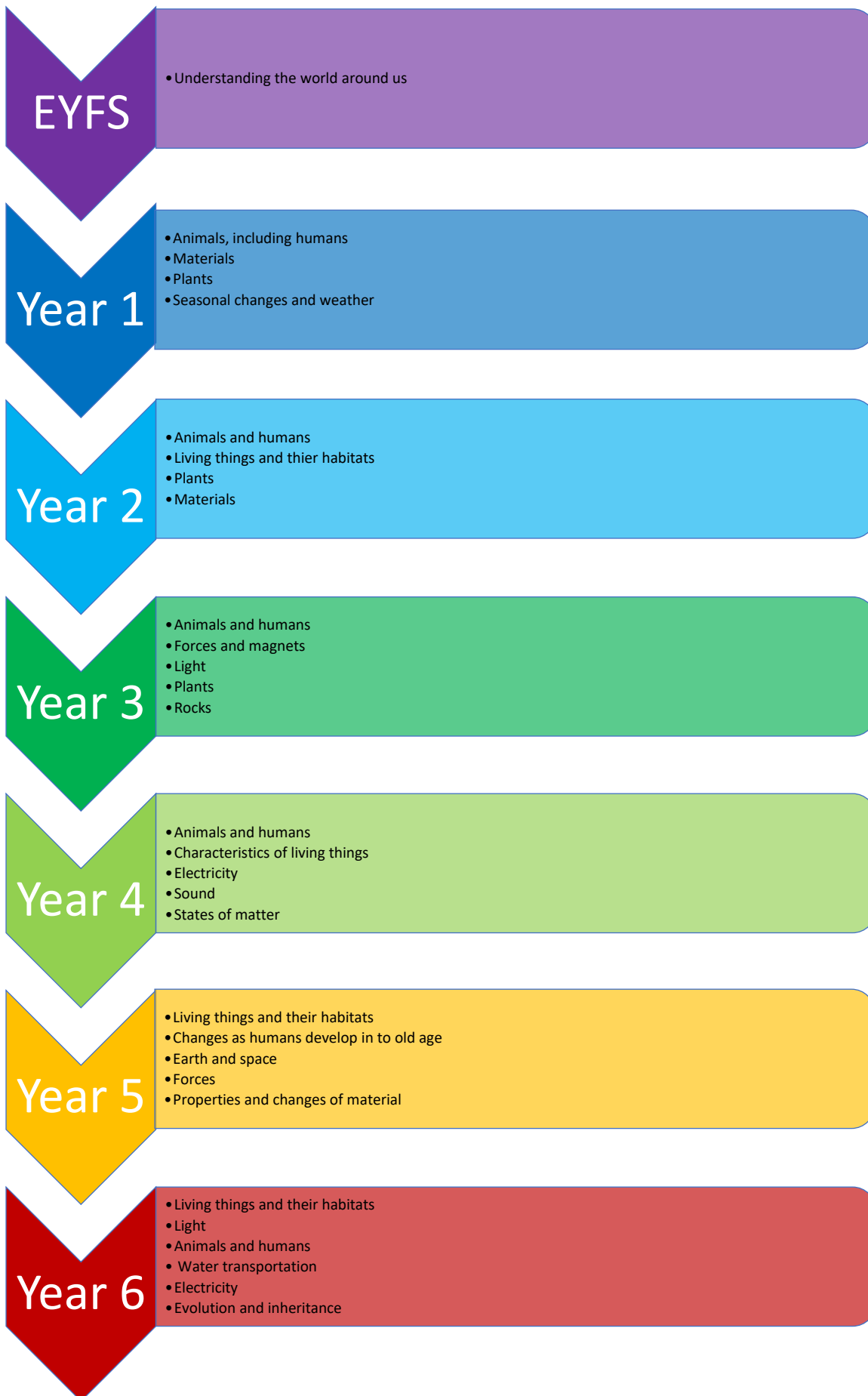


Science at Woodlands



	Unit	Questions / Foci	Pupils should be taught to:
EYFS	The Natural World	<ul style="list-style-type: none"> Explore the natural world around them, making observations and drawing pictures of animals and plants; Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class; Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. 	
Year 1	Animals, including Humans	<p>What is an animal?</p> <p>Characteristics What types of animal are there? What is similar and what is different? What does food tell us about an animal?</p> <p>Humans What makes me an animal? What senses do I have?</p>	<ul style="list-style-type: none"> identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals identify and name a variety of common animals that are carnivores, herbivores and omnivores describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense
	Materials	<p>What are materials? What are things made of in school?</p> <p>Characteristics How can I describe materials? Which materials are waterproof and which are not? Which materials are transparent and which are opaque? What's the best material for the job? Why?</p>	<ul style="list-style-type: none"> distinguish between an object and the material from which it is made identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock describe the simple physical properties of a variety of everyday materials compare and group together a variety of everyday materials on the basis of their simple physical properties
	Plants Plus a revisit unit	<p>Plants What are the parts of a plant? What are wild plants and where do you find them? What are garden plants and where do you find them?</p> <p>Trees What makes a tree? What types of tree are there? (Trees that live around my school) What's the difference between trees?</p>	<ul style="list-style-type: none"> identify and name a variety of common wild and garden plants, including deciduous and evergreen trees identify and describe the basic structure of a variety of common flowering plants, including trees
	Seasonal changes and weather	<p>What are the four seasons? What's the weather like in Autumn, Winter, Spring and Summer? Why does day become night?</p>	<ul style="list-style-type: none"> observe changes across the 4 seasons observe and describe weather associated with the seasons and how day length varies

	<p>Revisit - animals</p>	<p>REVISIT AND NAME IT What features do animals have?</p> <p>DESCRIBE IT What are the features of the animal group?</p> <p>SORT IT Compare animal groups – what do you notice is similar and what is different?</p>	<ul style="list-style-type: none"> • identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals • identify and name a variety of common animals that are carnivores, herbivores and omnivores • describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) • identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense
	<p>Revisit plants, animals and seasons</p>	<p>REMEMBER IT Practically sort and classify the characteristics of animals</p> <p>ELABORATE it Give children the opportunity to show their interests and fascination about the animal world. Using what they know children select an animal that really interests them. It is their opportunity to become a little more knowledgeable about an animal.</p> <p>Remember it What do we know about plants and seasons?</p>	<ul style="list-style-type: none"> • identify and name a variety of common wild and garden plants, including deciduous and evergreen trees • identify and describe the basic structure of a variety of common flowering plants, including trees • identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals • identify and name a variety of common animals that are carnivores, herbivores and omnivores • describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) • identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense
