

# Curriculum Knowledge Map – Y8 Science



Year 8	Autumn 1: Organisms	Autumn 2: Acids and Alkalis	Spring 1: Waves, light and sound	Spring 2: Rocks, climate and Universe	Summer 1: Genes and Evolution	Summer 2: Motion & Forces (speed and energy transfers)
<b>Declarative</b> <i>What should they know?</i>	<ul style="list-style-type: none"> <li>Organisms</li> <li>Diet.</li> <li>Food groups Food tests</li> <li>Diabetes.</li> <li>Digestive system.</li> <li>Modelling the journey of food.</li> <li>Enzyme digestion</li> <li>Respiratory system</li> <li>Gas exchange</li> <li>Impact of exercise</li> <li><i>Drugs (recreational and drugs in sport).</i></li> </ul>	<ul style="list-style-type: none"> <li>Acids and Alkali</li> <li>chemical and physical reactions</li> <li>Acids and Alkalis indicators and pH neutralisation</li> <li>strong and weak acid,</li> <li>Concentration</li> <li>Metals and non-metals</li> <li>Metals and oxygen, Metals and water</li> <li>metals and acids making salts</li> <li>displacement reactions</li> <li>reactivity series - fruit</li> <li>batteries</li> </ul>	<ul style="list-style-type: none"> <li>Energy transfer</li> <li>Waves</li> <li>Wave equations</li> <li>Transverse and longitudinal waves</li> <li>Reflection</li> <li>Refraction</li> <li>Dispersion</li> <li>Sound</li> <li>Transfer of sound through matter</li> <li>Structure of the Ear</li> </ul>	<ul style="list-style-type: none"> <li>Rocks climate and the</li> <li>Universe</li> <li>Global warming</li> <li>The rock cycle (types of rock)</li> <li>The Earth's structure</li> <li>Composition of the atmosphere</li> <li>Days and seasons</li> <li>Space (planets, stars and galaxies)</li> <li>Gravity on Earth</li> <li>Changing Moon</li> </ul>	<ul style="list-style-type: none"> <li>Genes and Evolution</li> <li>Variation</li> <li>The structure of DNA</li> <li>Genes, chromosomes and the nucleus</li> <li>Genetic modification</li> <li>Selective breeding</li> <li>Natural selection</li> <li>Evolution</li> <li>Extinction</li> <li>Wildlife conservation</li> </ul>	<ul style="list-style-type: none"> <li>Motion and Forces</li> <li>Resultant force</li> <li>Friction</li> <li>Gravity</li> <li>Air resistance</li> <li>Hooke's Law</li> <li>Calculating speed</li> <li>Distance time graphs</li> <li>Speed and velocity</li> <li>Acceleration</li> <li>Pressure moments</li> </ul>

