	Autumn 1: The Human Body
Lesson 1:	LO: To understand that the heart pumps blood around the body. Success criteria: • I can explain that our heart pumps blood around our body. • I can identify that the left atrium and left ventricle carry oxygenated blood which is pumped around the body. • I can identify that the right atrium and right ventricle carry deoxygenated blood which is pumped out to the lungs.
Lesson 2:	LO: To understand that blood vessels transport blood around the body Success criteria: • I can explain that all the cells in our body need oxygen. It is delivered to them by the blood. • I can explain that arteries carry blood that has been oxygenated in the lungs away from the heart to the cells. • I can explain that veins carry deoxygenated blood from the cells back to the heart to be pumped to the lungs for more oxygen.
Lesson 3:	LO: To understand how the heart rate can speed up or slow down, depending on what the body is doing Success criteria: • I know that heart rate indicates how often your heart squeezes to pump blood through your body. • I can explain that when you exercise your cells use more oxygen than usual. That is why exercise makes you breathe harder and makes your heart pump faster. • I can explain that drugs and poor health can affect how well our heart works.
Lesson 4:	LO: To know that there are many things that can be varied and changed in an experiment, we call the things we can change variables Success criteria: • I know that an independent variables can be controlled or manipulated. • I know that a dependent variables will affect the independent variable. • I know that control variables must be held constant
Lesson 5:	LO: To know that there are many things that can be varied and changed in an experiment, we call the things we can change variables. (Investigation lesson) Success criteria: • I know that an independent variables can be controlled or manipulated. • I know that a dependent variables will affect the independent variable. • I know that control variables must be held constant
Lesson 6: Assessment	LO: To understand that the blood circulates throughout the body, gaining oxygen in the lungs and that it is the heart that pumps the blood around Success criteria: • I can label and explain that the heart and blood vessels make up the circulatory system. • I can identify that the heart has four chambers. It pumps blood depleted of oxygen to the lungs, and pumps oxygenated blood around the body. • I can explain how lifestyle choices can impact on our circulatory system including the health of our heart

	Autumn 2: Evolution and Inheritance
Lesson 1:	LO: To know fossils are physical evidence of life from long ago Success criteria: • I know that fossils are the remains of organisms • I can describe that a small percentage of life on earth is preserved as a fossil, most organisms decompose • I know that fossils provide evidence for evolution
Lesson 2:	LO: To know offspring are usually similar to, but not identical to their parents Success criteria: • I know that inheritance is passing on characteristics from a parent to their offspring • I can explain that there are various combinations of characteristics, resulting in variation • I know that evolution is the change in inherited traits
Lesson 3:	LO: To know living things can adapt to suit their environment Success criteria: • I can explain that animals and plants that adapt well to an environment have more chance of surviving • I can explain that adaptation plays an important part in evolution as species change over time
Lesson 4:	LO: To know who Charles Darwin was and what natural selection is Success criteria: • I know that Charles Darwin spent years observing, comparing and analysing many specimens of plants and animals • I can describe how animals and plants that adapt well to an environment have more chance of surviving, this is called natural selection
Lesson 5:	LO: To know who Alfred Wallace was and understand his contribution to the theory of evolution Success criteria: • I know that Alfred Wallace explored the Amazon, collecting species of beetles, butterflies and birds • I know that he explored Malay Archipelago and noticed how certain areas had certain animals • I can identify that he created an imaginary line, known as the Wallace Line
Lesson 6: Assessment	LO: To show my understanding of evolution Success criteria: • To know fossils are physical evidence of life from long ago • To know offspring are usually similar to, but not identical to their parents • To know living things can adapt to suit their environment • To know who Charles Darwin was and what natural selection is • To know who Alfred Wallace was and understand his contribution to the theory of evolution

	Spring 1: Electricity
Lesson 1:	LO: To know that electricity flows in a circuit, Success criteria: • I know that electricity can flow from one place to another, this is called electrical current. • I can describe that we can control electricity by causing it to flow in a circuit. • I can identify that circuits can contain components that turn electrical energy into different energy forms, for example a light bulb.
Lesson 2:	LO: To understand that the brightness of a lamp or the volume of a buzzer depends on the number and voltage of cells used in a circuit. Success criteria: • I know that voltage is the pressure from a battery that pushes electricity around a circuit. • I can explain that buzzers and lamps need electricity to make them work. • I know that the voltage of a battery, or the number of batteries can change the brightness/volume of lamps and buzzers.
Lesson 3:	LO: To understand that switches control the flow of electricity in a circuit. Success criteria: • I know that switch creates a gap in a circuit • I can explain that making a gap in a circuit prevents electricity from flowing • I know that electricity costs money, so switching off a circuit saves money
Lesson 4:	LO: To know that circuits can be used to make electrical toys. Success criteria: • I know that when we design something, we think about what we will need and how it will work. • I know that when we are making something, we may face problems that need to be solved. • I can identify which components to use for a particular purpose, and how to connect them.
Lesson 5:	LO: To know that circuits can be used to make electrical toys. (Investigation lesson) Success criteria: • I know that when we design something, we think about what we will need and how it will work. • I know that when we are making something, we may face problems that need to be solved. • To know which components to use for a particular purpose, and how to connect them.
Lesson 6: Assessment	LO: To independently design and make a circuit for a purpose Success criteria: • I can explain that electricity can flow from one place to another, this is called electrical current. • I know that we can control electricity by causing it to flow in a circuit. • I know that making a gap in a circuit prevents electricity from flowing