<p>Year 2</p>	<p>Animals and humans Plus revisit unit</p>	<p>REMEMBER: What is an animal?</p> <p>How do animals change as they mature? What do all animals need to stay alive?</p> <p>Keeping healthy: Why do we exercise? Why do we eat different types of food?</p>	<ul style="list-style-type: none"> • notice that animals, including humans, have offspring which grow into adults • find out about and describe the basic needs of animals, including humans, for survival (water, food and air) • describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene
	<p>Living things and their habitats</p>	<p>Living things What is alive and what is not? What do all living things have in common?</p> <p>Habitats</p>	<ul style="list-style-type: none"> • explore and compare the differences between things that are living, dead, and things that have never been alive • identify that most living things live in habitats to which they are suited and describe how different habitats provide

		<p>Where do plants and animals live? What plants and animals live in our local environment?</p> <p>Food chains What are food chains? How are they connected? Why do plants and animals need each other?</p>	<p>for the basic needs of different kinds of animals and plants, and how they depend on each other</p> <ul style="list-style-type: none"> • identify and name a variety of plants and animals in their habitats, including microhabitats • describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food
Plants Plus revisit unit		<p>Germination How do seeds germinate and what happens? What happens when bulbs sprout?</p> <p>Healthy plants What do plants need to thrive and be healthy? What can happen if plants don't get the things they need? What do I notice about plants around the school? How are they healthy? How are they unhealthy?</p> <p>Show what you know How do seeds and bulbs grow? What do plants need to be healthy?</p>	<ul style="list-style-type: none"> • observe and describe how seeds and bulbs grow into mature plants • find out and describe how plants need water, light and a suitable temperature to grow and stay healthy
Materials		<p>What are materials used for? Categorise and compare wood, metal, plastic and glass Categorise and compare ceramics, rock, paper and card, and fabric.</p> <p>What happens when we squash, bend, twist or stretch a material?</p> <p>Characteristics What's the right material for the job? What's the most absorbent material?</p> <p>Scientist Who invented waterproofing?</p>	<ul style="list-style-type: none"> • identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses • find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching
Revisit – living things, habitats and materials		<p>What is it made from?</p> <p>Compare: What is alive, what is not alive and what has never been alive?</p> <p>Use What materials do our pets have or need? Why is that?</p>	<ul style="list-style-type: none"> • explore and compare the differences between things that are living, dead, and things that have never been alive • identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of

