



Year 3

**Egyptians – Physics (Magnets)**  
 What is a magnet? How does it behave?  
 Group magnetic materials, know that some metals are magnetic and others are not.  
 Attract / Repel **poles, opposite, north, south**  
 How strong is my magnet?  
**How strong is my magnet? (How many paperclips will it hold?)**  
 Use magnets for a purpose  
 Natural magnets and compasses

**STATISTICS: Read, interpret and draw pictograms; Read, interpret and draw bar charts**

**Mayans – Biology (Nutrition)**  
 What animals eat – herbivore / carnivore- classify animals by what they eat (link to teeth)  
 Animals have to eat their food.  
 Food groups? How much do we eat?; Healthy eating  
 Human skeletons (**major bones plus joints, ball and socket, hinge, gliding**) and the function of bones  
 Animal skeletons (**vertebrates and invertebrates, dog, horse, snake, fish**)  
 Teeth and tooth hygiene; animal teeth **canine, molar, incisor**.  
 Explore animal skulls

**Mountains – Physics (Light)**

**SUN DANGER**  
 Know that darkness is the absence of light.  
 How we see things; the eye  
 Light sources  
 Transparent / Translucent / Opaque Shadows  
 Changing the position of a shadow – real life on the playground. Shadows move in the day. Shadows don't have features.  
 Reflection: shiny and reflective  
**Observe the position of a shadow.**

**Americas – Biology (Plants)**  
 Dissect and explore plant parts; **Stamen/Anther/Stigma – for pollen and reproduction**  
**Petals – to attract pollinating insects**  
**Sepal (was the bud) – to hold the unopened flower**  
**Ovary – where seeds are formed; root; stem; trunk; leaves; flower**  
 Observe and explore trees  
 Observe the way water is transported in a plant  
 Plant life cycles - **germinations**  
 Classify Plants

**Factors which affect germination**

**Environment – Physics (Sound)**  
 Sound sources – **vibration**  
 Vibrations can travel through different mediums (**air, water (whales), walls**)  
 How do we hear? (**slinky**)  
 How can we affect the pitch of a sound? – the lonely whale  
 How can we affect the volume?  
 Observe moving away from sound  
 How can we insulate sound?  
**Factors which affect the volume of a sound.** Warp up a rattle)

**STATISTICS: Use scaled bar charts and pictograms with scales in 2, 5 and 10.**  
**Solve one- and two-step problems involving bar charts.**

**Stone Age, Bronze Age, Iron Age - Rocks**  
 Compare and classify rocks  
 Rock types – **metamorphic, igneous, sedimentary**  
 Explain how fossils are formed

**Observe hardness and permeability**

Soils – sieving and soil types **silt, loam, peat, sandy, chalk, clay**  
**Sieve Soils**  
 Know that soils are made from rock and other organic matter.

Year 4

**Volcanoes - Chemistry**  
 Compare and group materials into solids, liquids and gases and their particle formation  
 Understand the water cycle  
 Observe and measure evaporation – puddle on the playground  
 Observe and measure melting (ice and wax)  
**Factors which affect the speed of melting**  
 Observe effect of heating materials  
 Weather and drying washing

**STATISTICS: Explore temperature line graphs**  
**Solve comparison, sum and difference problems from graphs**

**Africa – Physics (Electricity)**  
 Electrical appliances **mains, battery**  
 Circuits and Switches **cell, wire, bulb, buzzer, switch**  
 Identify whether a circuit will work.  
 Know that a switch breaks or completes a circuit  
 Use circuit sketches and then diagrams  
**Factors which affect the brightness of a bulb**  
 Sources of power – **fossil fuels, renewable energy, chemical and their cost**, conductors and insulators.  
 Reducing electricity use  
**Make a burglar alarm for your pencil case**

**Oceans – Biology (Food Chains)**  
 Compare and group living things (**mammals, crustaceans, birds, fish, mollusc, echinoderm**). Vertebrate, invertebrate.  
 Classification keys (**tellin, whelk, starfish, sunstar, spider crab, lobster, edible crab, Sea mouse, sea urchin**)  
 Construct food chains and food webs (**ocean**) **producer, predator, prey**  
 Changing ocean environments; Ocean conservation Marine protected areas

**Romans – Biology (Human)**  
 Digestive system-name and explain the function of parts (**glands, enzymes, salivar, mouth, teeth, tongue, oesophagus, stomach, liver, gall bladder, pancreas, duodenum, intestines, rectum, anus**)  
 How food gets broken down (**food plate recap, nutrition, food energy, practical**).  
**Observe the energy in food.**  
 Moving goodness around the body

**STATISTICS: Make comparisons, find the sum and the difference using tables and charts**

**Local Study – Biology (Habitats)**  
 How local living things are adapted to their habitats  
 Compare our school as a habitat another local habitat  
 Observing bugs  
 I am able to classify and group and describe living things in habitats (**urban, woodland and river**)  
 Local plant classification including **non-flowering plants**  
 Local changing habitats (the development of Oakgrove)

