# Curriculum plan: Mathematics

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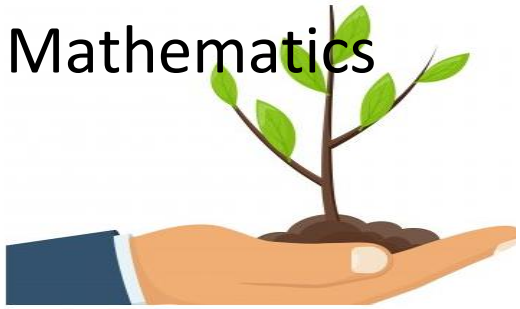
# INTENT:



**“God used beautiful mathematics in creating the world”**

**Paul Dirac**

Maths is a universal language that explains the world around us. The study of mathematics in The King’s enables students to make sense of everyday situations, forge links between topics and establish connections to real life context.

As a fundamental discipline in our lives, maths fosters curiosity, equipping students with various strategies to tackle problems; it empowers students with resilience to take risks, get it wrong, form a new strategy and start again, with determination and drive to reach the final answer.

Maths is logical thinking, reasoning, intuition, analysis, construction, generalization and beauty.

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## 7

## Half term points

### AUTUMN 1

All:

H/ HF:

F:

Learning includes:

- N2.1 Whole numbers
- N1.1 Adding and subtracting whole numbers
- N7.1 Multiples
- N3.1 Rounding to the nearest 10 or 100
- GM1.1 Length
- GM1.2 Mass
- GM1.3 Time
- GM1.4 Volume
- GM5.1 Position and cartesian coordinates
- N2.2 Writing and ordering decimals
- N1.2 Multiplying whole numbers

### AUTUMN 2

H:

H/ FH:

FH:

F:

Learning includes:

- SP2.1 Using tables and charts
- GM2.1 Common shapes
- GM4.1 Angles in degrees
- GM2.2 Line symmetry
- SP1.3 Using frequency tables
- SP2.4 Pie charts
- GM5.4 Reflection
- N3.3 Rounding decimals to the nearest integer
- SP1.1 Mode, median and range
- SP1.2 Using mean, median, mode and range
- SP2.2 Stem and leaf diagrams

### SPRING 1

H

H/ HF:

F:

Learning includes:

- N2.4 Negative numbers
- SP1.3 Using frequency tables
- SP2.3 Vertical line charts
- N2.4 Negative numbers
- A1.1 Making and using word formulae
- A1.2 Using letters
- N1.5 Adding and subtracting negative numbers
- N1.6 Multiplying and dividing negative numbers
- SP3.1 Collecting data
- SP1.2 Using mean, median, mode and range

### SPRING 2

H

H/ HF:

F:

Learning includes:

- N4.1 Understanding fractions
- A2.1 What is a sequence?
- N4.2 Finding equivalent fractions
- A2.2 Generating sequences
- N4.3 Multiplying fractions
- GM2.3 Angle facts

### SUMMER 1

H:

F:

Learning includes:

- N5.1 Understanding and using percentages
- N5.2 Calculating percentages of quantities
- N5.3 Converting between fractions, decimals and percentages
- SP4.2 Single event probability
- GM4.2 Constructions with a ruler and protractor
- SP4.1 Introduction to probability
- GM2.5 Angles in triangles and quadrilaterals

### SUMMER 2

H:

F:

Learning includes:

- N1.4 Dividing whole numbers
- GM3.1 Understanding area
- N7.3 Divisibility tests
- N2.5 Using the number system effectively
- N3.4 Rounding decimals
- N3.5 Significance
- GM3.2 Finding area and perimeter
- A3.1 Real life graphs

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| | | | | | | |
|---|---|---|---|---|---|---|
| | N2.3 Multiplying and dividing by powers of 10<br>N7.2 Factors, primes and powers<br>N3.2 Rounding larger numbers<br>GM1.5 Interpreting Scales<br>GM1.6 The metric system<br>GM5.2 Cartesian coordinates in four quadrants<br>GM5.3 Translation | GM2.4 Rotational symmetry<br>GM5.5 Rotation<br>GM6.1 Properties of 3-D shapes<br>N1.3 Adding and subtracting decimals | A1.3 Combining variables<br>A1.4 Working with formulae | | | |

