

Year 3 Scheme of Learning: Science

Year 3 – Autumn 2 – Rocks

Lesson 1	
Learning Objective	To compare and describe different types of rocks.
Declarative Knowledge	- Rock is a naturally occurring material. - There are different types of rock e.g. sandstone, limestone, slate etc. which have different properties. - Rocks can be hard or soft. - They have different sizes of grain or crystal.
Procedural Knowledge	Identifying and classifying
Key Vocabulary	Rocks, material, soft, hard, smooth, rough, sharp, pebble, stone, boulder.

Lesson 2	
Learning Objective	To explore how rocks change over time.
Declarative Knowledge	- Rocks can be changed over time. - Water and wind erodes rocks and fragments break off. - Temperature and pressure can also change rocks too.
Procedural Knowledge	Making observations.
Key Vocabulary	Erode, wind, rain, fragment, weathering, sediment.

Lesson 3	
Learning Objective	To investigate the permeability of rocks.
Declarative Knowledge	- Some rocks have spaces between their grains and others do not. - Rocks that allow water through are called permeable. - To identify rocks that are permeable.
Procedural Knowledge	Identifying and classifying.
Key Vocabulary	Permeable, impermeable, grains, bubbles.

Lesson 4	
Learning Objective	To explain Mary Anning's contribution to palaeontology.
Declarative Knowledge	- Mary Anning was a palaeontologist – a scientist who observes and analyses fossils. - Mary used her observations of fossils to find out about long-dead creatures such as dinosaurs. - She could also use the fossils to work out what they looked like, what they ate and other things.
Procedural Knowledge	Secondary sources.
Key Vocabulary	Fossils, palaeontology, dinosaur, theory.

Lesson 5	
Learning Objective	To explain how fossils are formed.
Declarative Knowledge	- Some rocks contain fossils. Fossils were formed millions of years ago. - When plants and animals died, they fell to the seabed. They became covered and squashed by other material. - Over time the dissolving animal and plant matter is replaced by minerals from the water.
Procedural Knowledge	Communicating findings.
Key Vocabulary	Fossils, layers, minerals, palaeontology

Lesson 6	
Learning Objective	To investigate soils.
Declarative Knowledge	- Soils are made up of pieces of ground down rock which may be mixed with plant and animal material (organic matter). - Different soils react in different ways to water.
Procedural Knowledge	Making observations.
Key Vocabulary	Soil, matter, peat, sandy/chalk/clay soil.

Year 3 – Spring 1 – Plants

Lesson 1	
Learning Objective	To identify and describe the parts of flowering plants.
Declarative Knowledge	- Many plants, but not all, have roots, stems/trunks, leaves and flowers/blossom. - The roots absorb water and nutrients from the soil and anchor the plant in place. - The stem transports water and nutrients/minerals around the plant and holds the leaves and flowers up in the air to enhance photosynthesis, pollination and seed dispersal. - The leaves use sunlight and water to produce the plant's food.
Procedural Knowledge	Identifying and classifying.
Key Vocabulary	Plant parts , photosynthesis, absorb, transport, nutrients.

Lesson 2	
Learning Objective	To explore what plants need for life and growth.
Declarative Knowledge	- Different plants require different conditions for germination and growth. - Typically, sunlight, water and space to grow is needed.
Procedural Knowledge	Setting up tests.
Key Vocabulary	Conditions, germination, growth, variables.

Lesson 3	
Learning Objective	To make observations about plant growth. (Continued from lesson 2)
Declarative Knowledge	- Different plants require different conditions for germination and growth. - Typically, sunlight, water and space to grow is needed.
Procedural Knowledge	Making observations.
Key Vocabulary	Conditions, germination, growth, variables.

Lesson 4	
Learning Objective	To investigate how water is transported within plants.
Declarative Knowledge	- The stem transports water and nutrients/minerals around the plant and holds the leaves and flowers up in the air to enhance photosynthesis, pollination and seed dispersal. - To observe the transport of food colouring through the stem to the petals.
Procedural Knowledge	Making observations.
Key Vocabulary	Transport, stem, water.

Lesson 5	
Learning Objective	To describe the different ways that seeds are dispersed.
Declarative Knowledge	- Pollen, which is produced by the male part of the flower, is transferred to the female part of other flowers (pollination). - This forms seeds, sometimes contained in berries or fruits which are then dispersed in different ways. - To understand the 3 main ways that seeds are dispersed.
Procedural Knowledge	Communicating findings.
Key Vocabulary	Dispersal, wind/animal/water dispersal.

Year 3 – Spring 2 – Animals inc. Humans

Lesson 1	
Learning Objective	To understand that animals and humans cannot make their own food.
Declarative Knowledge	- Animals, unlike plants which can make their own food, need to eat in order to get the nutrients they need. - Different animals also have different diets – some eat meat, some eat plants and some eat both. - They get their food in different ways.
Procedural Knowledge	Communicating ideas.
Key Vocabulary	Herbivore, carnivore, omnivore, diet.

