Science Curriculum Overview Year 3

Term	Science Topic	Knowledge and understanding	Scientific Enquiry Skills	What I will know and remember
1	Animals including humans	Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat. Identify that humans and some other animals have skeletons and muscles for support, protection and movement.	Ask relevant questions and use different types of scientific enquiries to answer them. Set up simple practical enquiries, comparative and fair tests. Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Gather, record, classify and present data in a variety of ways to help in answering questions. Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.	I can **group** foods into food groups and **identify** the nutrients that different foods provide.  I can **compare** the nutritional values of different foods by gathering information from food labels.  I can **classify** animal skeletons into groups, discussing patterns and similarities and differences.  I can **fairly test** an idea about how the human skeleton supports movement.  I can **research** how bones and muscles work together to create movement.  I can design and carry out my own investigation. 

Vocabulary

- Food groups and nutrients: fibre, fats (saturated and unsaturated), vitamins, minerals.
- Skeletons and muscles: skeleton, muscles, tendons, joints, protection, support, organs, voluntary muscles, involuntary muscles, biceps, triceps, contract, relax, bone, cartilage, shell, vertebrate, invertebrate, endoskeleton, exoskeleton, hydrostatic skeleton.
- Names of human bones: e.g. skull, spine, backbone, vertebral column, ribcage, pelvis, clavicle, scapula, humerus, ulna, pelvis, radius, femur, tibia, fibula.
- Other: energy.

Previously introduced vocabulary: movement.

End of unit assessment

Working towards | **Working at** | **Working above**

Term	Science Topic	Knowledge and understanding	Scientific Enquiry Skills	What I will know and remember
2	Rocks and soils	Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. Describe in simple terms how fossils are formed when things that have lived are trapped within rock. Recognise that soils are made from rocks and organic matter.	Ask relevant questions and use different types of scientific enquiries to answer them. Set up simple practical enquiries, comparative and fair tests. Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Gather, record, classify and present data in a variety of ways to help in answering questions. Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Use results to draw simple conclusions, make predictions for new values, suggest	I can **classify** different types of rocks.  I can make systematic and careful **observations**.  I can **classify** rocks based on their properties.  I can **research** how fossils are formed.  I can **research** Mary Anning's contribution to palaeontology.

			improvements and raise further questions. Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. *Ogden Trust Resource : Phizzi Earth and Space : Enquiry C - Space Suits*	 I can **observe** how soil is formed.  I can **observe** carefully and systematically.  I can present my findings using scientific vocabulary. 

Vocabulary

- Types of rock: sedimentary rock, igneous rock, metamorphic rock.
- Properties of rocks: permeable, semi-permeable, impermeable, durable.
- Names of rocks: e.g. marble, chalk, granite, sandstone, slate.
- Formation of rocks and fossils: natural, human-made, magma, lava, molten rock, sediment, erosion, fossilisation, layers, bone, fossil.
- Soil: sandy, chalky, clay, peaty, loamy, topsoil, subsoil, bedrock, mineral, organic matter, compost.
- Other: palaeontology.

Previously introduced vocabulary: soil, water, air.

End of unit assessment

Working towards	Working at	Working above

Term	Science Topic	Knowledge and understanding	Scientific Enquiry Skills	What I will know and remember
3	Forces and magnets	Compare how things move on different surfaces. Notice that some forces need contact between two objects, but magnetic forces can act at a distance. Observe how magnets attract or repel each other and attract some materials and not others. Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials. Describe magnets as having two poles. Predict whether two magnets will attract or repel each other, depending on which poles are facing.	Ask relevant questions and use different types of scientific enquiries to answer them. Set up simple practical enquiries, comparative and fair tests. Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Gather, record, classify and present data in a variety of ways to help in answering questions. Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. *Ogden Trust Resource : Phizzi Forces : Enquiry A - Magnetic Materials* *Ogden Trust Resource : Phizzi Forces : Enquiry C - Slippy Shoes* *Ogden Trust Resource : Phizzi Forces : Enquiry D - Making Contact* *Ogden Trust Resource : Phizzi Forces : Enquiry E - Attract/Repel* *Ogden Trust Resource : Phizzi Forces : Enquiry F - Magnetic Strength*	I can **identify** the forces acting on objects.  I can **compare** how a toy car moves over different surfaces.  I can **group** magnetic and non-magnetic materials.  I can **observe** the strength of magnets.  I can **observe** magnetic poles.  I can **fair test** how magnets attract some materials. 

Vocabulary

- How things move: move, movement, surface, distance, strength.
- Types of forces: push, pull, contact force, non-contact force, friction.
- Magnets: magnetic, magnetic field, magnetic force, bar magnet, horseshoe magnet, ring magnet, magnetic poles (north pole, south pole), attract, repel, compass.
- Magnetic and non-magnetic materials: e.g. iron, nickel, cobalt.

Previously introduced vocabulary: metal, names of materials.

