Great Park Academy Science Curriculum Overview: Year 8

At GPA, year 8 science begins with a combustion-themed investigation, where pupils will revisit and enhance some fundamental scientific skills. These scientific skills are then revisited at appropriate times across the year, within other topics. The biology, chemistry and physics topics have been carefully sequenced across the academic year to support pupil understanding and their long-term memory; learning is a change to long-term memory, so this is a crucial consideration. The year 8 topics carefully and thoughtfully build upon the foundations laid in Year 7 and at KS2.

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
8	1. Working scientifically investigation - Combustion  (a) Safety in science (b) Planning experiments (c) Collecting data (d) Handling data (e) Conclusions (f) Evaluating data 2. Energy 2 (Physics)  Key question of physics - How can energy be used to explain what	3. Health and lifestyle (Biology)  Key questions of biology - How does life survive and thrive? (a) Nutrients (b) Food tests (c) Unhealthy diet (d) Digestive system (e) Bacteria & enzymes in digestion (f) Drugs (g) Alcohol (h) Smoking 4. Biological processes (Biology)	5. The Periodic Table (Chemistry)  Key questions of chemistry - What is everything in the Universe made of?  Key questions of chemistry - How do we make new substances? (a) The history of the Periodic table (b) The modern Periodic table (c) Metals and non-metals (d) The elements in	7. Motion & pressure (Physics)  Key question of physics - How do forces impact objects? (a) Speed (b) Motion graphs (c) Pressure in gases (d) Pressure in liquids (e) Pressure in solids (f) Turning forces (Moments) 8. Metals & other materials (Chemistry) 	9. The Earth (Chemistry)  Key questions of chemistry - How can we take care of our planet while also using it to meet our needs? (a) The Earth and its atmosphere (b) Sedimentary rocks (c) Igneous rocks (d) Metamorphic rocks (e) The rock cycle (f) The carbon cycle (g) The greenhouse effect and global heating (h) Recycling.	11. Inheritance (Biology)  Key questions of biology - What are living things made of?  Key questions of biology - How does life survive and thrive? (a) DNA, genes & chromosomes (b) Inheritance (c) Variation (d) Continuous and discontinuous (e) Natural selection (f) Extinction

	things can do? (a) Fundamentals of energy (b) Energy & temperature (c) Conduction (d) Convection (e) Radiation (f) Work done (g) Power	 Key questions of biology - How does life survive and thrive?  Key questions of biology - How do organisms rely on, interact with, and impact the environment? (a) Photosynthesis (b) Leaves (c) Plant minerals (d) Aerobic respiration (e) Anaerobic respiration	Group 1 (e) The elements in Group 7 (f) The elements in Group 0 6. Separation techniques (Chemistry)  Key questions of chemistry - What is everything in the Universe made of?  Key questions of chemistry - How do we make new substances? (a) Pure substances (b) Mixtures (c) Solutions (d) Solubility (e) Filtration (f) Evaporation and distillation (g) Chromatography	Key questions of chemistry - How do we make new substances?  Key questions of chemistry - How can we take care of our planet while also using it to meet our needs? (a) Metal & oxygen reactions (b) Metal & water reactions (c) Metal & acid reactions (d) The reactivity series (e) Metal displacement reactions (f) Extracting metals (g) Ceramics (h) Polymers (i) Composites	10. Ecosystems & adaptations (Biology)  Key questions of biology - How does life survive and thrive?  Key questions of biology - How do organisms rely on, interact with, and impact the environment? (a) Food chains & webs (b) Disruption to food chains & webs (c) Ecosystems (d) Competition (e) Adapting to change	12. Electricity & magnetism (Physics)  Key question of physics - How can energy be used to explain what things can do?  Key question of physics - How do forces impact objects? (a) Charge (b) Circuit symbols (c) Series and parallel circuits (d) Current (e) Potential difference (f) Resistance (g) Calculating current, voltage and resistance (h) Magnets and magnetic fields (i) Electromagnets (j) Uses of electromagnets