Curriculum Map

Subject: Science -

Year group: Year 9

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Content *Declarative Knowledge – 'Know What'*	**Energy:** Evaluate the role of non-renewable and renewable energy in today's world. Ways to reduce energy loss. Evaluating different energy resources to find the most suitable resource.	**Atoms:** The structure of an atom. How the structure of an atom explains its position in the periodic table. How the periodic table has changed over time. The impact Mendeleev's work. **Cells:** Explain how the structure of a cell is related to the function. Describe the importance of diffusion in the size of a cell. How the size of a cell is important for survival. The role of the cell membrane in supporting the cell.	**Forces:** Explain the effect of forces on an object. How forces affect speed. How parachutes work. Explain why things float. The reasons why planes can fly.	**Reactions:** How energy is released or absorbed in a chemical reaction. How we can use the energy from chemical reactions usefully. Why reactions will eventually stop.	**GCSE content**: Biology 1 **GCSE content**: Chemistry 1	**GCSE content**: Physics content **Preparation for end of year assessment.**
Skills *Procedural Knowledge – 'Know How'*	Describing the energy transfers that take place between energy stores Using data to choose the most suitable energy resource. Reading and interpreting data from different pieces of equipment Plot graphs independently and use the graph to make predictions. Use the periodic table to identify elements and trends based on data given. Understand the importance if peer review in the scientific community Use practical work to solve problems such as the size of a cell. Use diagrams to explain scientific theory. Take accurate measurements using scientific equipment					

Curriculum Map

Key Questions	**Energy -** Why are non-renewable energy resources difficult to replace? Which energy resource is the most appropriate for a geographical area? Why do hydrocarbons contain so much energy? Why are biofuels considered to be carbon neutral?	**Atoms –** How does the structure of an atom relate to its position in the periodic table? Why was Mendeleev's periodic table accepted? How do atoms combine to form compounds? **Cells –** Why do some cells have more of one organelle than another? Can cells be any size? Why is there a need for a transport system in multicellular organisms? Why is the cell membrane important?	**Forces –** Why do object float and sink? What effects do forces have an object? How can a force cause an object to speed up or slow down? How do planes stay in the air?	**Reactions -** What happens when atoms combine? How can you prove that atoms are not lost or made in a chemical reaction? What can the energy from chemical reactions be used for? Why is knowing the rate of reaction important for industry?		
Assessment	Diagnostic Assessment	Diagnostic Assessment Summative assessment - exam question based assessment	Diagnostic Assessment	Diagnostic Assessment Summative assessment - exam question based assessment	Diagnostic Assessment	Diagnostic Assessment Summative assessment - exam question based assessment
Literacy / Numeracy / SMSC / Character	Literacy – Producing a lab report to evaluate the most efficient fuel supply. Numeracy – Calculating the efficiency and power in different energy supplies SMSC – the impact of energy sources on the	Literacy – Describing the work of Mendeleev and why it became the accepted model. Numeracy – Calculating the number of atoms in different types of compounds, identifying the number of subatomic particles from data presented	Literacy – explaining how the design of a plane or a boat allows it to stay afloat or in the air. Numeracy – calculating the resultant force on an object and deciding its motion.	Literacy – Plan an investigation that demonstrates the importance of knowing the rate of reaction. Numeracy – Calculate the temperature change in a reaction. SMSC – How chemical reactions can be used to treat injuries.	.	

	environment and how we can reduce human impact on the environment.	on the periodic table. Calculating SA:V ratio. SMSC – evaluate the use and distribution of illegal and legal drugs.				