Name _____

My Level 3 S1 Learning Intentions

Unit: Matter

What I Need to Do for Level 3	Can I Do It? ☺ ☹
Describe, using particle models and diagrams, the properties of solids, liquids and gases and apply this knowledge to identify and classify unknown substances.	
Apply understanding of models of matter to explain changes of state in terms of energy being gained or lost by a substance.	
Explain how the levels of carbon dioxide in the atmosphere have increased over time, for example, through respiration of organisms, deforestation and increased combustion of fuels.	
Draw on supporting evidence, quotes and sources to demonstrate an association between carbon dioxide in the atmosphere and increasing global temperatures as a result of the greenhouse effect.	
Describe chemical reactions involving the Earth's materials, for example, combustion of fossil fuels, carbonate rocks reacting with acid and the formation and impact of acid rain.	

Unit: Cells

What I Need to Do for Level 3	Can I Do It? ☺ ☹
Explore and explain the structure and function of at least three of the major organ systems, for example, Respiratory, Circulatory, Digestive, Excretory, Reproductive and Skeletal, and relate this to the basic biological processes required to sustain life.	
Use a variety of instruments to monitor and record aspects of health, for example, pulse rate, blood pressure and recovery rate and give examples of other aspects of health that may be monitored, for example, cholesterol and BMI.	
Research one condition that is screened for (for example, bowel cancer, macular degeneration and diabetes) and describe the symptoms of the condition.	
Identify the structures found in plant and animal cells and describe their functions.	
Describe the main similarities and differences between plant and animal cells.	
Research and describe the structure and function of some specialised cells, for example, nerve, root hair, red blood cell, sperm and egg.	

Unit: Heat

What I Need to Do for Level 3	Can I Do It? ☺ ☹
Apply knowledge from practical investigations to explain how heat is transferred by conduction, convection and radiation.	
Establish a link between heat loss in buildings and the temperature difference between the inside and outside of the building.	
Apply understanding of thermal energy efficiency, conductors and insulators to explain how materials can be used in building design to reduce heat loss, for example, in double and triple glazing.	

Unit: Rocks & Solubility

What I Need to Do for Level 3	Can I Do It? ☺ ☹
Investigate and describe the solubility of substances in different solvents, for example, water, acetone and propanone.	
Explain the link between the relative quantity of solute or solvent and changes in the concentration of a solution.	
Apply knowledge of the rock cycle to describe the formation and characteristics of sedimentary, igneous and metamorphic rocks and give at least one example of how each is used.	
Describe the formation and characteristics of loam, sand and clay soil types, providing examples of their uses, for example, in agriculture, building and beauty products.	
Investigate and describe how at least two useful substances can be extracted from natural resources, for example, metal from mineral ores, dyes from plants and oils from plants.	
Select appropriate physical methods to separate mixtures into their components, for example, distillation, filtration and chromatography and justify my choices.	

Unit: Photosynthesis & Biodiversity

What I Need to Do for Level 3	Can I Do It? ☺ ☹
Identify living things using biological keys.	
Collect and analyse increasingly complex data and information, for example, temperature and light intensity, to suggest reasons for the distribution of organisms within different habitats.	
Describe the process of photosynthesis (using the word equation) in terms of reactants (raw materials) and products.	
Apply knowledge gained from practical investigations to explain how green plants make their own food in the form of sugars and store this as starch.	
Investigate and present information on how plants help to sustain life, for example, by providing oxygen, food, habitat, raw materials and medicines.	

Unit: Electricity

What I Need to Do for Level 3	Can I Do It? ☺ ☹
Apply knowledge from practical investigations to describe the similarities and differences between series and parallel circuits and explain the advantages of parallel circuits in an everyday application.	
Investigate and explain how electricity can be produced when different metals are used as electrodes, with an electrolyte between them.	
Investigate and discuss the relationship between a range of factors (for example, the combination of metal electrodes used, the electrolyte used, the electrolyte concentration, the distance between electrodes and surface area of electrodes) and the voltage produced by a simple chemical.	