

KAA Curriculum Overview		Science	Year 7	EOY Exam	Sequencing and Progression	
<b>Rationale</b> <i>Give an overview of what students are studying this year and why. Link directly to your overall curriculum intent.</i> Students will be studying the fundamental concepts required for GCSE in all three specialisms across science. In physics, students will study the different types of energy and energy resources. In biology, students will study cells, movement and ecology. In chemistry, students will study the elements and atoms and separating techniques, as well as an introduction into different types of reaction. The curriculum will give the students both substantive and disciplinary knowledge that they need to understand and explain phenomena that they experience in their everyday lives. The students will know more and be able to explain more over time. They will also be encouraged to think for themselves and to be curious and analytical as they look at experimental data.				<i>What content and skills will be assessed in the EOY exam?</i> All content covered this year. Skills: - Graph drawing & analysis - Maths calculations including rearranging formula	<i>How does this year build on what they've learnt last year?</i>	<i>How will it benefit them as they move forward next year?</i> Understanding of basic fundamental concepts in biology, chemistry and physics. These topics will consistently be interleaved into the curriculum later down the school so aid knowledge retention and promote pupil progress.
<b>Term</b>	<b>Autumn 1</b>	<b>Autumn 2</b>	<b>Spring 1</b>	<b>Spring 2</b>	<b>Sum 1</b>	<b>Sum 2</b>
<a href="#">Link to MTP Overview</a>	<a href="#">Aut1 MTP Y7</a>					
<b>Topic studied &amp; Fertile Question</b>	<b>PHYSICS:</b> Energy & Particle Model	<b>Biology:</b> Movement & Cells	<b>Chemistry:</b> Elements, Atoms and Separating Techniques	<b>Physics:</b> Forces	<b>Chemistry</b> Reactions	Revision  <b>Biology:</b> <b>Respiration &amp; Interdependence</b>
<b>Adjustments following last assessments / evaluation.</b>	<ul style="list-style-type: none"> <li>- Move this topic from spr1 to aut1.</li> <li>- All topics in bio/chem link to energy</li> <li>- Students may have knowledge of S,L,G from KS2 &amp; therefore links to prior understanding</li> <li>- Skills can be introduced early on. FIFA method for equations, HSW graph drawing in heating curves</li> </ul>	<ul style="list-style-type: none"> <li>- Remove skeletal &amp; muscular systems (taught in PE)</li> <li>- Add structure of leaf and photosynthesis as a detailed example for the previous 11 lessons</li> <li>- Teaching photosynthesis at a different time to respiration will hopefully make it easier to grasp</li> </ul>	<ul style="list-style-type: none"> <li>- Separation techniques moved from Y8 to Y7</li> <li>- Once understanding of element, mixture, compound students can relate this to separation techniques.</li> <li>- Bring basic topics of atomic structure, notation and electron configuration to KS3 as forms a large part of both chem and phys KS4</li> </ul>	<ul style="list-style-type: none"> <li>- Increase lesson time for speed and distance-time graphs to embed skills and improve fluency</li> <li>- Standalone lesson on units and conversions before starting use of equations</li> </ul>	<ul style="list-style-type: none"> <li>- No change</li> </ul>	<ul style="list-style-type: none"> <li>- Teach interdependence here as it is a short, standalone topic in biology.</li> <li>- If time, students could be taken to park to see this in action</li> </ul>
<b>Key knowledge and skills students need to have gained by the end of the unit</b>	<b>Knowledge</b> -Types of energy store and transfer -The difference between stores and transfers -Objects can have different efficiency ratings -How to calculate efficiency -Renewable and non-renewable energy resources, including the advantages and disadvantages of both -The particle model and 3 states of matter -How energy is required to change states of matter	<b>Knowledge</b> -The structure of plant, animal and prokaryotic cells -The ways plant and animal cells can be specialised to carry out certain functions -Organisational hierarchy from cell to organ system -How a microscope works -Diffusion as a method of particle movement and the factors that can affect its' speed -The structure of a plant organ, a leaf and how it is adapted for its' function	<b>Knowledge</b> -The definition of, and relationship between, elements, atoms, compounds and mixtures -Solutes can be dissolved in solvents to make solutions -Methods of separating mixtures to include filtration, evaporation, distillation and chromatography -Understanding of the periodic table and the information it provides -The structure of an atom to include a proton, neutron and electron	<b>Knowledge</b> -Upthrust, thrust, drag, friction, air resistance, magnetism and electrostatic as forces -Calculate resultant forces acting on an object -Label force diagrams -Know about pressure and air pressure, including how to calculate it -Hooke's law theory and investigation -Calculating speed, distance and time including rearranging equations	<b>Knowledge</b> -Physical and chemical reactions -Oxidation, thermal decomposition and combustion as examples of chemical reactions -The difference between exo- and endo-thermic reactions, including examples of both -Acids, alkalis and how to test for them -Reactions of metals with oxygen, water and acids -Reactions of metal oxides and acids	<b>Knowledge</b> -The importance of respiration in all living organisms -Compare aerobic and anaerobic respirations -Anaerobic respiration in yeast to produce useful products in the fermentation process -Organisms link together in food chains and food webs -Interaction of living organisms with their non-living environment -Disruption of food chains and food webs

