Castercliff Primary Academy – Year 6 Science Progression.

Curriculum Year 6	**Electricity:** Bulb Brightness	**Animals Including Humans:** Heart Rate	**Light:** Investigating Shadows	**Evolution:** Fossils	**Living Things:** Invertebrate Research	**Animals Including Humans:** Circulatory System
Key Skill	Asking and Answering Questions	Comparative and Fair Testing 	Pattern Seeking 	Observing Over Time 	Identify and Classifying 	Research Using Secondary Resources 
Applied Skills						
Knowledge	•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 buzzers and the on/off position of switches. •Use recognised symbols when	•Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.	•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	•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	•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.	• 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.

	representing a simple circuit in a diagram		lines to explain why shadows have the same shape as the objects that cast them.	different ways and that adaptation may lead to evolution.		
Sticky Knowledge 'Evidencing'	•Can make electric circuits and demonstrate how variation in the working of particular components, such as the brightness of bulbs, can be changed by increasing or decreasing the number of cells or using cells of different voltages •Can draw circuit diagrams of a range of simple series circuits using recognised symbols •Can incorporate a switch into a circuit to turn it on and off •Can change cells and components in a circuit to achieve a specific effect •Can communicate structures of circuits using circuit diagrams with recognised symbols •Can devise ways to measure brightness of bulbs, speed of motors, volume of a buzzer during a fair test •Can predict results and answer questions by drawing on evidence gathered	•Can use subject knowledge about the heart whilst writing conclusions for investigations •Can explain both the positive and negative effects of diet, exercise, drugs and lifestyle on the body •Present information e.g. in a health leaflet describing impact of drugs and lifestyle on the body	•Can describe, with diagrams or models as appropriate, how light travels in straight lines either from sources or reflected from other objects into our eyes •Can describe, with diagrams or models as appropriate, how light travels in straight lines past translucent or opaque objects to form a shadow of the same shape •Can explain how evidence from enquiries shows that light travels in straight lines •Can predict and explain, with diagrams or models as appropriate, how the path of light rays can be directed by reflection to be seen,e.g.the reflection in car rear view mirrors or in a periscope •Can predict and explain, with diagrams or models as appropriate, how the shape of shadows can be varied	•Can explain the process of evolution •Can give examples of how plants and animals are suited to an environment •Can give examples of how an animal or plant has evolved over time e.g. penguin, peppered moth •Give examples of living things that lived millions of years ago and the fossil evidence we have to support this •Can give examples of fossil evidence that can be used to support the theory of evolution •Can identify characteristics that will make a plant or animal suited or not suited to a particular habitat •Can link the patterns seen in the model to real examples •Can explain why the dominant colour of the peppered moth changed over a very short period of time	•Can give examples of animals in the five vertebrate groups and some of the invertebrate groups •Can give the key characteristics of the five vertebrate groups and some invertebrate groups •Can compare the characteristics of animals in different groups •Can give examples of flowering and non-flowering plants •Can use classification materials to identify unknown plants and animals •Can create classification keys for plants and animals •Can give a number of characteristics that explain why an animal belongs to a particular group	• Can draw a diagram of the circulatory system and label the parts and annotate it to show what the parts do •Produces a piece of writing that demonstrates the key knowledge e.g. explanation text, job description of the heart •Use the role play model to explain the main parts of the circulatory system and their role