

Autumn 1: Earth and Space



Describe Nicolaus Copernicus' ideas about planetary motion



Describe the movement of the Earth in space



Learn about gravitational force



Describe the characteristics of the planets in our solar system

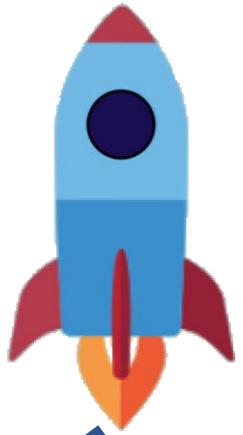


Know about comets, asteroids and meteors



Describe the Big Bang theory

Scientific Enquiry Covered	Rocket Words Covered	Name of Task / Tasks	Resources Needed	Summative Quiz Questions
Use existing knowledge to create a model of the solar system.	heliocentric, geocentric, Nicolaus Copernicus, orbit, Ptolemy	Create your own Solar System.	Planet Mobile 1. <i>Papier Mâché</i> model, 9 balloon, Newspaper, PVA glue, Bowl, Water, Rings to stand balloons on while they are drying, Paint, Paintbrushes, String, 2. <i>Ball Model</i> , 8 polystyrene balls of different sizes, Paint, Paintbrushes, String, <i>Handout - Mission to Write!</i> Copernicus' Theory	Complete the statement: For thousands of years people believed that the Sun, stars and other (planets) circled the Earth. Then, in the early 1500s, an (astronomer) in Poland called Nicolaus Copernicus, suggested a theory that said the (Sun) was at the centre of our (solar system) and the Earth and all the other planets rotated around it. The asteroid belt lies between the orbits of which two planets in our Solar System? True or false: It takes about eight seconds for the light from the Sun to reach Earth. Sort these planets in order of the number of 'moons' they have. Place these planets into the correct place.
Record data using scientific diagrams and labels	axis, season, poles, eclipse, hemisphere	Create a diagram / drawing which shows the movement of Earth around the sun, indicating how day and night occur where you live.	Pencils Paper Colouring Pencils	Arrange these planets in order of distance from the Sun from the nearest to the furthest. How far is the Earth from the Sun? Place the photographs of these heavenly bodies in the correct boxes, either within our solar system or beyond. Which of these planets are bigger than the Earth? The Earth rotates fully once every 24 hours.
Using test results to make predictions to set up further comparative and fair tests	ocean tides, gravitational force, black hole, mass, celestial	Does weight affect how fast the balls will fall?	<i>Handout</i> Modelling clay Weighing scales Metre stick Stopwatch (optional) Camera (optional)	Place the images in the correct bucket. Those that show tidal situation and those that show a non-tidal situation. True or false: The gravitational pull on the Moon is about a sixth that on Earth. That means that if you weighed yourself on the Moon you would weigh a sixth of your normal weight, but you would also be wearing a very heavy space suit. Complete the statement: The (Moon) has less gravity than Earth, but its gravity still affects us. The gravity of the Moon (pulls) on the waters of the (oceans) here on Earth. This gravitational pull causes the (tides) which are the regular patterns by which the ocean's water rises and falls. What is at the centre of every galaxy? Which of the following become more accessible at low tides?
Apply knowledge and understanding	rocky planets, gas planets, dwarf planet, moon, solar system	Heather and Jon show how to play a game of Space using today's Handout.	<i>Handout</i> Scissors Backing card Coin (or something to decide who will play first)	Place these planets in size order from the smallest to the largest. Place the photographs of the surface of planets into the correct bucket. NASA's Messenger spacecraft was launched in 2011 to orbit and investigate Mercury, the closest planet to the sun. Complete the statement: (Mercury) gets very hot and cold. When facing the (Sun) it is over 400 degrees Celsius but minus 160 degrees Celsius when facing away from the Sun. Mercury is named after the swift and speedy messenger of the (Roman) gods. The name fits because it is the (fastest) moving planet. Which of these planets is known as the Blue Planet?
Record data using scientific diagrams and labels	comet, asteroid, meteoroid, meteor, Edmund Halley	Create a graph tracking Halley's comet.	Mission Assignment Film <i>Handout - Page 1</i> Graph paper	Comets are often called dirty snowballs because they're made of ice, rocks and dust. When a comet passes close to the Sun , the Sun's rays melt some of the ice, producing a huge tail of gas and dust to form behind the comet as it streaks across the sky. Halley's comet orbits the Earth and usually appears every few days. Name some of the objects that can be seen inside our Solar System. What are most meteorites made of?
Take measurements, using a range of scientific equipment, with increasing accuracy and precision	astronomy, universe, Milky Way, expand, Big Bang theory	Making a model of the Universe.	<i>The Expanding Universe</i> Balloon Marker pen Measuring tape Handout	Arrange the following into size order, starting with the smallest. What is a scientist who studies the stars called? True or false: Is the Universe constantly contracting? Complete the statement: Many scientists believe that about 14 billion years ago, all the matter in the (Universe) was held together in a super-dense (ball). No one knows why but something caused this huge, dense ball the (explode) with an enormous explosion. This Big Bang caused matter to be (hurled) into Outer Space and these eventually formed the stars, planets and everything else. Which of the following are names of galaxies?