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## Half term points

| | AUTUMN 1 | AUTUMN 2 | SPRING 1 | SPRING 2 | SUMMER 1 | SUMMER 2 |
|---|---|---|---|---|---|---|
| 8 | H:<br>F:<br>H/F:<br><br>**Learning includes:** N1.2 Multiplying whole numbers<br>N2.2 Writing and ordering decimals<br>N3.2 Rounding larger numbers<br>A2.1 What is a sequence? review<br>GM2.3 Angle facts<br>N2.3 Multiplying and dividing by powers of 10<br>N7.2 Factors, primes, and powers<br>N1.5 Adding and subtracting negative numbers<br>N1.6 Multiplying and dividing negative numbers<br>A2.2 Generating sequences<br>GM2.5 Angles in triangles and quadrilaterals | H:<br>F:<br>H/F:<br><br>**Learning includes:**<br>A1.1 Making and using word formulae<br>A1.2 Using letters<br>SP2.3 Vertical line charts<br>SP2.4 Pie charts<br>N4.2 Equivalent fractions<br>N1.4 Dividing whole<br>GM6.2 Understanding nets<br>GM6.1 Properties of 3-D shapes<br>A1.3 Combining variables<br>SP2.2 Stem & leaf diagrams<br>SP1.1/2 Using mean, median, mode and range<br>SP3.1 Collecting data<br>N4.3 Multiplying fractions<br>N7.3 Divisibility tests<br>GM4.2 Constructions with a ruler and protractor<br>GM2.4 Rotational symmetry<br>GM2.6 Types of quadrilateral | H<br>H/ HF:<br>F:<br><br>**Learning includes:**<br>A1.2 Using letters<br>N1.3 Adding and subtracting decimals<br>N3.3 Rounding decimals to the nearest integer<br>GM1.5 Interpreting scales<br>A1.4 Working with formulae<br>A3.1 Real life graphs<br>N1.7 Order of operations BIDMAS<br>GM1.8 Bearings<br>A3.2 Plotting graphs of linear functions<br>N1.8 Multiplying decimals<br>N1.9 Dividing decimals<br>GM3.3 Circumference | H<br>H/ HF:<br>F:<br><br>**Learning includes:**<br>A1.3 Combining variables<br>N4.2 Equivalent fractions<br>GM1.6 The metric system<br>GM5.2 Cartesian coordinates in four quadrants<br>GM5.3 Translation<br>A1.5 Setting up and solving simple equations<br>A1.6 Using brackets<br>SP4.1 Introduction to Probability<br>SP4.2 Single event probability<br>N2.5 Using the number system effectively<br>GM5.5 Rotation<br>A1.7 Working with more complex equations | H:<br>F:<br><br>**Learning includes**<br>N7.2 Factors, primes and powers<br>N1.5 Adding and subtracting negative numbers<br>A1.4 Working with formulae<br>A2.2 Generating sequences<br>GM3.1 Understanding area<br>GM6.1 Properties of 3-D shapes<br>A2.3 Linear sequences<br>GM3.2 Finding area and perimeter<br>GM6.2 Understanding nets<br>A2.4 Special sequences | H:<br>F:<br><br>**Learning includes:**<br>A1.5 Setting up and solving simple equations<br>SP1.1 Mode, median and range<br>SP1.2 Using mean, median, mode and range<br>SP2.2 Stem and leaf diagrams<br>N5.1 Understanding and using percentages<br>N5.2 Calculating percentages of quantities<br>GM2.4 Rotational symmetry<br>GM6.2 Understanding nets<br>SP3.1 Collecting data<br>SP1.3 Using frequency tables<br>N3.4 Rounding decimals<br>N5.3 Converting between fractions decimals and percentages |

