Science- Substantive Knowledge Map

Unit	Year 6	Vocabulary	Retrieval Opportunities
Animals Including Humans	• 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.	**Internal organs:** heart, lungs, liver, kidney, brain, skeletal, skeleton, muscle, muscular, digest, digestion, digestive, circulatory system, heart, blood vessels, blood **Impact:** diet, exercise, drugs, lifestyle, nutrients, water, damage, drugs, alcohol, substances	Homework activities based upon current topic Selection of resources for children to devise their own experiments e.g. Balance scales, funnels, heart rate monitors, magnifiers, magnets, springs Activities: separating salt/sand and gravel, invertebrate study in Summer months, light and shadows experiment
Living things and their habitats	• Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals. • Give reasons for classifying plants and animals based on specific characteristics.	micro-organisms, plants, animal, classification, classify animals **invertebrates:** insects, spiders, snails, worms **vertebrates:** fish, amphibians, reptiles, birds, mammals **Scientists:** Carl Linnaeus	
Electricity	• 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 representing a simple circuit in a diagram.	volume, brightness, volume, switches, danger, series circuit, working safely with electricity, sign, circuit diagram, switch, bulb, buzzer, motor, recognised symbols	
Light	• Recognise that light travels 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.	light, travels, straight, reflect, light source, object, shadow, mirror, periscope, rainbow, filters.	

	• 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.		
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. • 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.	living things, change, fossils, offspring, vary, not identical, characteristics, variation, evolution, adaption, inherit, inheritance Charles Darwin, Alfred Wallace, adapt, environment, extreme, conditions, advantageous v disadvantageous **Palaeontologists -** Mary Anning	