**Bridges – Physics (Forces)**  
 Push, pull, twist and squeeze  
 Compare friction on different surfaces  
**Factors which affect the speed at which a car rolls down a ramp.**  
 Pulleys and levers and gears  
 Know that **gravity** is a pull downwards, balanced by **upthrust** pushing up.  
 Know that some forces act on contact, others at a distance.  
 Observe forces in real life (Caldecotte)  
**STATISTICS: Explore line graphs (data loggers).**  
**Solve comparison, sum and difference problems from line graphs.**

Year 5

**Homes and Settlement - Chemistry**  
 Lab safety  
 Compare and group materials by properties- **solubility, hardness, transparency, conductivity**  
 Describe properties of solids, liquids and gases including that air has mass.  
 Boiling water  
 Thermal insulation and conduction  
**Factors which affect insulating heat / water cooling (making a coat for your mug of tea)**  
 Materials for different purposes

**STATISTICS: Read, draw and interpret line graphs**

**Space – Physics**

**SUN DANGER**  
 The movement of the Earth; day and night  
 The sun and it's apparent movement in the day.  
 Planets, where they are and their movement in orbit  
 The orbit of the moon; Phases of the moon  
 How can we prove the Earth is a sphere (and sun/moon) - development of thinking  
 I understand how a sundial works  
 Know geo-centric and helio-centric views and development of thinking. Ptolemy, Alhazon, Copernicus  
 Know sun link to Stonehenge and Midsummer Boulevard  
 Know the meaning of solstice and equinox

**Scandinavia - Chemistry**  
 Boiling water practice  
 Reversible and irreversible changes  
 Separating by **sieving and filtering**  
 Separating by evaporation  
**Factors which affect evaporation**  
 Know that some changes result in formation of new material eg **burning, rusting, acid + bicarbonate of soda**  
 Spencer Silver

**Greeks – Physics (Forces)**  
 Strength of friction  
 Forces and motion- know that weight is pull down by gravity in **Newtons**, Mass in **kg Newton meters**  
 Air resistance – know that to move through the air, the air has to move out of the way. Compare to water resistance.  
**Factors which affect the strength of air resistance (parachutes)**  
 Gravitational pull – know that unsupported objects fall.

**Rivers – Biology (Life Cycles)**  
 Describe the differences in the life cycles of a mammal (**chimpanzee**), an amphibian (**frog**), an insect (**butterfly**), a bird and a human  
 Describe the life process of reproduction in some plants and animals (**cucumbers**) **Factors which affect germination**  
 Describe the changes as humans develop to old age.  
 David Attenborough and Jane Goodall  
 Explain how fossils give information about evolution (Anning)  
 Recognise the offspring of given species – breeds of dog eg. **Labradoodle**  
 Recognise that offspring vary and are not identical to their parents  
 Explain how a habitat change might lead to an animal adaptation and then to evolution- **arctic fox / giraffe**  
 Charles Darwin, Alfred Wallace

**Vikings – Biology (Microorganisms)**  
 Microorganisms (**decomposer insects, fungi, mould**)  
 Identify and classify common microorganisms (Not in NC) (**viruses, bacteria, mould**)  
 Grow mould; Grow yeast  
**Factors which affect the speed of microorganism growth (mould and yeast)**  
 Bugs and antibiotics – Jenner; Hygiene  
 Identify how microorganisms can be responsible for the spread of disease and recognise how to avoid this (Not in NC) (**colds, covid, viruses**)

Year 6

**The UK - Physics (Light)**  
 Know that light travels in straight lines.  
 How we see – know that light travels from source to eye or source to object to eye.  
 Moving light – angles of reflection and prisms  
 Measuring light / changing shadows – use straight lines to explain why shadows have the same shape as the object which cast them.  
**Factors which affect the size and shape of a shadow**  
 Function of parts of the eye and the brain  
 The electromagnetic spectrum - Hertz

**Climate Change – Chemistry**  
 Dissolving – **solute, solution, substance, suspension**  
**Factors which affect the rate of dissolving**  
 Melting  
 Evaporation  
**Separate a mixture of flour and sugar** by filtering and then evaporating

**STATISTICS: Calculate the mean**

**WW2 – Physics (Electricity)**  
 Making and breaking circuits  
 Resistance – increase and decrease the speed of a motor. Associate this speed with voltage of cells.  
 Series and parallel circuits  
 Current  
**Factors which affect the speed of a motor**  
 Recognise uses for electrical motors: Hairdryers and vacuum cleaners (make vacuum cleaners)  
**STATISTICS: Read, interpret and draw pie charts**

**Earthquakes – Biology (Human)**  
 Name organs and their functions in **muscular, skeletal, reproductive, respiratory systems**  
 Identify and name parts of the circulatory system including blood. Understand how water and nutrients are carried around the body.  
 Exercise and pulse rate and the heart  
**Factors which affect pulse rate**  
 Characteristics of living things  
 Digestion recap  
 Keeping healthy – drugs, diet, exercise and lifestyle.

**Endurance - Chemistry**  
 Getting food groups out of foods