



Light
Year Group: 3
Term: Autumn 1

How do we see?

What you should already know

- Light sources give us light.
- Examples of light sources are: the Sun, candle, torch, TV.

Investigations

Do the length of shadows change throughout the day?

- Set up a practical test which is **fair**.
- Make careful **observations**.
- Take accurate **measurements**.
- Collect **data** and present the results (data) in a table.
- Use the results to draw a **conclusion** which will answer the question.
- Take photographs with annotations of the findings.
- Make further predictions about how the results might be different in the winter.

New Learning

Lesson 1:

- We need light to see things and dark is the absence of light.
- Everything that we can see is either a light source or something that is reflected light from a light source into our eyes.
- The Sun is a light source.
- The Moon is not a light source but it reflects light from the Sun.
- Light sources give off light and heat.

Lesson 2

- Light is reflected when it travels from a light source and then bounces off an object.

Lessons 3 and 4

- Opaque objects block light creating shadows.
- As objects move towards a light source, the shadow gets bigger.

Lesson 5

- Sunglasses can protect your eyes from sunlight.
- Looking at the Sun directly, even with sunglasses on, can damage your eyes.

Vocabulary

absorption energy reflect
 mirror image
 solid
 opaque transparent
 object source

Diagrams/Pictures





Forces and Magnets

Year Group: 3

Term: Autumn 2



What is a force?

What you should already know

- That you can distinguish between an object and the materials from which it is made.
- That there are a variety of materials – wood, plastic, glass, metal, water and rock.
- That a variety of materials can be grouped together on the basis on their physical properties.

Investigations

Are all materials magnetic?

- Set up a practical test which is **fair**.
- Make careful **observations**.
- Collect **data** and present the results (data) in a table.
- Use the results to draw a **conclusion** which will answer the question.

New Learning

Lesson 1

- A force can be a **push** or a **pull**.



Lesson 2

- There are three types of contact forces – **impact** (when two surfaces collide), **friction** (when two surfaces are already in contact) and **strain** (when elastic is squashed and stretched).
- Objects move differently on rough and smooth surfaces.
- Objects **resist** movement on rough surfaces because there is a higher amount of friction as the object moves.

Lesson 3

- There are non-contact forces – **magnetism** is an example of this.
- Magnets have **two poles – north and south**.
- Like poles (north-north and south-south) **repel** each other.
- Opposite poles **attract**.
- There is a magnetic pole around a magnet which is stronger at the poles.

Lesson 4/5

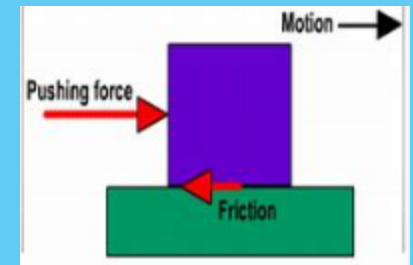
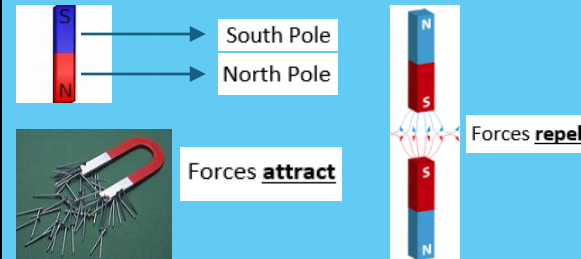
- Some materials are magnetic (they are attracted to the magnet).
- Some materials are non-magnetic.

Vocabulary

magnetic	non-magnetic	pole
north	south	
	elastic	
sliding friction	static	
resist	attraction	repulsion
metal	material	surface
friction	force	
	stretch	

squash rough
smooth

Diagrams/Pictures





Animals Year Group: 3
Term: Spring 1

How do we stay healthy?

What you should already know

- Animals need food, water and air to survive.
- The importance for humans to exercise and eat the right amount of different food types.

Investigations

Do humans bones grow?

- **Compare** the length of the forearms of children in year 3 and year 6 by taking careful **measurements**.
- **Record** data in a table and bar chart to be able to compare the two measurements.
- Use the **data** to answer the question.
- **Ask further questions** from the outcome of the investigation. For example: How much difference would there be in the length of the bones in a toddler compared to an adult?

New Learning

Lesson 1

- Protein is good for growth, carbohydrates for energy and fruit and vegetables provide vitamins and minerals.

Lesson 2

- It is important to get the right amount of each food – a balanced diet.

Lesson 3

- A lack of nutrients can cause ill health, e.g. a lack of vitamin D can cause rickets.

