Secondary Curriculum Information

Subject: Sciences Subject Leader: Mr V P Patel (VPT)

Please note that the current cohorts in Year 7 & 8 are studying the new KS3 curriculum whereas Year 9 are completing the old specification as that is what they started. The current Year 7 & 8 students will not go on to follow the Year 9 curriculum below as many areas are similar or the same. These Year 7 & 8 students will move forward with the new curriculum.

YEAR 7 (new scheme)	Theme Title	Key Areas of Knowledge Acquisition	Key Skills and Processes Learned
Term 1 (September – October)	Safety B1. Cells & Tissues C1. Particles	• Building blocks of biology and chemistry	• Using and identifying basic lab equipment • Observing different cells • Identifying cells and specialised cells and linking their function to their adaptation • Identifying that particles are the building blocks to all substances and cells are the building blocks to life • Drawing particles diagrams for the different states of matter
Term 2 (November – December)	P1. Energy transfers B2a. Animal reproduction	• Different forms of energy and how they transfer • How living organisms work together to make new life	• Reinforcing that energy is not created or destroyed but only transferred • Describing the differences between energy that is used and energy that is stored • Understanding the male and female reproductive systems and how they work • Explaining the stages of pregnancy, birth and care after birth including puberty
Term 3 (January – February)	C2. Atoms & Elements P2. Forces and their effects	• The periodic table and structure of an atom • Explaining what changes forces cause an object to have	• Researching the periodic table and the history of the elements and the different scientists that contributed to the periodic table used today • Explaining behaviour of atoms based on the arrangement of the subatomic particles • Predicting what happens to objects given the forces that act on them
Term 4 (March – April)	B2b. Plant reproduction C3. Acids & Alkalis	• Understanding plants as living organisms that reproduce as well as animals • How the acidity or alkalinity of a substance effects its use	• Identifying the main organs involved in plant reproduction and the different ways in which they reproduce • Carrying out practical skills to describe the differences between acids and alkalis
Term 5 (April – May)	P3. Electricity B3. Environment & Adaptation	• Circuits and components of circuits • Identifying a habitat as the environment in which an organism survives and how features of the organism ensure their survival	• Investigating circuits and the different components of a circuit • Researching the different environments that organisms live in and how they are adapted to survive

Term 6 (June – July)	C4. Solutions P4. Energy resources	• Separating substances from each other for example using the terms solvent, solute, solution • Comparing fossil fuels and renewable energy resources	• Investigating different separating techniques for substances. • Explaining the difference between substances that are pure and those that are a mixture of other substances • Explaining difference between renewable and non-renewable energy resources • Researching sources of energy and how electricity is generated

YEAR 8 (new scheme)	Theme Title	Key Areas of Knowledge Acquisition	Key Skills and Processes Learned
Term 1 (September – October)	P6. Motion C7. The Periodic table (Science Progress 2 book)	• Acceleration and streamlining • Spotting patterns and trends in the periodic table	• Investigating factors that affect speed • Using the equation to calculate speed, distance and time • Researching the periodic table and the history of the elements and the different scientists that contributed to the periodic table used today • Explaining behaviour of atoms based on the arrangement of the subatomic particles
Term 2 (November – December)	B4. Variation and classification B5. Photosynthesis	• Variation of living things • Leaf structure, mineral salts and fertilisers and the importance of plants	• Identifying the main organs of a plant and explaining the process within the plant. • Classifying living organisms
Term 3 (January – February)	P5. Magnets and electromagnets C5. Simple chemical reactions	• Magnetic fields and how current can create fields • Observing chemical change, testing gases and writing chemical equations	• Explaining how magnets are made and how electromagnets are controlled • Writing simple chemical equations.
Term 4 (March – April)	B6. Food and digestion C6. Compounds	• Food tests, the digestive system and healthy eating • The difference between a mixture and a compound and how compounds are formed.	• Identifying and describing features of a healthy balanced diet • Explaining the health effects of particular deficiencies • Explaining the journey of food from gums to bums • Identifying compounds and writing formula for given examples • Writing simple word and symbol equations for given reactions
Term 5 (April – May)	B7. Lungs and gas exchange P7. Domestic and static electricity (Science Progress 2)	• The breathing system, gas exchange and the circulatory system • How static electricity is different, and how we pay for main electricity.	• Linking various organ systems together to explain how respiration works • Calculating the cost of energy in the home
Term 6 (June – July)	B8. Respiration C8. Extracting metals (Science Progress 2)	• Aerobic and anaerobic respiration • The reactivity series, extracting carbon and extracting with electricity.	• Investigating metals and using observations to elicit the reactivity series

YEAR 9 (old scheme)	Theme Title	Key Areas of Knowledge Acquisition	Key Skills and Processes Learned
Term 1 (September – October)	Inheritance and selection Reactions of metals and metal compounds	• Describing features caused by inherited and environmental variation • Describing what happens when metals react with water, acid and oxygen. • Describing what happens when metal compounds react with water and acid	• Explaining how genes are inherited and what factors affect variation • Drawing graphs based on data collected for an example of each inherited and environmental variation • Describe how selective breeding works and give advantages and disadvantages of the process • Describing the reactions of metals and their compounds • Writing word and symbol equations for these reactions
Term 2 (November – December)	Energy & Electricity Fit & Healthy	• Defining energy • Linking the lifestyle of an individual to the health benefits or risks they experience	• Describing the different forms of energy • Explain how electrical circuits work and link the type of circuit needed to the situation • Explaining what fitness is and how to calculate individual BMI's • Suggest changes to be made based on calculated BMI's
Term 3 (January – February)	Patterns of reactivity Gravity & Space	• Listing metals in order of their reactivity • Defining Gravity and its impact on the universe	• Investigating metals and using observations to elicit the reactivity series • Researching the effect of gravity on the planets, satellites and the universe • Explain how ideas about the Earth and universe have changed over the centuries
Term 4 (March – April)	Plants & Photosynthesis Environmental chemistry	• Describing where plants get their energy from and how they differ from animals • Explaining how the environment has an impact on organisms for example pesticides used on crops cause disease in other organisms that feed on these crops	• Identifying the main organs of a plant and explaining the process of photosynthesis • Writing the word and symbol equation for photosynthesis • Investigate different soil samples and use the data to explain why the samples show differences • Describe the impact of acid rain on the environment
Term 5 (April – May)	Speeding up Plants for food	• The equation for speed • How plants are used as food for many organisms	• Investigating factors that affect speed • Using the equation to calculate speed, distance and time • Explaining adaptations of plants
Term 6 (June – July)	Using Chemistry Pressure & Moments	• Describing what happens when fuels burn • Defining pressure and moments	• Investigating how fuels burn • Comparing every day and industrial reactions • Investigating how the pressure caused by an object can change • Investigating the turning point on a pivot