End of unit assessment

Working towards | **Working at** | **Working above**

Term	Science Topic	Knowledge and understanding	Scientific Enquiry Skills	What I will know and remember
4	Plants	Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant. Investigate the way in which water is transported within plants. Explore the part that flowers play in the life cycle of flowering	Ask relevant questions and use different types of scientific enquiries to answer them. Set up simple practical enquiries, comparative and fair tests. Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Gather, record, classify and present data in a variety of ways to help in answering questions. Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Use results to draw simple conclusions, make predictions for new values, suggest	I can **identify** the different parts of flowering plants and **research** their jobs.  I can **observe** what plants need to grow well. I can record my observations. I can present the results of my investigation using scientific language.  I can **observe** how water is transported in plants. 

		plants, including pollination, seed formation and seed dispersal.	improvements and raise further questions. Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.	I can **identify** the different parts of a flower and **research** their role in pollination and fertilisation.  I can **observe** and order the stages of the life cycle of a flowering plant. 

Vocabulary

- Water transportation: transport, evaporation, evaporate, nutrients, absorb, anchor.
- Life cycle of flowering plants: pollination (insect/wind), pollen, nectar, pollinator, seed formation, seed dispersal (animal/wind/water), reproduce, fertilisation, fertilise, stamen, anther, filament, carpel (pistil), stigma, style, ovary, ovule, sepal, carbon dioxide.

Previously introduced vocabulary: life cycle.

Working towards | **End of unit assessment**
Working at | **Working above**

Term	Science Topic	Knowledge and understanding	Scientific Enquiry Skills	What I will know and remember
5	Light	Recognise that they need light in order to see things and that dark is the absence of light. Notice that light is reflected from surfaces. Recognise that light from the sun can be dangerous and that there	Ask relevant questions and use different types of scientific enquiries to answer them. Set up simple practical enquiries, comparative and fair tests. Make systematic and careful observations and, where appropriate, take accurate measurements	I can **observe** that I need light to see things, and that dark is the absence of light.  I can **compare** which surfaces reflect light.

		are ways to protect their eyes. Recognise that shadows are formed when the light from a light source is blocked by an opaque object. Find patterns in the way that the size of shadows change.	using standard units, using a range of equipment, including thermometers and data loggers. Gather, record, classify and present data in a variety of ways to help in answering questions. Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. *Ogden Trust Resource : Phizzi Light and Sound : Investigation E - Sun Shadows* *Ogden Trust Resource : Phizzi Light and Sound : Investigation F - Shadow Investigation*	 I can use a mirror to reflect light and **observe** how mirrors work.  I can **research** that light from the sun can be dangerous and that there are ways we can protect our eyes.  I can **fairly test** which materials block light to form shadows.  I can **find patterns** when investigating how shadows change size. 

Vocabulary

- Light and seeing: dark, absence of light, light source, illuminate, visible, shadow, translucent, energy, block.
- Light sources: e.g. candle, torch, fire, lantern, lightning.
- Reflective light: reflect, reflection, surface, ray, scatter, reverse, beam, angle, mirror, moon.
- Sun safety: dangerous, glare, damage, UV light, UV rating, sunglasses, direct.

Previously introduced vocabulary: opaque, transparent, sunlight, sun.

End of unit assessment

Working towards | **Working at** | **Working above**

Term	Science Topic	Knowledge and understanding	Scientific Enquiry Skills	What I will know and remember
6	Scientists and inventors	Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant. Identify that humans have skeletons for support, protection and movement by identifying and explaining the bones shown in x-rays. Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties; describe in simple terms how fossils are formed when things that have lived are trapped within rock. Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. Notice that light is reflected from surfaces. Observe how magnets attract some materials.	Ask relevant questions and use different types of scientific enquiries to answer them. Set up simple practical enquiries, comparative and fair tests. Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Gather, record, classify and present data in a variety of ways to help in answering questions. Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.	I can **research** the way new plants arrived in our country.  I can **research** how Marie Curie's work on x-rays helps us identify bones.  To **research** how George Washington Carver helped farmers to grow crops.  I can **research** how fossils can be used to find the age of rocks.  I can **research** what Inge Lehmann discovered about the Earth's core.  I can **compare** how images change in concave and convex mirrors.  I can **compare** how electromagnets attract some materials.  I can **research** inventions and discoveries from all over the world linked to scientific ideas. 

Vocabulary

Recap of vocabulary covered over the year.

Plant, grow, water, light, air, heat, requirements,
explore, expedition, botanist
Marie Curie, radiation, element, chemistry,
physics, x-ray, bones, support, protection, movement
Agriculture, crops, nutrients, soil, crop rotation
Sedimentary, fossil, strata, geology
Core, seismology, earthquake, magma, molten, liquid, solid
Concave, convex, reflect, image, light, rays
Magnet, field, force, electromagnet, electricity,
circuit, power, battery
Inventor, continent, discovery.

End of unit assessment

Working towards	Working at	Working above