



# Backworth Park Primary School Long Term Plan Science

	Throughout our EYFS journey		
	Plants and Animals	Changes Over Time	Natural Processes
	Term 1	Term 2	Term 3
EYFS	<p><b>What Makes Me Special?</b></p> <ul style="list-style-type: none"> <li>○ Identifying their family by commenting on photos of their family; naming who they can see and of what relation they are to them.</li> <li>○ Know that children were babies in the past and adults were children.</li> <li>○ Can draw similarities and make comparisons between other families.</li> <li>○ Observe and talk about the natural world around my school yard.</li> </ul>	<p><b>Once upon a time!</b></p> <ul style="list-style-type: none"> <li>○ Describe changes to trees and woodland plants in winter and comparing to other seasons.</li> <li>○ Describe and explain changes of state within water and ice.</li> </ul> <p><b>Roots, shoots and wellie boots</b></p> <ul style="list-style-type: none"> <li>○ Identify similarities and differences between babies and 4 year olds.</li> <li>○ Describe how people change in the first 4 years of life.</li> <li>○ Identify similarities and differences between four year olds and adults.</li> </ul>	<p><b>Out of the world</b></p> <ul style="list-style-type: none"> <li>○ Compare features of the local environment with those of a contrasting environment.</li> <li>○ Describe different planets and talk about their similarities and differences.</li> <li>○ Explore non-fiction texts that offer an insight into contrasting environments.</li> </ul> <p><b>Land Ahoy!</b></p> <ul style="list-style-type: none"> <li>○ Describe changes to trees and woodland plants in summer.</li> <li>○ Articulate similarities and differences with Materials in</li> </ul>



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- Sort objects that we can recycle within the classroom and monitor what we are putting in our bins to support our Eco-School.
- Name vegetables and fruit that can be harvested on a farm.

### **Abracadabra!**

- Talk about the Autumn changes to trees and woodland plants that I observe.
- Know and demonstrate how to plant bulbs, predicting how they may grow.
- Talk about nocturnal animals in our locality – foxes, bats.
- Talk about different ways to stay safe in the dark (reflectors etc)

- Describe changes to trees and woodland plants in spring.
- Know and demonstrate how to grow seeds and care for seedlings.
- Naming the specific parts of plants and where they grow.
- Explain the life cycle of a plant and what they need to grow.
- Begin to develop an understanding of growth, decay, changes over time and how we can protect our plants.
- Sequence the life of a baby chick from hatching to maturity

- water. E.g. Floating, sinking, waterproof
- Make observations of differences between natural objects and features from woodland and coastal areas. Compare traditions observed at the beach in the past and present.
- Name physical features of a beach environment using secondary sources.
- Describe natural and manmade beach detritus and know the dangers to wildlife from man made rubbish.



	<p>○ Describe and explain the change of state with cheese and clay.</p>		
Year 1	 <p>Animals Including Humans – All about me Career Link – George Bracegridle (vet)</p> <ul style="list-style-type: none"><li>● To identify, name, draw and label the basic parts of the human body and say which part is associated with each sense. <i>Discover the basic parts of the human body.</i></li><li>● To identify, name, draw and label the basic parts of the human body and say which part is associated with each sense.</li></ul>	 <p>Materials – Exploring Everyday Materials Career Link – Tara Hipwood architect</p> <ul style="list-style-type: none"><li>● To identify and name a variety of everyday materials. <i>Name materials including glass, metal, wood, plastic, water, rock</i></li><li>● Distinguish between an object and the material it is made from. <i>Build a waterproof structure</i></li><li>● To describe the simple physical properties of everyday materials.</li></ul>	 <p>Plants Career Link – Tom (National Trust gardener)</p> <ul style="list-style-type: none"><li>● To become familiar with the common names of flower and plant structures including seeds. <i>Understand that seeds grow into plants.</i></li><li>● Identify and describe the basic structure of a variety of common flowering plants including trees. <i>Identify the basic parts of plants and trees</i></li></ul>



**Learn about eyes and sight**

- To identify, name, draw and label the basic parts of the human body and say which part is associated with each sense.

**Learn about ears and hearing**

- To identify, name, draw and label the basic parts of the human body and say which part is associated with each sense.

**Explore tongue and taste**

- To identify, name, draw and label the basic parts of the human body and say which part is associated with each sense.

**Explore the sense of touch.**

- Compare and group together a variety of everyday materials.  
**Identify objects that are natural and manmade**
- Compare and group together a variety of everyday materials.  
**Identify objects that will float or sink.**

- To describe the simple physical properties of everyday materials.  
**Explore materials which are best for different objects.**



**Materials – Exploring Everyday Materials Part 2**

**Career Link – Tara Hipwood architect**

- To describe the simple physical properties of everyday materials.