Lesson 4

- Excess fat from fatty foods can build up in the body and lead to obesity.
- Excess body fat can lead to heart disease and increase the strain on joints and growing bones.

Lesson 5/6

- Animals have a skeleton.
- Skeletons provide support for muscles and protect the body.

Vocabulary

energy	growth	nutrients
skeleton	protein	healthy
carbohydrates	obese	muscles
protect	ribcage	rickets
balanced diet	fruit	vegetables

Diagrams/Pictures





Plants
Year Group: 3
Term: Spring 2

Do we need plants?

What you should already know

- A variety of common, wild and garden plants (including deciduous and evergreen).
- That the basic structure of a variety of common flowering plants, including trees.
- That different habitats provide for the basic needs of different kinds of animals and plants and how they depend on each other.
- That seeds and bulbs grow into mature plants.
- Plants need water, light and a suitable temperature to grow and stay healthy.

New Learning

Lesson 1

- Different parts of a plant has different functions.

Lesson 2

- Roots collect water and minerals from the soil and hold the plant firmly to the ground.

Lesson 3

- The stem holds up the leaves to gather light and holds up the flowers to receive pollen and disperse fruit. The stem also transports water and minerals from the roots to the other parts of the plants.

Lesson 4

- Leaves make food by trapping light and using its energy.

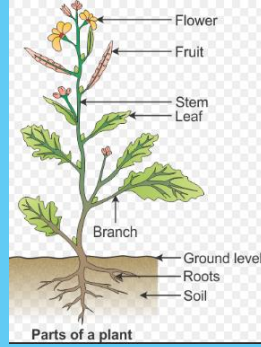
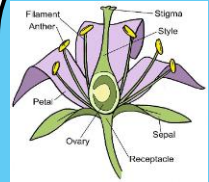
Lesson 5/6

- The function of the flower is reproduction.

Vocabulary

growth	habitat	
nutrients		
reproduction	bulb	
evergreen		
survival	temperature	flower
deciduous	evergreen	fertilization
leaf	plant	tree
roots	stem	fruit
nectar	anther	ovary
ovule	stigma	

Diagrams/Pictures



Investigations

Does the position of a plant affect its growth?

- Compare the growth of plants.
- Make careful observations and measurements using standard units.
- Record measurements in a table.
- Produce drawings of the plants under different conditions.
- Draw simple conclusions and present these in writing.
- Make predictions based on their results about what might happen to plants if it had too much light? Not enough light?



Rocks and Fossils
Year Group: 3
Term: Summer 1

What is the Earth made of?

What you should already know

- Identify different materials which objects are made from.
- Describe physical properties of everyday materials.
- Compare how suitable a variety of everyday materials are, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses

Investigations

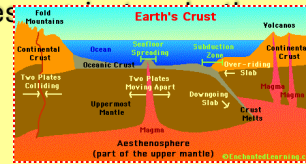
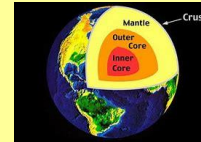
Do rocks have different properties?

- Ask **questions** and use scientific enquiry to answer them.
- Set up **practical enquires** which are **fair**.
- Make careful **observations**.
- Gather **data** in order to answer questions.
- Record findings using **labelled diagrams and tables**.
- Use oral explanations of **results and conclusions**.
- Draw conclusions based on the results.
- **Make predictions** – which rocks would be useful for everyday purposes.

New Learning

Lessons 1 & 2:

- There are three kinds of rocks: igneous, sedimentary and metamorphic.
- Igneous rocks – granite and basalt. These form from molten rock below the Earth's crust.
- Sedimentary rocks – limestone and sandstone. These form when small, weathered fragments of rock or shell settle and stick together (often in layers).
- Metamorphic rock – marble and slate. These are formed when rocks in the Earth's crust get squashed and heated in processes such as when tectonic plates press



Lesson 3:

- The earth has a solid crust made up of tectonic plates with molten rock beneath.

Lessons 4 & 5:

- Fossils form when a plant or animal dies. It is quickly covered in mud so then it cannot be rotted by microbes or eaten by scavenging animals. In time layers of sediment build, squashing the mud and turning it to stone around the dead plant or animal.

Lesson 6:

- Soil is made from tiny particles of rock broken down by the action of the weather.

Vocabulary

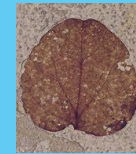
decay matter
 melting
 material **extinction igneous**
sedimentary
paleontologist
weathering molten rock crust
tectonic plates
scavengers

fossil

Diagrams/Pictures



Animal fossil



Plant fossil



Marble



Granite



Basalt



Limestone



Slate