			<p>animals and plants, and how they depend on each other</p> <ul style="list-style-type: none"> • identify and name a variety of plants and animals in their habitats, including microhabitats • describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food • identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses • find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching
	Revisit materials	<p>REMEMBER IT What are everyday materials and how are they used?</p> <p>APPLY IT Why do you think materials should and should not be used for certain jobs?</p> <p>PROVE IT What is the hardest and softest material?</p>	<ul style="list-style-type: none"> • identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses • find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching
Year 3	Animals and humans	<p>Diet What effect does the food we eat have?</p> <p>Movement Where is my skeleton and what does it do? Where are my muscles and what do they do?</p>	<ul style="list-style-type: none"> • identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat • identify that humans and some other animals have skeletons and muscles for support, protection and movement
	Forces and magnets	<p>Friction What are contact forces? How do surfaces affect the motion of an object? How does friction affect moving objects?</p> <p>Magnets What is a non-contact force? How is this different to a contact force? How do magnets attract and repel? Which materials are magnetic?</p>	<ul style="list-style-type: none"> • compare how things move on different surfaces • notice that some forces need contact between 2 objects, but magnetic forces can act at a distance • observe how magnets attract or repel each other and attract some materials and not others • compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials • describe magnets as having 2 poles

			<ul style="list-style-type: none"> predict whether 2 magnets will attract or repel each other, depending on which poles are facing
	Light	<p>Remember What are light sources and what are not light sources?</p> <p>Do we need light to see things?</p> <p>Shadows How are shadows formed? What happens to the size of the shadow when the object is moved closer to, or away from, the light source?</p>	<ul style="list-style-type: none"> recognise that they need light in order to see things and that dark is the absence of light notice that light is reflected from surfaces recognise that light from the sun can be dangerous and that there are ways to protect their eyes recognise that shadows are formed when the light from a light source is blocked by an opaque object find patterns in the way that the size of shadows change
	Plants	<p>Parts of a plant What are the parts of a flowering plant? What do they do?</p> <p>Nutrients and water Do all plants need the same thing to thrive and grow? How do leaves make food for the plant? How does water move through a plant?</p> <p>Reproduction What do flowers do? What is pollination?</p>	<ul style="list-style-type: none"> identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant investigate the way in which water is transported within plants explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal
	Rocks Plus revisit unit	<p>Rocks How are rocks formed? What type of rocks are there? Can rocks change? How can we test a rock to see if it is limestone or chalk?</p> <p>Soil Is soil just dirt?</p> <p>Fossils How are fossils formed?</p>	<ul style="list-style-type: none"> compare and group together different kinds of rocks on the basis of their appearance and simple physical properties describe in simple terms how fossils are formed when things that have lived are trapped within rock recognise that soils are made from rocks and organic matter
Year 4	Animals and humans	<p>What teeth do humans have? What do they do? How does our mouth and teeth help digestion? What's the process? Can teeth tell us what animals eat?</p>	<ul style="list-style-type: none"> describe the simple functions of the basic parts of the digestive system in humans identify the different types of teeth in humans and their simple functions construct and interpret a variety of food chains, identifying producers, predators and prey

<p>Characteristics of living things Plus revisit unit</p>	<p>Living things What are the characteristics of living things?</p> <p>Classification What are the characteristics of vertebrates? What are the characteristics of invertebrates? What groups are plants classified in? What is classification? How do I use a key?</p> <p>Habitats What happens if the environment in a habitat changes?</p>	<ul style="list-style-type: none"> • recognise that living things can be grouped in a variety of ways • explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment • recognise that environments can change and that this can sometimes pose dangers to living things
<p>Electricity</p>	<p>What appliances use electricity? What sort of power makes them work?</p> <p>Notice it – what are the everyday appliances that run on electricity – battery or mains?</p> <p>Name it - what are the components in a simple series circuit?</p> <p>Test it - what happens when a circuit is open or closed?</p> <p>Diagnose it – what are the effects of changing circuit components and batteries?</p>	<ul style="list-style-type: none"> • identify common appliances that run on electricity • construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers • identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery • recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit • recognise some common conductors and insulators, and associate metals with being good conductors
<p>Sound</p>	<p>Remember Remember particles from states of matter</p> <p>What is sound? How does sound travel? What is the pitch and loudness of sound?</p>	<ul style="list-style-type: none"> • identify how sounds are made, associating some of them with something vibrating • recognise that vibrations from sounds travel through a medium to the ear • find patterns between the pitch of a sound and features of the object that produced it • find patterns between the volume of a sound and the strength of the vibrations that produced it • recognise that sounds get fainter as the distance from the sound source increases
<p>States of matter</p>	<p>What is matter? What does state mean? What are solids, liquids and gasses?</p>	<ul style="list-style-type: none"> • compare and group materials together, according to whether they are solids, liquids or gases