Lesson 2	
Learning Objective	To identify that humans need the right types and amount of nutrition.
Declarative Knowledge	- Food contains a range of different nutrients that are needed by the body to stay healthy – carbohydrates including sugars, protein, vitamins, minerals, fibre, fat, sugars, water.
Procedural Knowledge	Identifying and classifying.
Key Vocabulary	Nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water.

Lesson 3	
Learning Objective	To explore the nutritional value of different foods.
Declarative Knowledge	- A piece of food will often provide a range of nutrients. - Humans should eat a balanced diet to stay healthy – this includes a certain amount of each nutrient each day.
Procedural Knowledge	Secondary sources.
Key Vocabulary	Nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water.

Lesson 4	
Learning Objective	To construct and interpret food chains.
Declarative Knowledge	- Living things can be classified as producers, predators and prey according to their place in the food chain.
Procedural Knowledge	Identifying and classifying.
Key Vocabulary	Producer, predator, prey, food chain.

Year 3 – Summer 1 – Forces & Magnets

Lesson 1	
Learning Objective	To understand what a force is (push and pull).
Declarative Knowledge	- A force is a push or a pull. - There are different types of forces within these 2 categories.
Procedural Knowledge	Asking questions.
Key Vocabulary	Force, push, pull.

Lesson 2	
Learning Objective	To compare how different things move on different surfaces.
Declarative Knowledge	- When an object moves on a surface, the texture of the surface and the object affect how it moves. - It may help the object to move better or it may hinder its movement e.g. ice skater compared to walking on ice in normal shoes.
Procedural Knowledge	Making predictions.
Key Vocabulary	Force, push, pull, twist, contact force, friction.

Lesson 3	
Learning Objective	To observe how magnets attract or repel each other.
Declarative Knowledge	- A magnet attracts magnetic material. - The strongest parts of a magnet are the poles. Magnets have two poles – a north pole and a south pole. - If two like poles e.g. two north poles, are brought together they will push away from each other – repel. - If two unlike poles e.g. a north and south, are brought together they will pull together – attract.
Procedural Knowledge	Making observations.
Key Vocabulary	Magnetic force, magnet, strength, bar magnet, poles, north pole, south pole.

Lesson 4	
Learning Objective	To compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet.
Declarative Knowledge	- A magnet attracts magnetic material. - Iron and nickel and other materials containing these e.g. stainless steel, are magnetic.
Procedural Knowledge	Identifying and classifying.
Key Vocabulary	horseshoe magnet, attract, repel, magnetic material, metal, iron, steel.

Year 3 – Summer 2 – Light

Lesson 1	
Learning Objective	To recognise that I need light to see things, and that dark is the absence of light.
Declarative Knowledge	- We see objects because our eyes can sense light. - Dark is the absence of light. - We cannot see anything in complete darkness. - Some objects, for example the sun, light bulbs and candles are sources of light.
Procedural Knowledge	Asking questions.
Key Vocabulary	Light, light source, dark, absence of light.

Lesson 2	
Learning Objective	To investigate which surfaces reflect light.
Declarative Knowledge	- Objects are easier to see if there is more light. Some surfaces reflect light. - Objects are easier to see when there is less light if they are reflective.
Procedural Knowledge	Interpreting and communicating.
Key Vocabulary	Transparent, translucent, opaque, shiny, matte, reflect.

Lesson 3	
Learning Objective	To use a mirror to reflect light and explain how mirrors work.
Declarative Knowledge	- Mirrors reflect light back in the opposite direction. - This is why we see ourselves when we look in the mirror.
Procedural Knowledge	Interpreting and communicating.
Key Vocabulary	Reflect, reflection, mirror.

Lesson 4	
Learning Objective	To investigate which materials block light to form shadows.
Declarative Knowledge	- Shadows are formed on a surface when an opaque or translucent object is between a light source and the surface and blocks some of the light.
Procedural Knowledge	Setting up tests.
Key Vocabulary	Opaque, shadow, block.

Lesson 5	
Learning Objective	To find patterns when investigating how shadows change size.
Declarative Knowledge	- The size of the shadow depends on the position of the source, object and surface.
Procedural Knowledge	Evaluating.
Key Vocabulary	Opaque, shadow, block.

Lesson 6	
Learning Objective	To recognise that light from the sun can be dangerous and that there are ways to protect their eyes.
Declarative Knowledge	- The light from the sun can damage our eyes and therefore we should not look directly at the Sun and can protect our eyes by wearing sunglasses or sunhats in bright light.
Procedural Knowledge	Asking questions.
Key Vocabulary	Sunlight, dangerous, UV.