Year 6 Curriculum

Autumn		Spring		Summer		
Light	Animals Including Humans	**Electricity**	**Living things and their habitats**	**Evolution and inheritance**	**Body Health**	
Science Objectives	**Key knowledge**	**Core Vocabulary**		**POP tasks**	**Links to Curriculum Drivers**	**Resources**
Throughout the year **Working Scientifically:** ~ Plan different types of scientific enquiries to answer questions. ~ Recording data and results of increasing complexity using graphs, diagrams etc. ~ Report and present findings, including conclusions, causal relationships and explanations		**Working Scientifically:** Plan, variables, measurements, accuracy, precision, repeat readings, predictions Reporting data: labels, diagrams, tables, line graphs Report and present: conclusions, explanations, presentation				
Autumn 1 **Light** Year 3 ~Recognise that light is needed to see ~ notice light is reflected from surfaces ~ Recognise light from the sun can dangerous ~ Recognise how shadows are formed ~Find patterns in the way shadows change.	Light appears to travel in straight lines, and we see objects when light from them goes into our eyes. The light may come directly from light sources, but for other objects some light must be reflected from the object into our eyes for the object to be seen. Objects that block light (are not fully transparent) will cause shadows. Because light travels in straight lines the shape of the	light, light source, dark, reflection, reflect, reflective, ray, pupil, retina, shadow, opaque, translucent, transparent. **Year 6: Light, light source, reflection, incident ray, reflected ray, the law of reflection, refraction, visible spectrum, prism, shadow, transparent, translucent, opaque.**		**Basic:** Describe how divergent light from a source affects the size of shadows. **Advancing:** Explain why shadows are	**Possibilities – Stephen Hawking**	

Year 6 **~Recognise that light travels in straight lines** **~ Explain how objects are seen because they give out or reflect light into the eye** **~ Light travels from light sources to our eyes** **~ Explain why shadows have the same shape as what cast them**	shadow will be the same as the outline shape of the object.		'longer' or 'shorter' in the summer. **Deep:** Is it possible that a shadow can be formed that is smaller than the object that created it?		
Autumn 2 **Animals Including Humans** Year 5 ~ Describe changes as humans develop to old age **Year 6** **~ Identify and name human circulatory system**	The heart pumps blood in the blood vessels around to the lungs. Oxygen goes into the blood and carbon dioxide is removed. The blood goes back to the heart and is then pumped around the body. Nutrients, water and oxygen are transported in the blood to the muscles and other parts of the body where they are needed. As they are used, they produce carbon dioxide and other waste products. Carbon dioxide is carried by the blood back to the heart and then the cycle starts again as it is transported back to the lungs to be removed from the body. This is the human circulatory system.	Circulatory system, heart, pulmonary, alveoli, gas exchange	**Basic:** Describe the functions of the heart, blood vessels and blood. **Advancing:** Contrast the different roles of veins and arteries in the human circulatory system. **Deep:** Relate information about blood pressure to diet and lifestyle.	**Wellbeing – Keeping healthy** **Marie Maynard Daly**	

Spring 1 Year 4 ~ Identify appliances that run on electricity ~ Construct a simple electrical circuit ~Identity whether a lamp will light in a circuit ~ recognise a switch opens and closes a circuit ~Recognise some common conductors and insulators **Electricity** **~Associate brightness of lamp or volume of a buzzer to the number of voltage cells** **~Compare and give reasons for variations in how components function** **~Use recognised symbols when representing a simple circuit.**	Adding more cells to a complete circuit will make a bulb brighter, a motor spin faster or a buzzer make a louder sound. If you use a battery with a higher voltage, the same thing happens. Adding more bulbs to a circuit will make each bulb less bright. Using more motors or buzzers, each motor will spin more slowly and each buzzer will be quieter. Turning a switch off (open) breaks a circuit so the circuit is not complete and electricity cannot flow. Any bulbs, motors or buzzers will then turn off as well. You can use recognised circuit symbols to draw simple circuit diagrams.	Electricity, generate, renewable, non-renewable, appliances, battery, circuit, electrons **Year 6: Circuit, symbol, cell/battery, current, amps, voltage, resistance, electrons**	**Basic:** Observe and describe the effect of changing the number and voltage of cells used in a series circuit. **Advancing:** Experiment with, explain and demonstrate the pattern between the voltage of cells and the brightness of a bulb. **Deep:** Suggest why a bulb or buzzer may stop working when the voltage increases.	**Possibilities – Electrician Steve Jobs**	
Spring 2 **Living things and their habitats** Year 5	Living things can be formally grouped according to characteristics. Plants and animals are two main groups but there are other livings things that do not fit into these groups e.g. micro-organisms such as bacteria and yeast, and	Sexual, asexual, reproduction, amphibian, reptile, bird, insect, fish, embryo, mammal, metamorphosis, Fertilisation, asexual reproduction, sexual reproduction, life cycle,	**Basic:** Use classification keys to identify	**Community-Local environment**	

~ Describe the differences in the life cycles of mammals, amphibians, insects and birds ~ Describe life process of reproduction in plants and animals **Year 6** **~Describe how living things are classified into broad groups based on characteristics** **~Give reasons for classifying plants and animals based on scientific characteristics**	toadstools and mushrooms. Plants can make their own food whereas animals cannot. Animals can be divided into two main groups: those that have backbones (vertebrates); and those that do not (invertebrates). Vertebrates can be divided into five small groups: fish; amphibians; reptiles; birds; and mammals. Each group has common characteristics. Invertebrates can be divided into a number of groups, including insects, spiders, snails and worms. Plants can be divided broadly into two main groups: flowering plants; and non-flowering plants.	**Year 6: Classify, compare, classification, domain, kingdom, phylum, class, order, family, genus, species, characteristics, vertebrates, invertebrates, microorganism, organism, flowering, non-flowering**	insects and animals. **Advancing:** Identify plants, mammals, amphibians, insects and birds from classification keys. **Deep:** Propose criteria for the creation or classification groups for: mammals, amphibians, insects and birds.		
Summer 1 **Evolution and inheritance** ~ Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago	All living things have offspring of the same kind, as features in the offspring are inherited from the parents. Due to sexual reproduction, the offspring are not identical to their parents and vary from each other. Plants and animals have characteristics that make them suited (adapted) to their environment. If the environment changes rapidly, some variations of a species may not suit the new environment and will die. If the environment changes slowly, animals and plants with variations that are best suited survive in greater numbers to reproduce and pass their	Offspring, inheritance, variations, characteristics, adaption, habitat, environment, evolution, natural selection, fossil, adaptive traits, inherited traits	**Basic:** Describe how animals and plants are suited to the environments in which they are found. **Advancing:** Compare and contrast different	**Possibilities – Scientists – Charles Darwin**	

~ 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.	characteristics on to their young. Over time, these inherited characteristics become more dominant within the population. Over a very long period of time, these characteristics may be so different to how they were originally that a new species is created. This is evolution. Fossils give us evidence of what lived on the Earth millions of year ago and provide evidence to support the theory of evolution. More recently, scientists such as Darwin and Wallace observed how living things adapt to different environments to become distinct varieties with their own characteristics.		types of adaption. **Deep:** Evolution is the only way a species can survive. Do you agree?		
Summer 2 **Body Health** ~ 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.	Diet, exercise, drugs and lifestyle have an impact on the way our bodies function. They can affect how well out heart and lungs work, how likely we are to suffer from conditions such as diabetes, how clearly we think, and generally how fit and well we feel. Some conditions are caused by deficiencies in our diet e.g. lack of vitamins. This content is also included in PSHE. The new statutory requirements for relationships and health education can be found below.	Prenatal, gestation, reproduce, adolescence, puberty, menstruation, adulthood, life expectancy **Year 6: Villi, nutrients, kidneys, liver, drug, alcohol**	**Basic:** Describe a healthy balanced diet. **Advancing:** Explain the possible effects of too much sugar in the diet on how the human body functions. **Deep:** Discover how coronary arteries may become	**Wellbeing – Keeping healthy**	

			blocked and cause heart attacks.		