		<p>Melting – how do materials change state?</p> <p>Evaporating – How do materials change state?</p> <p>Condensing – How do materials change state</p> <p>Summary How do materials change their state of matter?</p>	<ul style="list-style-type: none"> observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature
Year 5	<p>Living things and their habitats</p> <p>Plus revisit unit</p>	<p>Life cycles What's the difference between a mammal and an amphibian? What's the difference between an insect and a bird? What is similar and what is different between the life cycles of a mammal, an amphibian, an insects and a bird?</p> <p>Scientist Who was Maria Marion and what did she do?</p> <p>Reproduction How do living things reproduce? Plants and animals: What's the life process of reproduction?</p>	<ul style="list-style-type: none"> describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird describe the life process of reproduction in some plants and animals
	<p>Animals and humaqns</p>	<p>What is the human timeline? How do we change into adults? How does human and animal life spans compare?</p>	<ul style="list-style-type: none"> describe the changes as humans develop to old age
	<p>Earth and space</p>	<p>Planets What are the planets in our solar system?</p> <p>Moon How does our view of the moon change in a lunar month?</p> <p>Rotation Why does the rotation of the Earth result in night and day? Why is the Earth's tilt responsible for seasons?</p> <p>Present Present what you know about the Earth and space</p>	<ul style="list-style-type: none"> describe the movement of the Earth and other planets relative to the sun in the solar system describe the movement of the moon relative to the Earth describe the sun, Earth and moon as approximately spherical bodies use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky

	<p>Forces</p> <p>Remember Remember gravity. When is friction helpful and when is it not?</p> <p>Resistance What is the effect of air resistance? What is the effect of water resistance?</p> <p>Pulleys, gears and levers How do levers help us? How do pulleys and gears help us?</p> <p>Who was Galileo Galilei?</p>	<ul style="list-style-type: none"> explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object identify the effects of air resistance, water resistance and friction, that act between moving surfaces recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect
	<p>Properties and changes of material</p> <p>Materials What properties do materials have? How do we use them?</p> <p>Mixing materials What is a solution and what is a mixture? How can we separate materials from a mixture? How can we separate materials from a solution?</p> <p>Reversible and irreversible What changes are reversible? What changes are irreversible?</p>	<ul style="list-style-type: none"> compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic demonstrate that dissolving, mixing and changes of state are reversible changes explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda
Year 6	<p>Living things and their habitats</p> <p>Who was the scientist Carl Linnaeus and what did he do?</p> <p>Classification How do we classify vertebrates? How do we classify invertebrates? How do we classify invertebrates we don't know? – sponges, jellyfish, flatworm, starfish and sea urchins</p> <p>Apply it What animals and plants exist in my environment?</p>	<ul style="list-style-type: none"> 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 give reasons for classifying plants and animals based on specific characteristics Includes weekly wander and monthly meander templates for enhanced provision.

<p>Light</p>	<p>How does light travel? What colour is light made of?</p> <p>Reflection How does light help us to see objects? Which surfaces make the best reflectors? Why do we see objects as a particular colour? What happens to the appearance of objects when they are placed in water?</p>	<ul style="list-style-type: none"> • recognise that light appears to travel in straight lines • use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye • explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes • use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them
<p>Animals and humans</p>	<p>Blood What is blood made of and why do we need it? Why do our bodies need nutrients and how are they transported?</p> <p>Circulation What is our circulatory system? What is our heart like inside? How does it work? Who influenced what we know about our circulatory system?</p> <p>Staying healthy What can we do to keep healthy?</p> <p>Presentation Present and explain what we know about our circulatory system, nutrients and keeping healthy.</p>	<ul style="list-style-type: none"> • identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood • 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
<p>Water transportation</p>	<p>Remember Remember circulation and digestion? How are these two systems connected?</p> <p>Kidneys Where are the kidneys and what do they do? How do the kidneys keep us healthy?</p>	<ul style="list-style-type: none"> • describe the ways in which nutrients and water are transported within animals, including humans
<p>Electricity</p>	<p>What is electricity? How does it work?</p> <p>Do it – How do we build and represent a series circuit?</p>	<ul style="list-style-type: none"> • associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit • compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of

		<p>Test it- How does the number of cells and voltage affect the components in a circuit?</p> <p>Diagnose it – What are the effects and consequences of changing the circuit components and batteries?</p>	<p>buzzers and the on/off position of switches</p> <ul style="list-style-type: none"> • use recognised symbols when representing a simple circuit in a diagram
	<p>Evolution and inheritance</p>	<p>Living things How have living things changed over time? How do we know? How has life changed over time?</p> <p>DNA What is DNA and what does it do? Are all offspring identical to their parents?</p> <p>Evolution Darwin and Wallace – what evidence did they share to argue the case for evolution? Survival of the fittest – how have animals adapted and evolved to suit their environment?</p>	<ul style="list-style-type: none"> • recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago • recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents • identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution