PATHWAY MAP – Science Year 6					
KEY KNOWLEDGE	**Light** **Travels in straight lines. How light enables us to see. How shadows are formed-shape**	**Electricity** **Brightness of lamp, volume of buzzer, symbols and circuit diagrams**	**Living things and their habitats** **Classifications including microorganisms, plants and animals**	**Evolution and inheritance** **Fossil, offspring different to parents, animal adaptation, evolution**	**Animals including humans** **Human circulatory system, exercise, drugs and lifestyle**
KEY VOCABULARY	Light, travels, straight, reflect, reflection, light, source, object, shadows, mirrors, periscope, rainbow, filters	Voltage, brightness, volume, switches, danger, series, circuit, safety, electrical safety, sign, circuit, diagram, switch, bulb, buzzer, motor, symbols, positive, negative, resistance	Micro-organisms, plants, animal classification, invertebrates, insects, vertebrates, fish, amphibians, reptiles, birds, mammals	Living things, change, fossils, offspring, vary, non-identical, characteristics, variation, Charles Darwin, Mary Anning, Adapt, environment, extreme, conditions, advantages, disadvantages	Internal organs, heart, lungs, liver, kidney, brain, skeletal, skeleton, muscle, muscular, digest, digestion, circulatory system, blood vessels, blood, diet, exercise, drugs, lifestyle, nutrients, water, damage, alcohol, substances
PRE-ASSESSMENT TASK	Children to mind map 'light'. Asses the retaining of knowledge and understanding from Year 3	Children to create a circuit. Asses the retaining of knowledge and understanding from Year 4	Children to put pictures of animals into 2 group – invertebrates and vertebrates and discuss reasons for their choices.	Answer the question 'Why is the (penguin) perfect for (South Pole)?	Initial discussion on how to keep bodies healthy and what could damage a body.
END ASSESSMENT TASK	N/A. Children will compete end of individual units in the topic. GD: Can they explore a range of phenomena including rainbows, colour on soap bubbles, objects looking bent in water and colour?	Children to draw a circuit diagram and test the circuit to ensure it works. GD: Can they make their own traffic-light system or something similar?	Results from a local environment study. GD: Can they find out about the significance of the work of scientists such as Carl Linnaeus?	Choose an animal and create a report to why that animal is perfectly adapted to their environment. GD: Be able to discuss who Charles Darwin and Alfred Wallace developed their ideas on evolution.	Revisit initial discussion notes and add on any learning. GD: Can they make a diagram of the human body and explain how different parts work and depend on one another? GD: Can they explore the work of medical pioneers such as Galen, William Harvey and recognise how much we have learnt about our bodies?
KEY SKILLS	• Recognise that light appears to travel in straight lines • Explain that objects are seen because they give out or reflect light into the eye • Know that light travels from the light source to our eye or to object then eyes • Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them • **Explore ideas, select the best way and give reasons** • **Vary one factor whilst keeping the others the same in an investigation** • **Make a prediction with reasons**	• Associate brightness of lamp/ volume of buzzer with the number and voltage of cells used in the circuit • Compare/give reasons for variations in how components function, including brightness/loudness • Know about on/off position of switches • Use recognised symbols when representing a simple circuit in a diagram • **Explain a scientific idea and what evidence supports it** • **Present a report of findings through writing, diagrams, presentation** • **Record measurements in different ways e.g. bar charts, tables, line graphs** • **Use scientific equipment with increasing accuracy and precision**	• Describe how living things are classified into broad groups according to common observable characteristics based on similarities and differences • Give reasons for classifying plants and animals • **Link what they have found out to other science** • **Find patterns in data**	• Recognise that living things have changed over time • Know that fossils provide information about living things that inhabited earth millions of years ago • Recognise that living things produce offspring of the same kind, but normally they vary and are not identical to parents • Identify how plants/animals adapt to suit their environment • Know that adaptation may lead to evolution	• Identify and name parts of the human circulatory system • Describe functions of the heart, blood vessels and blood • Know about the impact of diet, exercise, drugs and lifestyle on our body and how it functions • Describe how nutrients and water are transported within animals/humans **Use scientific evidence that has been used to support or refute ideas or arguments**
RESOURCES AVAILABLE	Outstanding science- unit 6D	Outstanding science- unit 6E	Outstanding science- unit 6A	Outstanding science- unit 6C	Outstanding science- unit 6B