



### Year 7: Topics Per Year

Transition Unit

Organisms

Human Biology

Electricity

Energy and Space

Matter

Chemical Reactions

### Year 7 Overview

In Year 7, pupils will continue to build on the scientific knowledge acquired at KS2. Pupils will have the opportunity to recall content learnt and deepen their understanding of a breadth of topics across Biology, Chemistry and Physics. Experiments incorporated in to each topic will give pupils the opportunity to observe scientific theories in practice and enable them to start developing their own hypotheses. Pupils will be encouraged to draw conclusions from experimental data and begin thinking about limitations or further developments that are needed. Links to science in real life will help pupils to secure their understanding. Pupils will be assessed once formally on a half termly basis to accurately identify areas of strength and development in each individual.

The Year 7 curriculum is taught on a rotation basis and all the topics covered are shown below. Classes will be taught topics on a rotation basis throughout the year, meaning that content may be taught at different times depending on the group pupils are in. The topics taught in Year 7 build a strong understanding of foundation content that is then built on further in Year 8.

Topic	What is covered?
<b>TRANSITION</b>	<p>Introduction to Science</p> <ol style="list-style-type: none"><li>1. What is a scientist?</li><li>2. Hazards &amp; Safety</li><li>3. Using Lab Equipment safely</li><li>4. Using a Bunsen Burner</li><li>5. Chromatography</li></ol> <p>Planning an Investigation (Toilet Paper strength, Rubber band stretching experiment, Making flares or Marshmallows)</p> <ol style="list-style-type: none"><li>6. Planning variables</li><li>7. Making observations</li><li>8. Recording &amp; displaying data</li></ol> <p>Analysing and evaluating data</p>
<b>ORGANISMS</b>	<ol style="list-style-type: none"><li>1. Microscopes</li><li>2. Animal Cells</li><li>3. Plant Cells</li><li>4. Specialised Cells</li></ol>



	<ol style="list-style-type: none"><li>5. Reproductive organs</li><li>6. Fertilisation</li><li>7. Pregnancy and birth</li><li>8. Growing up and puberty</li><li>9. Plant reproductive system</li><li>10. Pollination</li><li>9. Pollen and seed production</li></ol>
<b>HUMAN BIOLOGY</b>	<ol style="list-style-type: none"><li>1. The human skeleton</li><li>2. Joints and muscles</li><li>3. Organ system</li><li>4. Respiratory system</li><li>5. Gas exchange</li><li>6. Breathing</li><li>7. Factors affecting the respiratory system (smoking etc.)</li><li>8. Food groups</li><li>9. Digestive system</li><li>10. Energy in food</li><li>11. Water</li></ol>
<b>ELECTRICITY</b>	<ol style="list-style-type: none"><li>1. Static Electricity</li><li>2. Building circuits and circuit symbols</li><li>3. Conductors</li><li>4. Measuring current - electrical model</li><li>5. Potential Difference</li><li>6. Resistance - length of wire experiment</li><li>7. Resistance length of wire</li><li>8. Magnetic materials</li><li>9. Magnetic fields</li><li>10. Earth's Magnetic field</li><li>11. Electromagnetism incl. investigation</li><li>11. Uses of electromagnets</li></ol>
<b>ENERGY AND SPACE</b>	<ol style="list-style-type: none"><li>1. Energy Stores</li><li>2. Energy Transfers</li><li>3. Fuels</li><li>4. Fossil Fuels</li><li>5. Renewable Energy</li><li>6. Moja Island</li><li>7. Cost of Energy</li><li>8. Energy in Food</li><li>9. Thermal Energy Transfer - conduction</li><li>10. Thermal Energy Transfer 2 - convection and radiation</li><li>11. Day and Night</li><li>12. Seasons</li></ol>



## Key Stage 3: Curriculum Map

	<ul style="list-style-type: none"><li>13. The moon</li><li>12. Our Solar System</li></ul>
<b>MATTER</b>	<ul style="list-style-type: none"><li>1. Solids, liquids and gases</li><li>2. Properties of SLG</li><li>3. Mystery substance</li><li>4. Changes of state</li><li>5. Change of state – particle theory</li><li>6. Atoms, elements and compounds</li><li>7. Mixtures and filtration</li><li>8. Mixtures and distillation</li><li>9. Diffusion</li><li>10. Gas pressure</li><li>11. Dissolving</li><li>14. Analyse and interpret solubility curves</li></ul>
<b>CHEMICAL REACTIONS</b>	<ul style="list-style-type: none"><li>1. Acids</li><li>2. Making an indicator</li><li>3. Alkali and neutral</li><li>4. Neutralisation Practical</li><li>5. Uses of acids and alkalis</li><li>6. Metals and non-metals</li><li>7. Chemical reactions</li><li>8. Metals with water</li><li>9. Reactivity of metals</li><li>10. Displacement reactions</li><li>11. Oxidation</li><li>12. Oxides</li></ul>
<b>End of Unit Assessments for all topics</b>	All topics have a revision lesson, an end of topic assessment lesson and a review lesson.