# Curriculum Knowledge Map – Y8 Science



<b>Procedural</b> <i>What should they be able to do?</i>	Students will: <ul style="list-style-type: none"> <li>learn to write persuasive articles.</li> <li>learn how to evaluate models and carry out dissections</li> <li>carry out/write up scientific investigations:</li> <li>investigate food groups and food tests</li> <li>investigate the pH of substances</li> <li>carry out filtration and evaporation</li> <li>learn the importance of sample size and consider factors that might affect a scientific study. (e.g. age/gender etc.)</li> </ul>	Students will: <ul style="list-style-type: none"> <li>carry out/write up scientific investigations:</li> <li>Students will investigate the pH of different solutions and use indicators.</li> <li>investigate e reactivity of different metals and make predictions using fruit batteries for displacement.</li> <li>learn how to make salt crystals.</li> </ul>	Students will: <ul style="list-style-type: none"> <li>carry out/write up scientific investigations:</li> <li>investigate waves in solids and liquids.</li> <li>investigate ray diagrams</li> <li>(Reflection and refraction, dispersion).</li> <li>investigate the speed of sound in air.</li> </ul>	Students will: <ul style="list-style-type: none"> <li>carry out/write up scientific investigations:</li> <li>Analysis of data from the department of energy relating to global warming.</li> <li>Interpret graphs showing climate change data.</li> <li>Practical skills- analysis of rock samples, and identification using data.</li> <li>Use of prefixes- kilo, mega, giga.</li> </ul>	Students will: <ul style="list-style-type: none"> <li>develop oracy and presentation skills.</li> <li>learn how to write evaluations and comparisons effectively.</li> <li>build DNA models and evaluate the use of models in science.</li> <li>write about and discuss the ethics of selective breeding in class.</li> </ul>	Students will: <ul style="list-style-type: none"> <li>learn how to use and apply key terminology and data such as: <ul style="list-style-type: none"> <li>Repeats, Reliability</li> <li>Reproducibility Mean</li> <li>Error, Accuracy</li> </ul> </li> <li>carry out/write up scientific investigations:</li> <li>Students will investigate speed</li> <li>investigate the extension of a spring</li> <li>investigate friction, air resistance and weight and make a Newton meter.</li> </ul>
<b>Disciplinary Literacy</b> <i>(Tier 3 Vocab)</i>	SEEC: - <ul style="list-style-type: none"> <li>Respiratory</li> <li>Trachea</li> <li>Bronchus</li> <li>Alveolus</li> <li>Carbohydrate</li> <li>Lipid</li> <li>Protein</li> <li>Digestive</li> <li>Villi</li> <li>Enzyme</li> </ul>	SEEC: - <ul style="list-style-type: none"> <li>Acid</li> <li>Alkali</li> <li>Concentrated</li> <li>Universal</li> <li>Indicator</li> <li>Neutralise</li> <li>Base</li> <li>Salt</li> <li>Reactant</li> <li>Product</li> <li>Reactivity</li> </ul>	SEEC: - <ul style="list-style-type: none"> <li>Longitudinal</li> <li>Transverse</li> <li>Oscillation</li> <li>Amplitude</li> <li>Frequency</li> <li>Wavelength</li> <li>Crest</li> <li>Trough</li> <li>Pitch</li> <li>Hertz</li> </ul>	SEEC: - <ul style="list-style-type: none"> <li>Crust</li> <li>Mantle</li> <li>Core</li> <li>Sedimentary</li> <li>Igneous</li> <li>metamorphic</li> <li>solar system</li> <li>galaxy</li> <li>universe</li> </ul>	SEEC: - <ul style="list-style-type: none"> <li>Variation</li> <li>Species</li> <li>Inherited</li> <li>Evolution</li> <li>Natural</li> <li>Selection</li> <li>Mutation</li> <li>Chromosome</li> <li>Allele</li> <li>Dominant</li> <li>Recessive</li> </ul>	SEEC: - <ul style="list-style-type: none"> <li>Gravity</li> <li>Resultant</li> <li>Balanced</li> <li>Equilibrium</li> <li>Unbalanced</li> <li>Acceleration</li> <li>Mass</li> <li>gravitational field strength</li> <li>pressure</li> <li>pivot</li> </ul>
<b>Assessment</b>	Mid-Point Assessments (MPA) and teacher assessed questions (TAQ)  MPA 1 Breathing  MPA 2 Digestion  MPA's Focus on low stakes testing using exam questions from KS 3 assessments.	Mid-Point Assessments (MPA) and teacher assessed questions (TAQ)  MPA 1 Acids  MPA 2 Metals  MPA's Focus on low stakes testing using exam questions from KS 3 assessments.	Mid-Point Assessments (MPA) and teacher assessed questions (TAQ)  MPA 1 Waves  MPA 2 Light and sound  MPA's Focus on low stakes testing using exam questions from KS 3 assessments.	Mid-Point Assessments (MPA) and teacher assessed questions (TAQ)  MPA 1 Rocks and weathering  MPA 2 Space  MPA's Focus on low stakes testing using exam questions from KS 3 assessments.	Mid-Point Assessments (MPA) and teacher assessed questions (TAQ)  MPA 1 Genes  MPA 2 Evolution  MPA's Focus on low stakes testing using exam questions from KS 3 assessments.	Mid-Point Assessments (MPA) and teacher assessed questions (TAQ)  MPA 1 Forces 1  MPA 2 Forces 2  MPA's Focus on low stakes testing using exam questions from KS 3 assessments.

# Curriculum Knowledge Map – Y8 Science



	TAQ 6 mark questions in preparation for GCSE style long answer / QWC questions	TAQ 6 mark questions in preparation for GCSE style long answer / QWC questions	TAQ 6 mark questions in preparation for GCSE style long answer / QWC questions  Progress Test based on units taught so far in Year 8 <ul style="list-style-type: none"> <li>Plants</li> <li>Particles and Separation</li> <li>Organisms</li> <li>Acids and alkalis</li> </ul>	TAQ 6 mark questions in preparation for GCSE style long answer / QWC questions	TAQ 6 mark questions in preparation for GCSE style long answer / QWC questions	TAQ 6 mark questions in preparation for GCSE style long answer / QWC questions  Progress Test based on units taught so far in Year 8 <ul style="list-style-type: none"> <li>Organisms</li> <li>Acids and alkalis</li> <li>Waves light and sound</li> <li>Rocks, climate, universe</li> </ul>
<b>Home Learning</b>	<p>Creative homework based on organisms' topics.</p> <p>Comprehension exercise on famous people – Marie Maynard Daly</p> <p>Four educake quizzes of between 10 and 20 marks on organisms.</p>	<p>Creative homework based on Acids and alkalis topic.</p> <p>Comprehension exercise on famous people – George Washington</p> <p>Four educake quizzes of between 10 and 20 marks on Acids and Alkalis</p>	<p>Creative homework based on Waves, light and sound</p> <p>Comprehension exercise on famous people: Sir Charles Kao</p> <p>Four educake quizzes of between 10 and 20 marks on Waves, light and sound.</p> <p>Revision for the January progress test <ul style="list-style-type: none"> <li>Plants and Organisms</li> <li>Particles and Separation</li> <li>Acids and alkalis</li> </ul> </p>	<p>Creative homework based on Rocks, climate, universe</p> <p>Comprehension exercise on famous people: Neil deGrasse Tyson</p> <p>Four educake quizzes of between 10 and 20 marks on Rocks, climate and the universe</p>	<p>Creative homework based on genes and evolution</p> <p>Comprehension exercise on famous people: Rosalind Franklin</p> <p>Four educake quizzes of between 10 and 20 marks on Genes and evolution</p>	<p>Creative homework based on the Forces topic.</p> <p>Comprehension exercise on famous people: Sally Ride</p> <p>Four educake quizzes of between 10 and 20 marks on Forces</p> <p>Revision for the summer progress test <ul style="list-style-type: none"> <li>Organisms</li> <li>Acids and alkalis</li> <li>Waves light and sound</li> <li>Rocks climate, universe</li> </ul> </p>