	Spring 2: Light
Lesson 1:	LO: To know that light is a source of illumination that allows us to see. Success criteria: • I know that light illuminates allowing us to see. • I can describe that some light sources are natural and some are artificial. • I can describe light travels in straight lines.
Lesson 2:	LO: To know that light enters our eyes, allowing us to see. Success criteria: • I can identify the cornea is a transparent covering on the outside of your eye. • I can identify the iris is the coloured part of the eye which helps the pupil to 'open and close'. • I know that inside the retina, the light rays become electrical signals which travel along the optic nerve to the brain.
Lesson 3:	LO: To test the hypothesis that shadows are always the same shape as the object that made them. Success criteria: • I know that light travels in straight lines. • I know that shadows are always the same shape as the object that made them. • I can explain the size of shadows can change, but the outline shape is always the same as the original object.
Lesson 4:	LO: To understand what light is made of and how a prism works. Success criteria: • I can describe that scientists call the light that comes from the sun 'white light' • I know that the light from the sun is made up of all the colours of the rainbow • I can explain that when light travels through a prism, the glass slows it down, and changes its course. Different colours are slowed down different amounts.
Lesson 5:	LO: To know that a periscope uses mirrors to reflect an image of something out of sight Success criteria: • I know that periscope helps you to see something that is out of sight. • I know that periscope reflects and image using light and mirrors. • I know that submarines use periscopes to see above the surface of the water whilst still submerged.
Lesson 6: Assessment	LO: To understand how light behaves. Success criteria: • To explain that light travels in straight lines. • I can describe that shadows are always the same shape as the object that made them. • I can explain the size of shadows can change, but the outline shape is always the same as the original object. • I can explain that light can reflect from a surface and change the direction of travel.

	Summer 1: Classification of Living Things
Lesson 1:	LO: To know there are five kingdoms of organisms. Success criteria: • I can identify that living things or organisms are classified into five main kingdoms • I can identify the members of each kingdom share features that are unique to that group • I know the five kingdoms are: plants, animals, fungus, protist and monera
Lesson 2:	LO: To know that plant an animal cells are different. Success criteria: • I know that cells are the tiny building blocks that make up all living things. • I can identify that there are two main types of cells: animal and plant cells • I can identify that all cells have a cell membrane, cytoplasm, a nucleus, mitochondria and vacuoles. • I know that plant cells also have cell walls and chloroplasts that contain chlorophyll.
Lesson 3:	LO: To know that taxonomy is used to show how organisms are related to each other Success criteria: • I know that Taxonomy is a way of grouping organisms • I know that all organisms are placed in one group and then are divided into smaller and smaller groups • I can identify that organisms are divided into kingdoms, phylum, class, order, family, genus, species • I know that all organisms have a scientific name made of the genus and species
Lesson 4:	LO: To know that vertebrates are classified into five groups: fish, amphibians, reptiles, birds and mammals. Success criteria: • I can identify that there are five groups of vertebrates • I know that fish are cold-blooded, have gills, live in water and lay eggs • I know that amphibians are cold-blooded, have gills and lungs, live in water and on land and lay eggs • I know that reptiles are cold-blooded, have scales and lay eggs • I know that birds are warm-blooded, have feathers, wings and lay eggs • I know that mammals are warm-blooded, have hair and feed their young milk
Lesson 5:	LO: To understand that scientists divide invertebrates into groups including insects, arachnids and molluscs. Success criteria: • I can identify that invertebrates have no backbone. • I know that some groups of invertebrates include molluscs, insects and arachnids. • I know that Cnidarian include coral, jellyfish and anemones.
Lesson 6: Assessment	LO: To be able to classify animals based on specific characteristics and give reasons. Success criteria: • I can plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs • I can record and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations • I can identify scientific evidence that has been used to support or refute ideas or arguments.