Year 7 Science Curriculum Map

Overview	This is the first year of secondary school science that students will study. We hope to teach them the fundamental skills and knowledge that they need to be successful in their Science education whilst also inspiring them about the wonder of our world and the organisms that live within it. Content is under 10 big idea headings: Forces, Electromagnetism, Energy, Waves, Matter, Reactions, Earth, Organisms, Ecosystems and Genes. Each idea contains four smaller topics: the building blocks for the big ideas. Mastery of topics means gaining a secure understanding of the big ideas. Understanding means both 'knowing' – having an accurate mental structure of the concepts and skills – and 'applying' – being able to use the knowledge flexibly across different situations. Enquiry processes address the range stipulated by the programme of study and build effective foundations for GCSE.				
Year 7	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	**Enquiry process:** **Matter 1:** 1. Particle model 2. Separating techniques	**Forces 1:** 1. Speed 2. Gravity	**Electromagnets 1:** 1. Potential difference and resistance. 2. Current	**Reactions 1:** 1. Acids and alkalis 2. Metals and non-metals. **Organisms 1:** 1. Movement 2. Cells	**Earth 1:** 1. Earth structure. 2. Universe	**Ecosystems 1:** 1. Interdependence 2. Plant reproduction.
Knowledge	**Enquiry process:** Using investigations to work in a particular way to carry out fair scientific investigations. **Matter:** Relate the features of the particle model to the properties of materials in different states Devise ways to separate mixtures, based on their properties	**Forces:** Investigate factors that affect the size of frictional or drag forces Explain the way in which an astronaut's weight varies on a journey to the moon	**Electromagnets:** Compare the voltage drop across resistors connected in series in a circuit. Compare and explain current flow in different parts of a parallel circuit	**Reactions:** Devise an enquiry to compare how well indigestion remedies work Use experimental results to suggest an order of reactivity of various metals **Organisms:** Explore how the skeletal system and muscular system in a	**Earth:** Model the processes that are responsible for rock formation and link these to the rock features Relate observations of changing day length to an appropriate model of the solar system	**Ecosystem:** Use a model to investigate the impact of changes in a population of one organism on others in the ecosystem Use models to evaluate the features of various types of seed dispersal

				chicken wing work together to cause movement Identify the principal features of a cheek cell and describe their functions		
Skills	**Enquiry process:** Analyse patterns Discuss limitations Draw conclusions Present data **Matter:** Analyse patterns, Discuss limitations, draw conclusions, present data, communicate ideas, construct explanations, collect data, devise questions, test hypothesis, eliminate risks, review theories.	**Forces:** Analyse patterns, Discuss limitations, draw conclusions, present data, communicate ideas, construct explanations, collect data, devise questions, plan variables, test hypothesis.	**Electromagnets:** Draw conclusions, present data, communicate ideas, construct explanations, devise questions, plan variables, test hypothesis.	**Reactions:** Analyse patterns, Discuss limitations, draw conclusions, present data, communicate ideas, construct explanations, critique claims, collect data, devise questions, plan variables, test hypothesis, estimate risks, examine consequences. **Organisms:** Analyse patterns, Discuss limitations, draw conclusions, present data, communicate ideas, construct explanations, critique claims, devise questions, plan variables, test hypothesis, estimate risks, examine consequences.	**Earth:** Analyse patterns, Discuss limitations, draw conclusions, present data, communicate ideas, construct explanations, raw theories. .	**Ecosystem:** Discuss limitations, draw conclusions, present data, communicate ideas, construct explanations, critique claims, collect data, devise questions, plan variables, test hypothesis.