Aut2: Animals Including Humans

- The Human Life Cycle



Know about life cycles



Know about the human reproductive organs



Exploring gestation periods



Describe the changes which happen in childhood

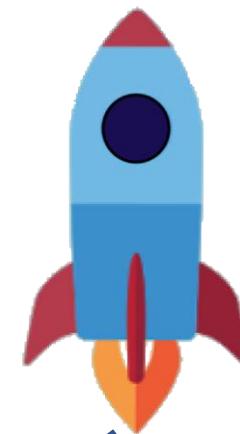


Understand changes which happen in adolescence



Describe the changes as humans develop to old age

Scientific Enquiry Covered	Rocket Words Covered	Name of Task / Tasks	Resources Needed	Summative Quiz Questions
Present information in a series of drawings	reproduce, adult, foetus, embryo, puberty	Make a flip book animation showing the life cycle of a human.	Life Cycle Flipbook Pens/pencils Sticky Notes	Sort the following list in order of those animals that normally have the lowest number of offspring at a time to those that have the highest number of offspring. Place the animals into the correct buckets. True or false: The echidna, from Australia, is the only mammal to lay eggs. Place the following stages of human development into the correct order. Which of the following animals produce milk to feed their offspring.
Report on findings from enquiries, including oral and written explanations, displays of results	egg, sperm, ovary, testes, fertilisation	Complete the card sort activity to label the parts of the male and female reproductive systems.	<i>Card Sort Activity</i> Handout - Pages 1-4 Laminator (optional) Rubber Bands to hold sets of cards together. <i>Scientific Diagrams</i> Pencils Colouring Pencils Paper	Place the animals in the correct buckets depending on whether they have internal fertilisation while others use external fertilisation. Snails are 'hermaphrodites' in that each animal has both male and female reproductive parts. But they each have to find another snail to mate with as they can't fertilise their own eggs. Sort these animals by the length of their gestation period (the time from fertilisation until birth). List them from the shortest to the longest. How many eggs does a sea turtle lay? Which of the following animals suckle their young with milk?
Report and present findings from enquiries, including conclusions, in oral and written forms	gestation, breeding, elephant, North American Opossum, time period	Conduct research on the gestation periods of different animals and create a bar graph that shows the different periods of gestation.	Report and present findings from enquiries, including conclusions, in oral and written forms	The period between conception and birth of an animal is called {{gestation}}. This is the period of time that the baby's {{growth}} happens. All animals have different gestation periods. Normally, a {{smaller}} animal will have a shorter gestation period, whereas a large animal, such as an {{elephant}} will have a longer gestation period. True or false, a human's gestation period is always exactly 9 months. How many times more heavy (on average) is a baby elephant than a baby human? Put these animals in order - from shortest to longest average gestation period. Which of these animals, during gestation, grow inside their parent and which grow outside?
Report and present findings from enquiries, including conclusions, in oral and written forms	growth spurt, childhood, motor skills, milk teeth, labour	Write down a list of instructions and ideas of how to look after a newborn baby.	Handout	Place these stages in human development in the correct order. After reaching the uterus, the sperm swim towards the fallopian tubes, where one sperm cell breaks through the egg's outer covering and then fuses with the egg and fertilises it. What essentials should a mum-to-be take into hospital for the birth of her baby? Sometimes a baby has to be delivered through a cut in the mother's abdomen, what is this operation called?
Report and present findings from enquiries, including conclusions, in oral and written forms	adolescence, bloodstream, hormone, growth, appetite	Create a quiz about adolescence.	<i>Adolescence Quiz</i> Books/Internet Paper Pens	What is the name of the powerful chemicals which are released from glands during adolescence? Which of these body changes may happen during adolescence? (choose all that apply) Boys and girls reach adolescence at the same age. Complete the statement: Adolescence usually happens during the {{teenage}} years. People's bodies go through many changes, both physical and {{emotional}}. Girls and boys have some different changes. For example, girls' {{breasts}} will grow and they will begin their {{periods}}. Which of these changes happen to boys and which happen to girls during puberty? When you've finished, can you think of changes which both boys and girls go through?
Report and present findings from enquiries, including conclusions, in oral and written forms	cataract, cardiovascular, plasticity, memory, neurodegenerative	Create your own activity for residents to participate in at their local care home.	<i>A Guide to Keeping Active</i> Paper Pens Books / Internet for research Pictures / images	True or false: Men tend to live longer than women. Which of these is likely to decline when someone is elderly? (choose all that apply) Which of these is a disease elderly people can get due to decreased brain function? Which of these noticeable physical changes happen during elderly years? Put these stages of life in order.