### Year 8: Topics Per Year

Chemical Reactions   Electromagnetism   Waves   Organisms   Energy   Earth   Forces   Genes

### Year 8 Overview

The topics taught in Year 8 build on the strong foundation in Year 7 and provide a comprehensive scaffold to the GCSE content which begins in Year 9. Pupils will consistently be encouraged to recall knowledge developed in Year 7 and apply this to new concepts being introduced. Topics across Biology, Chemistry and Physics will be covered with opportunities for experimental practice incorporated into each half term. Pupils will delve deeper into the discovery of fundamental concepts and be able to predict future changes or discoveries that may occur. Pupils will begin to combine their mathematical and scientific skills to represent and draw conclusions from data they have produced. All pupils will be assessed formally once every half term to assess the progress that has been made on an individual basis.

The Year 8 curriculum is taught on a rotation basis and all topics covered are shown below. Classes will be taught topics on a rotation basis throughout the year, meaning that content may be taught at different times depending on the group pupils are in.

Topic	What is covered?
<b>CHEMICAL REACTIONS</b>	<ol style="list-style-type: none"><li>1. Atoms, elements and compounds</li><li>2. Symbol equations</li><li>3. Atomic structure</li><li>4. Periodic table</li><li>5. Group 1</li><li>6. Group 7</li><li>7. Noble gases</li><li>8. Metals and non-metals</li><li>9. Chemical reactions</li><li>10. Conservation of mass</li><li>11. Thermal decomposition</li><li>12. Catalysts</li></ol>
<b>ELECTROMAGNETISM</b>	<ol style="list-style-type: none"><li>1. Magnetic materials</li><li>2. Magnetic fields</li><li>3. Earth's magnetic field</li></ol>



	<ol style="list-style-type: none"> <li>4. Electromagnets</li> <li>5. Uses of electromagnets</li> <li>6. Electric motors</li> </ol>
<b>WAVES</b>	<ol style="list-style-type: none"> <li>1. Wave Properties</li> <li>2. Reflection</li> <li>3. Speed of sound</li> <li>4. Travelling sound</li> <li>5. Auditory Range</li> <li>6. The ear</li> <li>7. Superposition</li> </ol>
<b>ORGANISMS</b>	<ol style="list-style-type: none"> <li>1. Introduction to the Respiratory System</li> <li>2. Gas Exchange</li> <li>3. Breathing</li> <li>4. Factors Affecting the Respiratory System</li> <li>5. Health</li> <li>6. Food Groups and a Balanced Diet</li> <li>7. Digestive System</li> <li>8. Energy in Food</li> <li>9. Orange Juice Titration (2 lessons)</li> </ol>
<b>ENERGY</b>	<ol style="list-style-type: none"> <li>1. Work Done</li> <li>2. Levers and Pulleys</li> <li>3. Levers continued</li> <li>4. How do Heaters Work?</li> <li>5. Thermal Energy Transfer I</li> <li>6. Thermal Energy Transfer II</li> <li>7. Insulators I</li> <li>8. Insulators II</li> </ol>
<b>EARTH</b>	<ol style="list-style-type: none"> <li>1. Earth's composition and atmosphere</li> <li>2. Rock cycle</li> <li>3. Displacement of metals</li> <li>4. Extraction of metals</li> <li>5. Climate change and debate</li> <li>6. Cycles of life</li> <li>7. Recycling</li> <li>8. Polymers</li> <li>9. Ceramics</li> </ol>
<b>FORCES</b>	<ol style="list-style-type: none"> <li>1. Naming Forces</li> <li>2. Balanced and Unbalanced Forces</li> <li>3. Drag</li> <li>4. Stretching Springs</li> <li>5. Hydraulics</li> </ol>



# ARNOLD LODGE

4 - 18 yrs Co-educational Independent Day School

## Key Stage 3: Curriculum Map

<b>GENES</b>	<ol style="list-style-type: none"><li>1. Genes, DNA and Chromosomes</li><li>2. Inheritance</li><li>3. Variation in Plants</li><li>4. Variation in Animals</li><li>5. Building a Habitat</li><li>6. Evolution and Natural Selection</li><li>7. Extinction</li></ol>
<b>End of Unit Assessments for all topics</b>	All topics have a revision lesson, an end of topic assessment lesson and a review lesson.