



Key Stage 4 – Science – Curriculum grid



Science	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Pathway 1 AQA UAS	117118 - The human body -Parts of the body (internal and external) -Body functions -Effects of exercise -Mental health and wellbeing -Healthy foods Investigation: Using senses to taste a range of healthy foods. Exercising and recording breathing rates. 115340 – Human reproduction -Adults and offspring -Human lifecycle -Male / Female reproductive system -How babies are conceived	115343 – Properties of material -Identify a range of materials -Materials objects are made from -Magnetic and non-magnetic -Insulators -Conductivity of materials Investigation: Using magnets explore different materials. Discover which insulators are best at keeping water hot. 114511 – Chemistry in our world -Transfer of energy (heat) -Chemical reactions -Reactions which transfer cold -Yeast reactions -Renewable energy resources Investigation: Inflating balloons with yeast.	115348 – Magnets -Grouping materials -Uses of a magnet -Making a magnet -Making an electromagnet -Using a compass Investigation: Creating an electromagnet to collect paperclips. 114525 - Energy, forces and the structure of matter -Energy outputs -Physical change -Forces on the body -Pushing/ pulling -Magnetic force Investigation: Discovering forces on the human body e.g. spinning on a roundabout, gravity on a seesaw etc.	114507 - Environment, evolution and inheritance -Parts of a plant -Potting a plant -Plant survival -Food chains Investigation: Exploring a range of plants parts by dissecting. Potting a range of plants with the right conditions. 115341 – Animal classification -Animal, plant or fungi -Mammals -Birds -Reptiles -Fish	115349 – Light and the electromagnetic spectrum -Light sources -Transparent and opaque -X –rays -Sun safety -Light spectrum Investigation: Discovering a range of light sources. 115350 – Sound and hearing -Hearing ranges -Ear health -Making sounds -Measuring volume -Pitches Investigation: Discovering a range of auditory ranges. Using the sound meter to record decibels.	115345 – Hazards, acids and alkalis -Symbols and meaning -Household chemicals -Testing chemicals -pH indicator -Neutralisation Investigation: Testing a range if pH levels with litmus paper and an electronic pH reader. 115346 – Reactions -Material burning -Reacting metals with acid. -Rusting. -House fire safety -Treating burns Investigation: Observing a range of metals reacting with acids.

KS4 Pathway 2/3 AQA ELC Single award	Component 1 – The Human body -Cells -Levels of organisation -Respiration -Vaccination and medication -Diseases and viruses -Hormones and menstrual cycle -Fertility -Healthy diet and lifestyle Investigations: -Preparing and observing cells under a microscope in different magnifications. -Preparing a healthy meal given a range of different healthy and unhealthy choices. -Testing a range of biscuits and crisps to observe and record which release the most energy. -Test the presence of carbon dioxide	Component 6 - Electricity, magnetism and waves -Electrical current -Electrical circuits -Domestic electricity -Wave and properties -Electromagnetic waves -Resistance -Magnetic forces Investigations: -Creating series and parallel circuits using: buzzers, motors, bulbs, switches, batteries/cells. -Using ammeter and voltmeters to test current and voltage. -Investigate which materials are good conductors of electricity. -Discover how to wire a plug. -Investigate how much energy is being used by different electrical appliances. -Investigate how changing the frequency or amplitude of a wave changes the shape of the wave.	Component 4 - Chemistry in our world -Fossil fuels -Pollution -pH scale -Acids and metals -Neutralisation -Reactions -The atmosphere -Water Investigations: -Explore how much alkali is needed to neutralise an acid. -Investigate a range of acids and carbonates. -Investigate the pH of a range of substances and chemicals. -Explore underwater plants and collect the gas produced. -Testing a range of water to identify which is the safest for drinking.
KS4 Pathway 2/3 AQA ELC Double award	Component 2- Environment, evolution and inheritance -Food chains and webs -Competition -Evolution and natural selection -Genetic material -Adaption -Environment -Photosynthesis -Carbon cycle Investigations: -Investigate how quickly food goes mouldy in a range of different temperatures. -Investigating the effect of light intensity on the rate of photosynthesis. -Investigate how seeds grow when planted close together or far apart. -Investigate how well plants grow in different concentrations of hydrochloric acid. -Extract the DNA from a kiwi fruit. -Investigating the temperature of compost.	Component 3 - Elements, mixtures and compounds -Pure substances and concentration -Metals and alloys -Electrolysis -Mixtures -States of matter -Atoms and electrons -Structures of carbon -Periodic table -Reactivity series Investigations: -Investigate how different metals react with hydrochloric acid. -Investigate the melting point of different substances. -Investigate how the particle size affects the quickness of filtration. -To explore chromatography. -Test a range of metals to discover the melting points, boiling points and density.	Component 5 - Energy, forces and the structure of matter -Forces -Speed and breaking distance -Weight -Transfer, conservation and stores -Atoms and radiation -Radioactive contamination Investigations: -Investigate the way that devices use regular transfer of energy. -Investigate the factors that affect the rate of cooling down a container of hot water. -Investigate how forces act on objects in the classroom. -Investigate how different surfaces affect the amount of friction acting on a moving block. -Investigate how the speed of a moving trolley changes as it rolls down a slope. -Investigate how talking to someone affects your reaction time.