Spring 1: Living Things and their Habitats



Classify living things



Explore the kingdoms of life



Describe the work of Carl Linnaeus



Describe different types of fungi

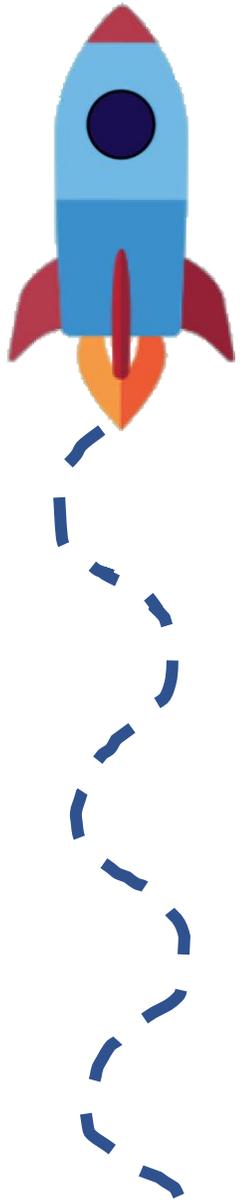


Identify different classes of vertebrates



Explore soil habitats

Scientific Enquiry Covered	Rocket Words Covered	Name of Task / Tasks	Resources Needed	National Curriculum Reference	Summative Quiz Questions
Create your own classification key	classify, spore, micro-organism, seed, similarities	Create your own classification key and challenge your friends!	<i>Create a Classification Key</i> Paper Pens Pencils Books/Internet for research	Give reasons for classifying plants and animals based on specific characteristics	All animals are given a genus and species name. <i>Drag the images into the correct area.</i> In which country was Carl Linnaeus born? Which language is used when allocating a scientific name to an animal? In which year was Carl Linnaeus born?
Use test results to make predictions to set up further comparative and fair tests	multicellular, unicellular, kingdom, cell, MRS GREN	Have a go at growing your own fungi!	<i>Mould Growing Investigation</i> Slices of bread Sealable sandwich bags Water Sticky labels Marker pens Handout	Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals	Under a microscope, scientists discovered new organisms that needed a new classification as they were neither plants nor animals. Scientists have classified living things into Select... groups called Select... based on different Select... One of these features is how an organism gets its Select... Select... make their own Select... but Select... do not. Select... can usually move themselves around, whilst Select... cannot. Sort these by whether they are a kingdom or not. What were the first two kingdoms scientists agreed on? Which food source is incredibly important in the ocean?
Report on findings from enquiries, including oral and written explanations, displays of results	Latin, genus, Carl Linnaeus, class, species	Research the different kingdoms of life	<i>Classification Challenge</i> Handout Pens Paper Scissors Books / Internet (research)	Pupils might find out about the significance of the work of scientists such as Carl Linnaeus, a pioneer of classification.	Linnaeus's system for classification is rarely used today. Linnaeus gave Select... names to the species he identified. The Select... name was more general. Homo sapiens is the Select... word for human beings; Select... means human beings and Select... means wise. What do botanists study? Which of these species belong to the Felis genus? (Tick all that apply) Carl Linnaeus published a book called Systema Naturae. What does this mean?
