	Autumn 1 - Human Body
Lesson 1:	LO: To know the stages of human growth. Success criteria: I can explain that humans develop from an embryo into a foetus inside their mother's uterus where they grow for nine months. I can explain that once born, humans continue to grow steadily and when they reach puberty they become able to reproduce. I can explain that humans stop growing by about 21. I can explain that the average human life is about 80 years in the UK.
Lesson 2:	LO: To know that the human body changes as it goes through puberty. Success criteria: I can explain that the period of growth and change from eight to seventeen, between childhood and adulthood, is known as adolescence. I can explain that hormones are released into bloodstream during puberty that cause physical, mental and emotional changes. I can explain that during puberty, muscles and bones grow larger, females develop breasts and their hips widen, males' shoulders widen and their voice deepens.
Lesson 3:	LO: To identify physical and mental changes to the human body that happen from adulthood to old age. Success criteria: I can explain that humans stop growing at about twenty, and the metabolism slows form about forty. I can explain that peak physical fitness for humans is between 20 and 30 years old. I can explain that some of these changes can be offset by lifestyle and some by use of tools such as glasses.
Lesson 4:	LO: To know that humans reproduce. Success criteria: I can explain that female humans release an egg (ova) from the ovary. I can explain that if the egg is not fertilised, it enters the uterus and then exits the body with the lining of the uterus in process called menstruation. I can explain that the fertilised egg changes into a foetus and grows and develops within uterus until its able to survive in outside world.
Lesson 5:	LO: To know what the endocrine system is and the role of some of the glands in the body. Success criteria: I can explain that humans have two different types of glands – duct and ductless I can explain that duct glands secrete their products outside the body e.g. sweat I can explain that ductless glands secrete chemicals or hormones inside the body, where they travel through the blood stream, carrying chemical messages to various parts of the body.
Lesson 6: Assessment	LO: To show my understanding of the human reproductive and endocrine system and their role in human development. Success criteria: I can explain that humans undergo many changes as they develop from conception to old age. I can explain that puberty is the physical process by which the human changes from child to adult and can reproduce. I can explain that human reproduction requires a sperm from a testes to fertilise an egg from an ovary. I can explain that many processes in the human body are regulated by hormones which are chemicals produced in various glands.

	Autumn 2 - Materials
Lesson 1:	LO: To understand that materials can be grouped according to their properties and to know the definitions of some properties. Success criteria: I can explain that a property is something that describes a material. I can explain that some properties are visible, some can be found by testing. I can explain that materials can be grouped by their properties
Lesson 2:	LO: To know that thermal conductivity means heat can be transferred through a material. Success criteria: I can explain that thermal conductivity means heat can be transferred through a material. I can explain that materials are selected for uses that suit their properties. I can explain that results from an investigation can be shown using a graph.
Lesson 3:	LO: To understand that a solution is a mixture of a solid in a liquid where the solid has broken into parts too small to see. Success criteria: I can explain that dissolving is a process where one substance becomes incorporated with another to form a solution. I can explain that a solvent is a substance that can dissolve other substances. I can explain that some substances are soluble some are not.
Lesson 4:	LO: To know methods for separating mixtures including solutions. Success criteria: I can explain that mixtures can be separated using sieves, filters, magnetism. I can explain that dissolved solids can be regained by evaporation of the solvent. I can explain that heating a solution can speed up the process of evaporation
Lesson 5:	LO: To understand that all changes are either reversible or irreversible and be able to distinguish between them. Success criteria: I can explain that all changes are either reversible or irreversible. I can explain that making a mixture is a reversible change. I can explain that changes of state are reversible. I can explain that dissolving a solid in a liquid is an example of a mixture, so it is a reversible change.
Lesson 6: Assessment	LO: To understand that materials have properties that include solubility. To know how to separate mixtures and that changes are reversible or irreversible. Success criteria: I can explain that properties can be grouped on the basis of their properties. I can explain that when a solute dissolves in a solvent to form a solution, the process is reversible. I can explain that mixtures can be separates using a variety of techniques.

	Spring 1 - Living Things
Lesson 1:	LO: To recognise how plants and animals in our local area change throughout the year Success criteria: I know that Oak trees grow from acorns and become a habitat for many animals. I can explain that squirrels are mammals who can make their homes in oak trees, eat acorns, build nests and have young. I can explain that plants and animals are interconnected within an ecosystem.
Lesson 2:	LO: To know that Mammals and Amphibians have different life cycles Success criteria: I can explain that a mammal is born and grows into a mature adult. I can explain that most amphibians hatch from eggs underwater, before beginning a process of metamorphosis. I can explain that metamorphosis is a significant change in an animal as it grows into an adult.
Lesson 3:	LO: To know that insects and Birds have different life cycles. Success criteria: I can explain that Queen Bumblebees build nests and fill them with pollen to feed young. I can explain that cuckoos lay an egg in the nest of another bird and leave them to care for and feed their young. I can explain that all animals are born, grow and mature, but in very different ways.
Lesson 4:	LO: To know that flowering plants need pollen to reproduce. Success criteria: I can explain that most large plants reproduce by combining a male and female gamete (pollen and ovule) to make a fertilised egg that grows into an embryo. I can explain that the embryo or baby plant is protected inside a seed. I can explain that most plants clothe their seeds with fruit.
Lesson 5:	LO: To know that Jane Goodall and David Attenborough have dedicated their lives to studying the natural world and communicating their findings. Success criteria: I know that there are many different jobs in the world of science. I know that David Attenborough has studied the natural world and communicated through documentaries. I know that Jane Goodall spent 60 years studying the lives of chimpanzees.
Lesson 6: Assessment	LO: To know that living things grow and reproduce in a continuing cycle of life. Success criteria: I can explain that there are many differences between the life cycles of mammals, amphibians, insects and birds. I can explain that plants grow and reproduce in a continuing life cycle.

