</p> <p>Real-life graphs</p> <ul style="list-style-type: none"> • Draw, use and interpret conversion graphs • Interpret a distance–time graph • Draw a simple distance–time graph • Draw and use graphs to solve distance–time problems • Draw and interpret line graphs • Draw and interpret line graphs and identify trends • Draw and interpret linear and non-linear graphs from a range of sources • Draw and interpret curved graphs from a range of sources <p>Decimals and ratio</p> <ul style="list-style-type: none"> • Round decimals to 2 or 3 decimal places • Round numbers to a given number of significant figures • Round numbers to an appropriate degree of accuracy 	<p style="text-align: center;">CONTENT/SKILLS</p> <p>Straight-line graphs</p> <ul style="list-style-type: none"> • Recognise when values are in direct proportion with or without a graph • Plot graphs and read values to solve problems • Plot a straight-line graph and work out its gradient • Plot the graphs of linear equations • Write the equations of straight-line graphs in the form $y = mx + c$ <p>Percentages, decimals and fractions</p> <ul style="list-style-type: none"> • Change time to decimal hours • Recall equivalent fractions and decimals • Recognise recurring and terminating decimals • Order fractions by converting them to decimals or equivalent fractions • Recall equivalent fractions, decimals and percentages • Use different methods to find equivalent fractions, decimals and percentages



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- Calculate the area of compound shapes made from rectangles and triangles
- Derive and use the formula for the area of a parallelogram
- Use the formula for the area of a trapezium
- Calculate the volume of cubes and cuboids
- Calculate the volume of 3D solids made from cuboids
- Solve volume problems
- Sketch nets of 3D solids
- Draw 3D solids on isometric paper
- Draw plans and elevations of 3D solids
- Calculate the surface area of cubes and cuboids
- Solve problems in everyday contexts involving measures
- Convert between different measures for area, volume and capacity
- Use tonnes and hectares
- Know rough metric equivalents of imperial measures

Statistics, graphs and charts

- Interpret pie charts
- Draw pie charts
- Calculate the mean from a frequency table
- Use two-way tables
- Use tables for grouped data
- Draw stem and leaf diagrams for data
- Interpret stem and leaf diagrams
- Compare two sets of data using statistics or the shape of the graph
- Construct line graphs
- Choose the most appropriate average to use

- Order decimals of any size, including positive and negative decimals
- Multiply any number by 0.1 and 0.01
- Multiply larger numbers
- Multiply decimals with up to and including 2 decimal places
- Divide by 0.1 and 0.01
- Multiply and divide by decimals
- Solve problems involving decimals and all four operations
- Divide a quantity into three or more parts in a given ratio
- Use ratios involving decimals
- Solve ratio and proportion problems
- Use unit ratios

Lines and angles

- Classify quadrilaterals by their geometric properties
- Solve geometric problems using side and angle properties of special quadrilaterals
- Identify alternate angles on a diagram
- Understand proofs of angle facts
- Identify corresponding angles
- Solve problems using properties of angles in parallel and intersecting lines
- Calculate the sum of the interior and exterior angles of a polygon

- Use the equivalence of fractions, decimals and percentages to compare two proportions
- Express one number as a percentage of another when the units are different
- Work out an amount increased or decreased by a percentage
- Use mental strategies to solve percentage problems

INTRODUCTION TO YEAR 9 MATHS

Indices and standard form

Expressions and formulae

Data – interpreting and representing data



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- Draw a scatter graph
- Draw a line of best fit on a scatter graph
- Describe types of correlation
- Interpret graphs and charts
- Explain why a graph or chart could be misleading

Expressions and equations

- Understand and simplify algebraic powers
- Write and use expressions involving powers
- Expand brackets
- Write and simplify algebraic expressions and formulae using brackets and division
- Factorise expressions
- Find the inverse of a simple function
- Write and solve one-step equations using function machines
- Solve and write two-step equations using function machines
- Solve problems using equations
- Solve equations using the balancing method

- Work out the sizes of interior and exterior angles of a polygon
- Solve geometric problems, showing reasoning
- Solve problems involving angles by setting up equations

Calculating with fractions

- Identify fractions as more than $\frac{1}{2}$ or less than $\frac{1}{2}$
- Order fractions
- Add and subtract fractions with any size denominator
- Multiply integers and fractions by a fraction
- Use appropriate methods for multiplying fractions
- Find the reciprocal of a number
- Divide integers and fractions by a fraction
- Use strategies for dividing fractions
- Write a mixed number as an improper fraction
- Use the four operations with mixed numbers

KEY ASSESSMENTS

HALF TERM 1
Unit assessment

HALF TERM 2
End of Term 1 assessment

KEY ASSESSMENTS

HALF TERM 3
Unit assessment

HALF TERM 4
End of Term 2 assessment

KEY ASSESSMENTS

HALF TERM 5
Unit assessment

HALF TERM 6
End of Year assessment



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Students have access to Mathswatch revision resources and supporting video clips. <https://vle.mathswatch.co.uk/vle/>

Edexcel Key stage 3 revision guides are available to support learning.

Students can obtain further revision resources from www.mathsgenie.co.uk and www.corbettmaths.com