

Subject:

# Mathematics



HECKMONDWIKE  
GRAMMAR SCHOOL

## KS4 - Year 10 Curriculum Overview

### Topics being taught

### What you will be assessed on

### How you can support at home

Autumn Term

#### Indices

- Laws of Indices
- Relationship between powers and roots
- Surds

#### Coordinate Geometry

- Equations of lines
- Parallel and perpendicular lines

#### Constructing Triangles

#### Congruency

#### Circle Theorems

#### Algebraic Manipulation

- Factorising and expanding quadratic expressions

- Identities and equivalency

- Rearranging formulae

#### Solving Quadratic Equations

Term 1

Topic tests on:

Powers, Roots and Surds

Coordinate Geometry

Term 2

Topic test on Circle Theorems

Synoptic test on everything covered since the beginning of year 9

Ensure students bring a ruler, pencils, a pair of compasses and a protractor to lessons. Encourage them to practice constructions at home to refine their measuring and fine motor skills.

Encourage your child to regularly complete tasks on [www.drfrstmaths.com](http://www.drfrstmaths.com)

Look at upcoming topics and prompt your child to use last years' exercise book to revise ready to take it further in lessons.

Take some time off over the Christmas Holiday to recharge but do a bit of revision as a warmup ready for the new term.

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### Topics being taught

### What you will be assessed on

### How you can support at home

Spring Term

#### Probability

- Combined events
  - Tree diagrams
  - Sample space diagrams
  - Venn diagrams
- Choices and Outcomes

#### Sets and Set Notation

#### Histograms

#### Sequences

- Linear, quadratic and geometric
- Iteration

#### Ratio and Proportion

#### Similarity

- Linear Scale Factors

#### Trigonometry

- Exact trigonometric values
- Sine Rule and Cosine Rule
- Area of a triangle

#### Scale Drawings and Bearings

Term 3

Topic tests on:

Probability

Ratio and Proportion

Term 4

Topic tests on:

Trigonometric Ratios and Exact Trigonometric Values

Sine Rule, Cosine Rule, Scale Drawings and Bearings

Synoptic test on everything covered since the beginning of year 9

Retry Stepping Stones from previous years as a form of revision. Have they improved since they last completed it? Can they still remember that topic?

Make use of revision guides and workbooks.

Ensure students bring a *scientific* calculator to lessons.

Use websites like [www.mathsgenie.co.uk](http://www.mathsgenie.co.uk) to practice exam style questions.

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### Topics being taught

### What you will be assessed on

### How you can support at home

Summer Term

#### Quadratic Curves

- Turning Point and Intercepts

#### Inequalities

- Solution set on a number line
- Inequality Regions
- Quadratic Inequalities

#### Area and Volume Scale Factors

#### Pythagoras' Theorem in 3D

#### Trigonometry in 3D

#### Limits of Accuracy

- Rounding
- Upper and Lower Bounds (Error Intervals)

#### Surface Areas and Volumes

#### Vectors

- Vector Arithmetic
- Vector Geometry

#### Compound Measures

- Speed, Pressure, Density and Hourly Pay
- Compound Interest
- Growth and Decay
- Rate of Change
- Real-Life Graphs

Term 5

Topic tests on Quadratic Curves and Inequalities

Synoptic assessment on everything covered since the beginning of year 9

Term 6

Topic tests on:

Vectors

Compound Measures and Real-Life Graphs

Use [www.desmos.com](http://www.desmos.com) to help with the properties of quadratic curves and inequality regions.

Support your child in the run up to their exams. Keep them in a positive state of mind with a healthy work/life balance.

Use the resources teachers have provided on Teams or have handed out to students.

Encourage your child to regularly practise on [www.drfrstmaths.com](http://www.drfrstmaths.com)