

Maths



Year 10 Curriculum Map



Year 10 – Autumn Term

<p>Prior Learning</p>	<p>All of the previous topics build upon prior learning done in key stage 3. To be able to understand the new learning on <i>similarity</i> pupils will have covered the basic skills of enlargements, similarity, congruency and Pythagoras’ Theorem in year 9. They will have previously studied forming and solving equations and drawing straight line graphs in the autumn term of year 9. These skills will be developed further in the <i>developing algebra</i> topics in the autumn term of year 10.</p>
<p>What will I learn?</p>	<p>Pupils will begin the term learning all about <i>similarity</i>, starting with <u>congruence, similarity and enlargement</u>, followed by looking at <u>trigonometry</u>. The second half of the autumn term will be spent looking at <i>developing algebra</i>, with pupils studying the topic of <u>representing solutions of equations and inequalities</u>, before moving on to <u>simultaneous equations</u>. Each of the topic areas are broken down into small steps of key skills and knowledge for pupils to master. Topics from the first half of the autumn term and key stage 3 will be interleaved during the retrieval practice in second part of the term.</p>
<p>How will I be assessed?</p>	<p>Pupils are assessed in 3 ways.</p> <ul style="list-style-type: none"> • Constant lesson by lesson assessment. • Four mini assessments on each of the areas of study highlighted above. • One large summative assessment covering all of the key knowledge from the autumn term, and recalling previous knowledge from key stage 3.
<p>Next Steps</p>	<p>Pupils will move on to looking at the following topics in the Spring term: Geometry; and Proportions and Proportional Reasoning. This will introduce pupils to new units of geometry and number, but also build upon the topics in the autumn term of year 10 and the learning from key stage 3.</p> <p>The concepts from this term will be built upon further in year 11 half term 1 - Gradients & Lines; year 10 half term 1 - Non-Linear Graphs; year 11 half term 2 - Expanding and factorising; and year 11 half term 4 - Transforming and constructing.</p>
<p>Opportunities for Independent Learning</p>	<p>Sparx Maths – Compulsory Tasks (1 Hour per week) Sparx Maths – XP Boost and Target Homework Activities. BBC Bitesize Maths Genie ExamQ</p>
<p>Personal Development and CEIAG</p>	<p>The skills gained from working with algebra can be used by Chemists; Physicists; Astronomers; Cryptologists as well as Mathematicians. Numeracy is an essential life skill, understanding number is an integral part of everyday life both at work and at home. Similarity could be used by careers such as Marketing and Architects. Trigonometry could be used in Mechanical and Structural Engineering. Solving Equations could be used by Financial Analysts or Scientists.</p>
<p>Enrichment Opportunities (Cultural Capital)</p>	<p>Using algebra in everyday life, eg formula for cooking time. Using trigonometry in everyday life, eg finding the height of tall objects Using equations in everyday life, eg finding how long to cook a turkey</p>