	Spring 2 - Forces
Lesson 1:	LO: To recognise that a force is either a push or a pull. Success criteria: I can explain that a force is either a push or a pull. I can explain that a force can cause an object to: increase speed, decrease speed, change direction, change shape. I can explain that gravity is a force that pulls objects to the centre of the earth.
Lesson 2:	LO: To know that friction occurs when two objects move against each other. Success criteria: I can explain that friction gives us grip which allows us to start and stop moving. I can explain that air resistance is a kind of friction that slows down objects moving through the air. I can explain that water resistance is a kind of friction that slows down objects moving through water. Up thrust is the force that can keep objects afloat.
Lesson 3:	LO: To know objects with a large surface area will have greater air resistance than objects with a small surface area Success criteria: I can explain that air and water resistance are both a kind of friction that slows down moving objects. I can explain that we can change the shape of objects to change the air or water resistance acting upon them. I can explain that parachutes work to slow down a falling item because they have a large surface area.
Lesson 4:	LO: Pupils carry out an appropriate scientific enquiry as planned last lesson to answer this question: How does surface area affect speed of fall in air (or water)? Success criteria: I can undertake a fair test, controlling specified variables I can record results in a table and bar graph if appropriate I can form a conclusion and explain any unexpected result
Lesson 5:	LO: To know that simple machines help us to increase the force we apply to an object to help us move it. Success criteria: I know that levers use a long pole and a pivot point to increase a force. I know that pulleys use a rope running over a pulley wheel to increase a force. I know that gears use cogs with teeth to increase the force.
Lesson 6: Assessment	LO: To explain how forces work using diagrams to show their understanding Success criteria: I know that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object I know that air resistance, water resistance and friction, act between moving surfaces I know that simple machines, including levers, pulleys and gears, allow a smaller force to have a greater effect.

	Summer 2 - Astronomy
Lesson 1:	LO: To know that astronomers believe the universe began with the Big Bang, and that it is still expanding today Success criteria: I can explain that galaxies are groups of stars held together by gravity I can explain that our galaxy is the Milky Way and our nearest neighbour is Andromeda galaxy I can explain that astronomers believe the universe started 14 billion years ago with a Big Bang
Lesson 2:	LO: To understand that gravity is a force that holds objects together. Success criteria: I can explain that gravity is the force which pulls all objects towards each other I can explain that although all objects attract all others by the force, gravity, it is too weak to notice unless one object (like the Earth) is huge I can explain that the Earth's gravity holds us to the Earth's surface; the Sun's gravity holds the Earth in orbit around it.
Lesson 3:	LO: To know the planets of our Solar System. Success criteria: I can explain the Sun is at the centre of the Solar System I can explain that our solar system contains 8 planets, 4 terrestrial planets and 4 jovian planets I can explain that there are also trillions of smaller rocks called asteroids, as well as dwarf planets like Pluto and Ceres
Lesson 4:	LO: To understand the Moon's phases. Success criteria: I can explain that the moon is the Earth's natural satellite I can explain that the moon is a planet, it does not make its own light I can explain that depending on the position of the Sun, we see all, part or none of the Moon; these are known as the phases of the Moon I can explain that Neil Armstrong and Buzz Aldrin were the first humans to land on the moon
Lesson 5:	LO: To understand that the Solar System is just a small part of our universe. Success criteria: I can explain that the universe is immensely vast I can explain that our Solar System is a tiny part of The Milky Way galaxy I can explain that the Milky Way's closest neighbour is Andromeda, 2.5 million light years away I can explain that our home supercluster is called Laniakea and contains over 100,000 galaxies
Lesson 6: Assessment	LO: To demonstrate knowledge of astronomy. Success criteria: I can explain that the order of scale:planet, sun, solar system, galaxy, universe. I can explain that astronomers believe the universe started 14 billion years ago in a big bang and that it is still expanding. I can explain that gravity is a force between all objects, and the force is bigger if the object it bigger. We can only 'feel' gravity between us and the Earth. I can explain that the planets of the solar system I can explain the reason that we see the phases of the moon I can explain that the Solar System is just a small part of our universe