Record scientific data using diagrams	mycelium, fungi, mushrooms, yeasts, hyphae	Observe how spore prints change appearance on paper depending on their distance from it.	<i>Handout</i> Large mushrooms Clamp stands Clamps String Skewer to make hole Plain paper Hairspray Ruler	Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals	What is the fungal cell wall made from? What is the scientific term for a 'mushroom'? From the top to the bottom, arrange the parts of the fungus in order. From the top to the bottom, arrange the parts of the fungus in order. Which of the following are types of fungi? Fungi are not plants. They belong to their own Select... of organisms. Fungi obtain nutrients by breaking down dead and decaying matter, whereas plants obtain nutrients via Select... . Fungal cells are called Select... , and a group of these come together to form the Select... . Fungi can reproduce asexually by producing Select... , or sexually by merging cells from two fungi together.
Report on findings from enquiries, including oral and written explanations, displays of results	vertebrate, cold-blooded, amphibian, reptile, mammal	Create a hanging mobile display that gives key information about the five different classes of vertebrates.	<i>Classifying Animals</i> Reference books/Internet Scissors Glue Handout	Through direct observations where possible, they should classify animals into commonly found invertebrates (such as insects, spiders, snails, worms) and vertebrates (fish, amphibians, reptiles, birds and mammals).	Animals are classified as birds if they can fly and build nests. Which of these animals are warm-blooded and which are cold-blooded? Which of these are vertebrates? (Tick all that apply) Why are whales classified as mammals and not fish? (Tick all that apply) What does the word amphibian mean?
Research and present your findings	carbon dioxide, microorganism, plant, oxygen, microscopic	Research different organisms which live in soil.	<i>Handout</i> Books / internet Poster paper Pens, pencils, crayons etc. <i>Handout - Mission to Write! The Best Soil!</i>	Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals	Life above the ground relies on life below ground. Soil is a Select... for many living organisms. The weather affects which type of plants and animal live in a particular soil, because of differences in Select... and how much Select... here is. Billions of Select... live in the soil and they are very important to the health of the planet. What does soil provide for a seed when it is growing? What fraction of all living things use soil as their habitat? Which of these organisms are found in soil? Tick all that apply