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| | | | | | | |
|---|---|---|---|---|---|---|
| | N1.7 Order of operations BIDMAS<br>A2.3 Linear sequences<br>GM2.6 Types of quadrilateral<br>GM2.7 Angles and parallel lines | **GM6.1 Properties of 3-D shapes**<br>A1.5 Setting up and solving simple equations<br>A1.6 Using brackets<br>SP2.6 Scatter diagrams<br>N4.4 Adding and subtracting fractions<br>N4.5 Working with mixed numbers<br>N4.6 Dividing fractions<br>GM4.3 Constructions with a pair of compasses<br>GM6.2 Understanding nets | | A1.8 Solving equations with brackets<br>SP4.3 Combined events<br>N6.2 Sharing in a given ratio<br>N6.3 Working with proportional quantities<br>GM1.7 Metric-imperial conversions<br>GM1.9 Scale drawing<br>GM5.6 Enlargement<br>N6.1 Understanding ratio notation | GM6.3 Volume and surface area of cuboids<br>N7.4 Index notation | **GM6.3 Volume and surface area of cuboids**<br>A4.1 Trial and improvement<br>S3.2 Designing a questionnaire<br>S1.4 Using grouped frequency tables<br>S2.5 Displaying grouped data<br>N5.4 Applying percentage increases and decreases to amounts<br>GM6.4 2-D representations of 3-D shapes |

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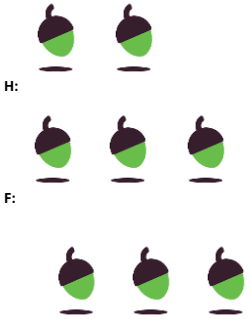
*Key found at the bottom of the document*

## Half term points

### AUTUMN 1

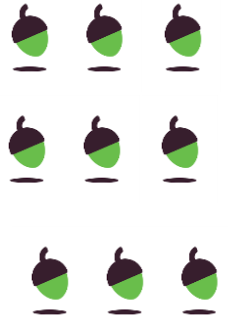



**Key learning to include:**
A3.1 Real-life graphs
SP1.3 Using frequency tables
GM3.2 Finding area and perimeter
N2.5 Using the number system effectively

**Key learning to include:**
A3.2 Plotting graphs of linear functions
SP3.2 Designing a questionnaire
SP2.6 Scatter diagrams
GM3.3 Circumference
N1.8 Multiplying decimals
N1.9 Dividing decimals

**Key learning to include:**
A3.3The equation of a straight line
SP1.4 Using grouped frequency tables
SP2.5 Displaying grouped data
GM3.4 Area of circles
N2.6 Writing numbers in standard form

### AUTUMN 2

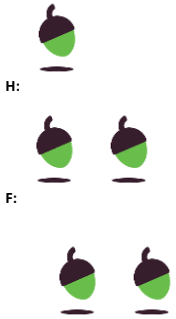



**Key learning to include:**
A1.5 Setting up, solving simple equations
A1.6 Using brackets
N1.7 BIDMAS
GM3.3 Circumference
N4.3 Multiplying fraction's
N5.3 Converting between fractions, decimals and percentages

**Key learning to include:**
A1.7 Working with more complex equations
A1.8 Solving equations with brackets
GM3.4 Area of circles
N5.4 Applying percentage increases and decreases to amounts

**Key learning to include:**
A1.9 Simplifying harder expressions
GM3.5 Pythagoras' theorem
N5.5 Finding the percentage change from one amount to another
N5.6 Reverse percentages

### SPRING 1



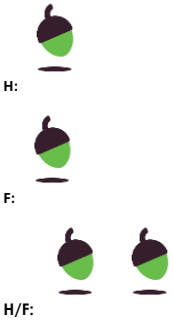

**Key learning to include:**
A1.7 Working with more complex equations
GM 2.5 Angles in triangles and quadrilaterals
GM 2.6 Types of quadrilateral
SP1.3 Using frequency tables
SP2.2 Stem and leaf diagrams

**Key learning to include:**
A4.1 Trial and improvement
GM 2.7 Angles and parallel lines
GM1.8 Bearings
SP1.4 Using grouped frequency tables

