



Light

Year Group: 3

Term: Autumn 1 & 2

How do we see?

What you should already know

- Light sources give us light.
- Examples of light sources are: the Sun, candle, torch, TV.
- Some light sources are man-made and some are natural.

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

- Light is a form of energy.
- Energy comes in different forms and can be neither created nor destroyed – only changed from one form to another.
- We need light to see things and dark is the absence of light.
- Light travels in straight lines.
- Light is reflected when it travels from a light source and then bounces off an object.
- 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.
- Sunglasses can protect your eyes from sunlight.
- Looking at the Sun directly, even with sunglasses on, can damage your eyes.
- Opaque objects block light creating shadows and light can pass through transparent objects.
- As objects move towards a light source, the shadow gets bigger.

Vocabulary

absorption	energy	property
reflection	wave	mirror
image	solid	opaque
transparent	object	source

Diagrams/Pictures





Forces and Magnets
Year Group: 3
Term: Spring 1



What is a force?

What you should already know




- Metal is material from which objects can be made.
- Friction is caused when objects move across a surface.
- When a force is applied to object, its shape can be changed.
- Roughness is a property of a material.

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.

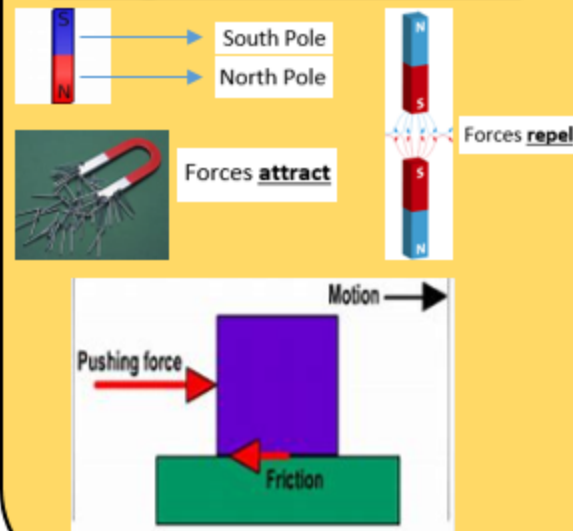
New Learning

- A force can be a **push** or a **pull**.  
- 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.
- 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.
- 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 friction	
resist	attraction	repulsion
metal	material	surface
friction	force	stretch
squash	rough	smooth

Diagrams/Pictures





Rocks and Fossils

Year Group: 3
Term: Spring 2

What is the Earth made of?

What you should already know

- A rock is a type of solid material.
- 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

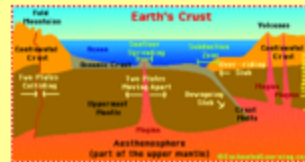
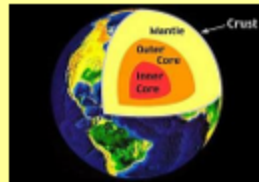
Investigations

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

- There are three kinds of rocks: igneous, sedimentary and metamorphic.
- The earth has a solid crust made up of tectonic plates with molten rock beneath.
- 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 against each other.
- 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.
- 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



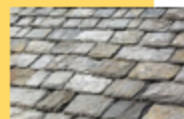
Granite



Basalt



Limestone



Slate



Plants and Animals
Year Group: 3
Term: Summer 1

Do we need plants?

What you should already know

- Evergreen trees keep their leaves throughout the year.
- Deciduous trees shed their leaves in Autumn.
- Flowering plants consist of roots, stem, leaves and flower. A tree's stem is called a trunk.
- Living things move, grow, consume nutrients and reproduce.
- Plants absorb energy from the sun.
- Seeds and bulbs need to be planted underground in soil. They will grow into adult plants under the right conditions.
- Animals need food, water and air to survive.
- All foods can be put into food groups.
- Fatty and sugary foods should be eaten in small amounts.

Investigations

Does the position of a plant affect its growth?

Do human bones grow?

- Ask **questions** and answer them scientifically.
- Set up a **practical enquiry** which is a fair test.
- Make **careful observations** and take accurate measurements.
- Gather and **present data** in a table and bar chart.
- Record findings using **drawings, and tables.**
- Use results to **draw conclusions.**
- Ask further questions based on the results.
- Make further predictions based on the results of the investigation.

New Learning

- Different parts of a plant has different functions.
- Roots collect water and minerals from the soil and hold the plant firmly to the ground.
- 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.
- Leaves make food by trapping light and using its energy.
- The function of the flower is reproduction.
- Protein is good for growth, carbohydrates for energy and fruit and vegetables provide vitamins and minerals.
- It is important to get the right amount of each food group – a balanced diet.
- A lack of nutrients can cause ill health, e.g. a lack of Vitamin D can cause a disease called rickets.
- An excess of a food group can cause ill health e.g. tooth decay due to excess sugar.
- 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.
- Animals have a skeleton.
- Some animals have an exoskeleton – a solid covering on the outside of the body.
- Skeletons provide support for muscles and protect the body.

Vocabulary

energy	growth	habitat	decay
reproduction	offspring	adult	bulb
survival	temperature	nutrients	
flower	deciduous	evergreen	
leaf	plant	tree	roots
extinction	fruit	nectar	anther
ovary	ovule	stigma	stamen
dispersal	fertilization	balanced	
diet			

Diagrams/Pictures