Spring 2: Studying Living Things



Know about the life and work of Sir David Attenborough



Know about the life and work of Dame Jane Goodall



Learn about sexual reproduction



Describe the life cycles of a mammal, bird and reptile

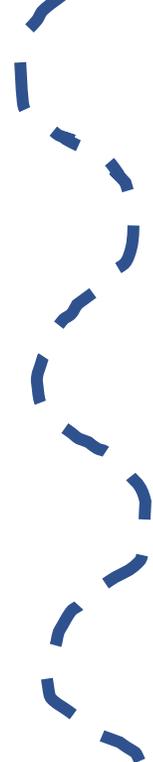
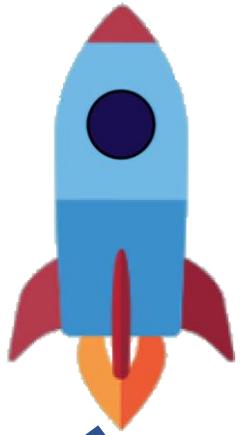


Describe the life cycle of an insect and amphibian



Learn about asexual reproduction

Scientific Enquiry Covered	Rocket Words Covered	Name of Task / Tasks	Resources Needed	Summative Quiz Questions
Report and present findings from enquiries, in oral and written forms	David Attenborough, natural sciences, documentary, naturalist, lecture	Create a quiz about Sir David Attenborough!	The Life of Sir David Attenborough Handout Sir David Attenborough Quiz Handout	In which year was Sir David Attenborough born? When he was growing up he made collections of which natural objects? Sir David Attenborough is the oldest person to have visited the North Pole. What animals might he have seen on the way there? Put your answers in the right bucket. True or false: Sir David Attenborough became the Controller of BBC2 before going on to become its Director of Programming. Place the following events in Sir David Attenborough's life in the correct order.
Report and present findings from enquiries, in oral and written forms	Jane Goodall, chimpanzee, primatologist, primate, endangered	Research the life and work of Dame Jane Goodall.	<i>A Timeline - Jane Goodall</i> Lining Paper Colouring Pens Paints ICT - research Magazines/internet for pictures and maps Handout	A person who studies monkeys and apes is called a primatologist. Complete the statement: Jane Goodall is one of the world's leading {{primatologists}}. Her love of these animals began when she was child when she owned a toy chimp called {{Jubilee}}. She went on to travel to Tanzania in {{Africa}} to study wild {{chimpanzees}}. Place these animals into the correct bucket. Arrange the following primates in size order, smallest to largest. What do gorillas eat?
Write a report and present your findings	fertilisation, genes, sexual reproduction, pollination, pollen	Produce a storyboard of reproduction in a flowering plant.	<i>Flowering Plant Storyboard</i> Handout Images from internet Pens / pencils / colouring pencils	Place these animals into the correct buckets. Arrange the following stages of the oak tree into the correct order. Complete the statement: Most plants start off life as {{seeds}}. Under the right conditions the seeds {{germinate}} and grow into {{seedlings}}. They then grow and eventually get big enough to produce their own seeds and this life {{cycle}} continues. Which animal gives birth to the world's biggest baby? Which of the following is not a stage in an animal's life cycle?
Report and present findings from enquiries, in oral and written forms	unborn, egg, hatch, fledgling, mammary gland	Create a lifecycle poster and factfile on an animal of your choice.	<i>Life Cycle Challenge</i> Computers/Books Handout Pens Paper	Place the animals into the correct bucket. Arrange these stages of the butterfly life cycle into the correct order. Do all birds lay eggs? Which of these animals produce milk to feed their offspring? Which animal has the world's biggest egg?
Comparing the life cycle of a butterfly with two other egg-laying animals.	metamorphosis, larva, pupa, tadpole, butterfly	Comparing the life cycle of a butterfly with two other egg-laying animals.	<i>Life Cycle Comparison</i> Handout	What does metamorphosis mean? Where do female butterflies lay their eggs? (Tick all that apply) True or false: Once an insect has gone through metamorphosis, it is called larvae. Order these stages of a butterfly's life cycle. What does a caterpillar wrap itself in to change into a butterfly?
Plan different types of scientific enquiries to answer questions, including controlling variables where necessary	asexual, plantlet, bulb, tuber, bacteria	Clone your own plant cutting and explore how the outcome can be varied.	<i>Method 1</i> Plant (such as strawberries, tomato, basil or chilli), scissors, water, small flowerpot of moist soil, moist rooting powder <i>Method 2</i> Plant (such as strawberries, tomato, basil or chilli), scissors, glass of water, small flowerpot of moist soil	Place the animals and plants into the correct buckets. True or false: All bacteria reproduce asexually. Sort these organisms that reproduce asexually into size order from the smallest to the largest. Complete the statement: Hydra is a tiny freshwater creature related to the sea {{anemone}}. They are usually brown or green in colour and catch tiny {{organisms}} using the stinging harpoons along their tentacles. They reproduce {{asexually}} by budding, a small lump appears on the side of the body that grows and develops {{tentacles}} before dropping off and living independently. Which of the following reproduce sexually?