**Key learning to include:**
A4.2 Linear inequalities
GM2.8 Angles in a polygon
N7.5 Prime factorisation
SP1.5 Interquartile range
SP2.5 Displaying grouped data

**Key learning to include:**
N7.4 Index notation

### SPRING 2

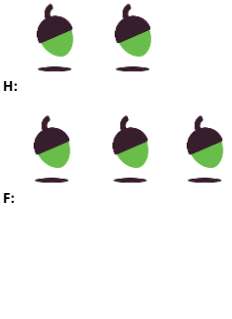



**Key learning to include:**
N1.6 Multiplying and dividing negative numbers
A2.3 Linear sequences
A3.2 Plotting graphs of linear functions
GM6.3 Volume and surface area of cuboids
N6.1 Understanding ratio notation

**Key learning to include:**
A2.4 Special sequences
A3.3 The equation of a straight line
GM6.4 2-D representations of 3-D shapes
N4.5 Working with mixed numbers
GM1.7 Metric-imperial conversions
N6.3 Working with proportional quantities

**Key learning to include:**
A2.5 Quadratic sequences
A3.4 Plotting quadratic and cubic graphs
GM6.5 Prisms
GM1.10 Compound units
N6.4 The constant of

### SUMMER 1

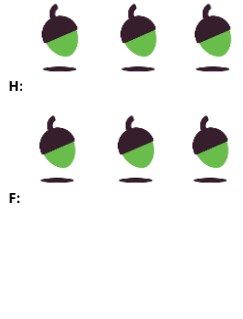



**Key learning to include:**
A3.2 Plotting graphs of linear functions
N3.4 Rounding decimals
GM1.7 Metric-imperial conversions
GM1.8 Bearings
GM4.2 Constructions with a ruler and protractor

**Key learning to include:**
A4.2 Linear inequalities
N3.5 Significance
GM1.9 Scale drawing
GM4.3 Constructions with a pair of compasses

**Key learning to include:**
A4.3 Solve pairs of equations by substitution
A4.4 Solve simultaneous equations using elimination
A4.5 Using graphs to solve simultaneous equations
N3.6 Approximating
N3.7 Limits of accuracy
GM4.4 Loci

### SUMMER 2




**Key learning to include:**
N6.3 Working with proportional quantities
A1.4 Working with formulae
A1.5 Setting up and solving simple equations
A1.6 Using brackets
A1.7 Working with more complex equations
A1.8 Solving equations with brackets
GM5.4 Reflection
GM5.5 Rotation
SP4.1 probability
SP4.2 Single event probability

**Key learning to include:**
N6.2 Sharing in a given ratio
A1.9 Simplifying harder expressions
GM5.6 Enlargement
SP4.3 Combined events
N4.4 Add, sub fractions
N4.6 Dividing fractions

**Key learning to include:**
N6.5 Inversely proportional quantities
A1.10 Using complex formulae
GM5.7 Similarity
GM5.8 Trigonometry
SP4.4 Estimating probability

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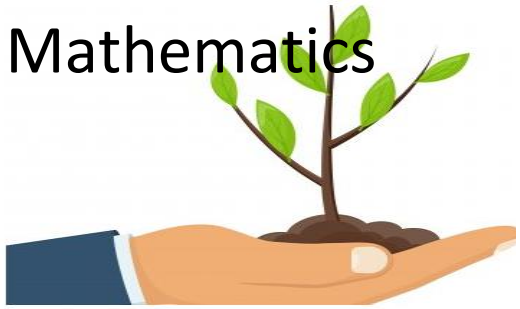

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| Working towards (Key) |
| --- |
| Higher Tier<br>Grades 9 - 4 |
| Both Higher Tier and Higher/Foundation<br>Students will take either the Higher Tier<br>Or the Foundation Tier |
| Higher/Foundation Tier |
| Both Higher/Foundation and Foundation Tier<br>Students will take the Foundation Tier or Higher Tier |
| Foundation Tier<br>Grades 5 - 1 |
| All Tiers<br>Grades 9 – 1 |