



Year 9 – Overview

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
B1 Cells and Genes Part 2	B2 Cell division	C1 Atomic structure and C2 The Periodic table	P1, 2 & 3 Energy	B3 and B4 Organisation	B8 & B9 Bioenergetics
→ The world of the microscope. → Animal and plant cells. → Eukaryotic and prokaryotic cells. → Specialisation in animal cells. → Specialisation in animal cells. → Diffusion. → Osmosis. → Osmosis in plants. → Active transport. → Exchanging materials. → Natural selection. → Charles Darwin. → Extinction → Preserving biodiversity. → Inherited characteristics. → Damaged DNA. → Mutations. → Alleles. → Predicting characteristics. → Genetic modifications.	→ Cell division: Mitosis → Growth and differentiation. → Stem cells. → Stem cell dilemmas.	→ Atoms. → Chemical equations. → Separating mixtures. → Fractional distillation and chromatography. → History of the atom. → Structure of the atom. → Ion, atoms and isotopes. → Electronic structures. → Development the periodic table. → Electronic structures and the periodic table. → Group 1- The alkali metals → Group 7 -The halogens. → Explaining trends → The transition elements.	→ Changes in energy stores. → Conservation of energy. → Energy and work. → GPE → KE and Ee stores → Energy dissipation. → Energy and efficiency. → Electrical appliances. → Energy and power. → Energy transfer by conduction. → Infrared radiation. → More about IR → Specific heat capacity → Heating and insulating buildings. → Energy demands → Energy from wind and water → Power from the Sun and the Earth → Energy and the environment → Big energy issues.	→ Tissues and organs → The human digestive system. → The chemistry of food. → Catalysts and enzymes. → Factors affecting enzyme action. → How the digestive systems works. → Making digestion efficient. → The blood. → The blood vessels. → The heart. → Breathing and gas exchange. → Tissues and organs in plants. → Transport systems in plants. → Evaporation and transpiration. → Factors affecting transpiration.	→ Photosynthesis → Rates of photosynthesis → How plants use glucose → Making the most of photosynthesis → Aerobic respiration → Response to exercise → Anaerobic respiration → Metabolism & the liver