Summer 1: Evolution and Inheritance



Explain how adaptations help animals and plants survive



Describe the process of natural selection



Explain what fossils can tell us



Explain why animals can look different to their parents

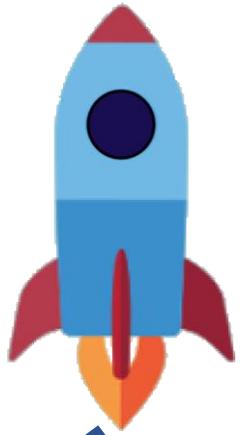


Explore the work of palaeontologist Mary Anning



Describe the process of genetic modification

Scientific Enquiry Covered	Rocket Words Covered	Name of Task / Tasks	Resources Needed	National Curriculum Reference	Summative Quiz Questions
Identify scientific evidence that has been used to support or refute ideas or arguments	adaptation, desert, cactus, insulating, environment	Create your own animal that would be well adapted to survive in the desert.	Handout	Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution	Which of these creatures would you expect to find in an arid desert? Which wouldn't you expect to find there? Cacti have developed {{spines}} in order to stop {{predators}} eating them and stealing their precious supply of {{water}}. This is a key {{adaptation}} that helps them survive in an arid desert. Some cacti can grow to up to 15 metres tall. Have another look at the expert film on scorpions and toads. What advantages do scorpions have as a result of their exoskeleton (hard shell-like skin)? Choose all that apply. Which of these challenges might a creature living in an arid desert expect to come across? (choose all that apply)
Identify scientific evidence that has been used to support or refute ideas or arguments	Charles Darwin, habitat, ancestor, Natural Selection, extinct	Camouflaged Worms.	<i>Camouflaged worms - Individual model</i> 20 plain toothpicks 20 toothpicks painted to match the floor/carpet, Stopwatch, Cups. Tweezers, Handout 1	Pupils might find out about the work of palaeontologists such as Mary Anning and about how Charles Darwin and Alfred Wallace developed their ideas on evolution.	The Darwin Medal was first awarded to Charles Darwin in 1890. On the Galapagos Islands in the Select... Ocean, he found lots of birds that looked like Select... .They were all very similar, except for their Select... and had evolved from one, shared ancestor. He also noticed that the Select... were not all the same. They had Select... themselves to suit the Select... of the islands they were on. Order these events of Charles Darwin's life. <i>Drag the answers into the correct order</i> What was the ship called that Charles Darwin sailed to the Galapagos Islands on? <i>Choose 1 answer</i> A naturalist is someone who studies...? Tick all that apply. <i>Choose 2 answers</i>
Identify scientific evidence that has been used to support or refute ideas or arguments	fossil, fossilisation, evidence, dinosaur, petrified	Review the handout and answer the questions.	Handout	Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago	Many plants and animals end up as fossils. <i>Choose 1 answer</i> Order these in the correct order to explain how a fossil is made. <i>Drag the answers into the correct order</i> Land animals are never fossilised. <i>Choose 1 answer</i> Sediment is made up of...? Tick all that apply. <i>Choose 3 answers</i> . What is a coprolite? <i>Choose 1 answer</i>
