



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