Year 10 – Spring Term

<p>Prior Learning</p>	<p>All of the previous topics build upon prior learning done in year 10 autumn term and also in key stage 3. To be able to understand the new learning on <i>geometry</i> pupils will have covered the basic skills of angles in years 7 & 8. They will have previously looked at the circles in year 8. The work on ratios and fractions will be supplementary to the work they have done in years 7, 8 & 9. They will have previously studied percentages in years 8 & 9. Probability will have been previously studied in years 7, 8 and 9. These skills will be developed further in the <i>proportion and proportional reasoning</i> topics in the spring term of year 10.</p>
<p>What will I learn?</p>	<p>Pupils will begin the term learning all about <i>geometry</i> starting with <u>angles and bearings</u>, followed by looking at <u>working with circles</u>, before finishing the first half of the spring term with <u>vectors</u>. The second half of the spring term will be spent looking at <i>proportion and proportional reasoning</i>, with pupils studying the topic of <u>ratios and fractions</u>, before moving on to <u>percentages and interest</u>, and finishing with <u>probability</u>. Each of the topic areas are broken down into small steps of key skills and knowledge for pupils to master. Topics from the autumn term and key stage 3 will be interleaved during the retrieval practice this term.</p>
<p>How will I be assessed?</p>	<p>Pupils are assessed in 3 ways.</p> <ul style="list-style-type: none"> • Constant lesson by lesson assessment. • Six mini assessments on each of the areas of study highlighted above. • One large summative assessment covering all of the key knowledge from the spring term, and recalling previous knowledge from key stage 3 and the autumn term.
<p>Next Steps</p>	<p>Pupils will move on to looking at the following topics in the summer term: Delving into Data; Number and Expression. This will introduce pupils to new units of data handling, number and algebra, but also build upon the topics in the autumn and spring terms of year 10 and the learning from key stage 3. The concepts from this term will be built upon further in year 11 half term 3 - Geometrical Reasoning; and year 11 half term 4 - Listing and describing.</p>
<p>Opportunities for Independent Learning</p>	<p>Sparx Maths – Compulsory Tasks (1 Hour per week) Sparx Maths – XP Boost and Target Homework Activities. BBC Bitesize Maths Genie ExamQ</p>
<p>Personal Development and CEIAG</p>	<p>The skills gained from working with angles can be used by Architects and Engineers. Areas of circles could be used by architects and carpenters. Vectors could be used by careers such as Engineering and Meteorologists. Ratios, Fractions and Percentages are used in Banking and Finance and Chemical Industry. Probability could be used by Engineers, Biologists and Actuaries.</p>
<p>Enrichment Opportunities (Cultural Capital)</p>	<p>Using bearings in everyday life, eg sailing a boat or orienteering. Using percentages in everyday life, eg interest and mortgage rates Using probability in everyday life, eg working your chances of winning the lottery</p>



Year 10 – Summer Term

<p>Prior Learning</p>	<p>All of the previous topics build upon prior learning done in autumn and spring term of year 10 and key stage 3. To be able to understand the new learning on <i>delving into data</i> pupils will have covered the basic skills of collecting and presenting data in year 8. They will have previously studied several of the number topics in years 7, 8 & 9. These skills will be developed further in the <i>number</i> topics in the summer term of year 10. The algebraic skills of <i>expressions</i> build on the work in year 9.</p>
<p>What will I learn?</p>	<p>Pupils will begin the term learning all about <i>delving into data</i>, which comprises of <u>collecting, representing and interpreting data</u>. The summer term will continue by looking at <i>number</i>, with pupils studying the topic of <u>non-calculator methods</u>, before moving on to <u>types of numbers and sequences</u>, and finishing with <u>indices and roots</u>. The summer term finishes with <i>expressions</i> which features <u>manipulating expressions</u>. Each of the topic areas are broken down into small steps of key skills and knowledge for pupils to master. Topics from the first half of the autumn and spring terms and key stage 3 will be interleaved during the retrieval practice in this term.</p>
<p>How will I be assessed?</p>	<p>Pupils are assessed in 3 ways.</p> <ul style="list-style-type: none"> • Constant lesson by lesson assessment. • Five mini assessments on each of the areas of study highlighted above. • One large summative assessment covering all of the key knowledge from the summer term, and recalling previous knowledge from key stage 3 and the autumn and spring terms.
<p>Next Steps</p>	<p>Pupils will move on to looking at the following topics in the autumn term of year 11: Graphs; and Algebra. This will introduce pupils to new units of algebra, but also build upon the topics in year 10 and the learning from key stage 3. The concepts from this term will be built upon further in year 11 half term 4 - Listing and Describing, and will also be revised during the spring term of year 11.</p>
<p>Opportunities for Independent Learning</p>	<p>Sparx Maths – Compulsory Tasks (1 Hour per week) Sparx Maths – XP Boost and Target Homework Activities. BBC Bitesize Maths Genie ExamQ</p>
<p>Personal Development and CEIAG</p>	<p>The skills gained from delving into data can be used by many industries, and specifically data analysts, data engineers. Numeracy is an essential life skill, understanding number is an integral part of everyday life both at work and at home. Sequences could be used by computer and information systems managers. Indices could be used in Computer Games Physicists and Accountants. People who use expression could include by Architects and Game Developers.</p>
<p>Enrichment Opportunities (Cultural Capital)</p>	<p>Using data in everyday life, eg reading from graphs online. Using non-calculator methods in everyday life, eg estimating the costs of a monthly budget Using indices in everyday life, eg compound interest</p>