Identify scientific evidence that has been used to support or refute ideas or arguments	generation, species, evolution, offspring, DNA	Extract the DNA from a banana.	<i>Extracting DNA from a Banana</i> , Goggles, Apron / Lab Coat, Banana, Sealable sandwich bag, Warm Water, Salt, Washing Up Liquid Filter Paper, Funnel, Rubbing Alcohol, Plastic containers	Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents They should also appreciate that variation in offspring over time can make animals more or less able to survive in particular environments, for example, by exploring how giraffes' necks got longer Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution	Every living organism in the wild has to compete to live. <i>Choose 1 answer</i> . Which of these animals are extinct? <i>Drag the images into the correct area</i> Every offspring is Select... but it may share Select... from one or both of its parents. The parents and the young are from Select... generations. Animals with characteristics that are better adapted to survive in a habitat will survive but others, which aren't, will eventually die out or become Select... . What are an animal's offspring? <i>Choose 1 answer</i> Which characteristics do the cat species share? <i>Choose 2 answers</i>
Identify scientific evidence that has been used to support or refute ideas or arguments	Mary Anning, specimen, prehistoric, Jurassic Coast, palaeontologist	Create a fossil using simple materials!	<i>Make Your Own Fossil</i> Plasticine Plaster of Paris Water Mixing Dish/Bowl Cocktail sticks Handout - Page 1	Pupils might find out about the work of palaeontologists such as Mary Anning and about how Charles Darwin and Alfred Wallace developed their ideas on evolution.	The Jurassic Coast is a World Heritage Site. <i>Choose 1 answer</i> Mary Anning lived in Lyme Regis, Dorset, which had once been Select... It is called the Jurassic Coast because so many Select... ossils have been found there. She often went fossil hunting after Select... and would sell her findings to make money for her family. Mary Anning was a famous... Find 3 answers. <i>Choose 3 answers</i> . Mary Anning was the first person to discover which fossilised full skeleton? <i>Choose 1 answer</i> . What did Mary Anning use belemnites to create? <i>Choose 1 answer</i>
Identifying scientific evidence that can be used to support or refute your arguments	genetically modified crops, toxin, resilience, breeding, yield	Hold a debate on GM crops.	Handout	Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution	No GM crops are grown commercially in the UK. <i>Choose 1 answer</i> . A GM crop is one that scientists have Select... - it has not Select... naturally. Scientists want to improve crops by changing their Select... to give them new characteristics. For example, they may take a gene that allows a crop to hold more water and put it into a plant that grows in a Select... climate. Which of these GM products are allowed to be imported to the UK? <i>Drag the images into the correct area</i> GM crops may cause harm to...? <i>Choose 3 answers</i> What does GM stand for? <i>Choose 1 answer</i>



Summer 2:

Animals Including Humans

- The Heart and Health



Describe the function of blood



Describe the function of blood vessels



Describe how your heart moves blood around the body



Describe what affects your heart rate



Explore the different food groups and identify ways to eat a balanced diet



Describe the consequences of an unhealthy lifestyle

Scientific Enquiry Covered	Rocket Words Covered	Name of Task / Tasks	Resources Needed	National Curriculum Reference	Summative Quiz Questions
Identify scientific evidence that has been used to support or refute ideas or arguments	transportation, cell, nutrients, protein, circulatory system	Model cell movement using gummy bears!	<i>Gummy Sweet Osmosis</i> Gummy sweets Beakers/ cups/ glasses Milk Tap water Salt Water Cola/soda Rulers Handout	Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood Describe the ways in which nutrients and water are transported within animals, including humans	Capillaries transport nutrients, oxygen and waste products. Nutrients travel through the capillaries, which are tiny blood Select... , until they reach a cell that needs them. Select... has many important functions and makes up Select... of our bodies. It enters the red blood cells by a process called Select... . Which of these make up the circulatory system? (Tick all that apply) What does protein help your muscles do? What do enzymes extract from carbohydrates?
Record data and results of increasing complexity using scientific diagrams	blood vessels, heart attack, artery, fatty deposits, vein	Investigate blood clotting!	Four equally sized disposable cups Pin Ruler Stopwatch	Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood	People have always known that the heart pumps blood in a circuit through the body. Exercising makes your heart muscle Select... and can help you live longer. Eating Select... is another key to a healthy heart. When you eat Select... fat than your body can use, it may build up as fatty deposits inside your blood vessels. These deposits can cause blood Select... . All fats that you eat are bad for you. Doctors were watching blood flow in the tail of which live animal, when they realised Harvey was right? What invention was used to investigate William Harvey's claim that the heart was at the centre of a blood circulating system?
Plan different types of scientific enquiries to answer questions	involuntary, contract, relax, oxygenated, bloodstream	Create a model of the heart.	<i>Modelling the Heart</i> Plastic bottles with wide neck Water Balloons Skewer or pencils Straws Sticky tape Handout	Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood	The aorta is the biggest vessel of all. Your heart is a powerful Select... . Every time it Select... , it pumps blood to all parts of your Select... . When you exercise, your heart beats Select... because it is having to work harder. Order the journey of blood. <i>Drag the answers into the correct order.</i> The heart is divided into how many chambers? <i>Choose 1 answer</i> Which of these are part of your circulatory system? Tick all that apply. <i>Choose 2 answers</i>
Record data and results of increasing complexity use scientific diagrams and bar graphs	blood pressure, general practitioner, pulse, heart rate, exercise	Check your heart rate when resting and after exercise. Draw a bar graph to show your results!	<i>Beating Pulses</i> Stopwatch Pen Handout 1 - Beating Pulses	Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood	Everyone's heart rate is 90 pulses per minute. <i>Choose 1 answer</i> Your Select... is how often your heart squeezes to pump blood around the body. Your Select... is the pushing force caused by heart pumping the blood through the body. When you exercise heart rate Select... because your cells are using lots more Select... . Having high blood pressure (hypertension) can result in which of these medical conditions? <i>Choose 2 answers</i> Blood pressure is of one the things that nurses and GPs check to make sure which system is working properly? <i>Choose 1 answer</i> _____ walls are very thin so oxygen and nutrients can easily pass through. <i>Choose 1 answer</i>
Take measurements, using a range of scientific equipment, with increasing accuracy and precision	nutrients, carbohydrates, balanced diet, vitamins and minerals, protein	Investigate what type of taster you are.	Student Handouts Natural, blue food dye Cotton buds Card Hole-punch Paper towels Mini cups Drinking water Magnifying glass	Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function Describe the ways in which nutrients and water are transported within animals, including humans	It is important to eat an equal amount of each of the food groups. Order the food groups from the smallest to the largest amount needed for a balanced diet. <i>Drag the answers into the correct order.</i> Select...provides our body with energy. Fruit and vegetables contain Select... and minerals which are essential for our body to function well. Protein is needed for Select...and you must also make sure you drink enough Select... What does meat provide us with? <i>Choose 1 answer</i> Which of the following are carbohydrates? <i>Choose 2 answers</i>
Identify scientific evidence that has been used to support or refute ideas or arguments	addiction, black tar, cigarette, lung cancer, poison	Create an anti-smoking campaign!	<i>Anti-Smoking Campaign</i> Handouts Paper / pens / craft materials	Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function	Smoking cigarettes is one of the worst things you can do to your lungs and heart. <i>Choose 1 answer</i> Cigarette smoke also contains sticky, black Select... , which builds up on the smoker's lungs. The Select... can become so stiff that they cannot expand and pass Select... to the blood. When smokers exercise, they run out of Select... and their heart pumps harder. Select... oxygen actually reaches their cells through. Cigarette smoke only affects the smoker's lungs. Roughly how many different chemicals enter the lungs when a person inhales cigarette smoke? Cigarettes smoking contain which of the following? (Tick all that apply)