- Identify and name a variety of common garden and wild plants

**Understand that different plants can grow in the same environment.**

- Identify and name a variety of deciduous and evergreen trees  
**Know the difference between a deciduous and evergreen tree.**

- To understand how plants, change over time.  
**Know that trees and vegetables are varieties of plants.**

- To observe the growth of planted flowers.  
**Record the growth of a plant**

**Seasons**

**Career Link – Tom (National Trust gardener)**



- To identify, name, draw and label the basic parts of the human body and say which part is associated with each sense.

Discover how your nose smells.



Animals Including Humans – All about animals

Career Link – George Bracegridle (vet)

- To identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.  
*Animal families*
- To describe and compare the structure of a variety of common animals (fish,

*Building a structure long enough to withstand wind.*

- To compare and group together everyday materials.

*Build a waterproof structure*

- To describe the simple physical properties of everyday materials.

*Understand the properties of glass and its uses.*

- To describe the simple physical properties of everyday materials.

*Understand that materials are used to create a variety of furniture.*

- To compare and group together everyday materials.

*Explore a variety of fabrics and understand their different properties.*

- To understand there are four seasons.
- Understand the changes that take place in Summer
- To investigate how you can measure rainfall.



amphibians, reptiles, birds, mammals pets).

Difference between mammals and birds

- To describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds, mammals pets).

Difference between fish, amphibians and reptiles.

- Identify and name a variety of common animals that are carnivores, herbivores and omnivores.
- To describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds, mammals pets).

- To describe the simple physical properties of everyday materials.

Explain the uses of materials and why they are suitable

### Seasons

- To understand there are four seasons.
- Understand the changes that take place in Spring.
- To investigate how you can measure rainfall.



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	<p>Difference between wild animals and pets</p> <ul style="list-style-type: none"><li>Identify and name a variety of common animals including fish, amphibians, reptiles, mammals and birds</li></ul> <p>Explore the characteristics of an animal.</p> <p>Seasons</p> <ul style="list-style-type: none"><li>To understand there are four seasons.</li><li>Understand the changes that take place in Autumn and Winter.</li><li>To investigate how you can measure rainfall.</li></ul>		
Year 2	 <p>Materials.</p>	 <p>Living Things – Habitats from around the world</p>	 <p>Animals including humans – Life Cycles</p>



Career Link – Maria Carbelleira  
(architect)

- To identify and compare the suitability of materials.  
*Identify different materials and their uses.*
- To identify and compare the suitability of materials.  
*Understand the right materials to build a bridge*
- To find out how the shape of solid objects made from some materials can be changed.  
*Explore and test the stretchiness of materials*
- To find out how the shape of solid objects made from some materials can be changed.  
*Understand that materials can change their shape by*

Career Link –Vivek Nityananda  
(Behavioural Scientist)

- To identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different plants and animals.  
*Learn about habitats.*
- To identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different plants and animals.  
*Appreciate that environments are constantly changing.*
- To identify that most living things live in habitats to which they are suited and describe how different habitats provide

Career Link – Caroline Newsome  
(Police Constable)

- To notice that animals including humans have offspring which grow into adults.  
*Order the stages of the human life cycle.*
- To notice that animals including humans have offspring which grow into adults.  
*Describe the stages of a human life cycle*
- To notice that animals including humans have offspring which grow into adults.  
*Identify the offspring and parent of an animal.*



twisting, bending, squashing or stretching.

- To identify and compare the suitability of materials.

Find out about and explore the work of Charles Macintosh.

- To identify and compare the suitability of materials.

Discover which materials change their shape when making a road with John McAdam.



Living things and their habitats  
Career Link – Vivek Nityananda  
(Behavioural Scientist)

- To identify and compare the difference between things that

for the basic needs of different plants and animals.

Explore the rainforest and its problems

- To identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different plants and animals.

Describe life in the ocean.

- To identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different plants and animals.

Discover the Antarctic and Arctic habitats.

- To identify that most living things live in habitats to which

- To notice that animals including humans have offspring which grow into adults.

Explore the life cycle of a chicken.

- To notice that animals including humans have offspring which grow into adults.

Describe the life cycle of a butterfly

- To notice that animals including humans have offspring which grow into adults.

Explore the life cycle of a frog.



Plants



are living, dead and things that have never been alive.

- To identify and name a variety of plants and animals in their habitats including microhabitats.

Identify and name a variety of plants and animals in a microhabitat.

- To identify and name a variety of plants and animals in their habitats including microhabitats.

Design a microhabitat where living things could survive.

- To describe how animals obtain their food from other plants and animals.

Find out what animals eat to survive in their habitats.

they are suited and describe how different habitats provide for the basic needs of different plants and animals.

Create a model of a habitat.



Animals including humans – Growth  
Career Link – Caroline Newsome  
(Police Constable)

- To find out about and describe the basic needs of animals including humans.

Describe the needs of animals for survival.

- To find out about and describe the basic needs of animals including humans.

Describe the needs of humans for survival.

Career Link – Juliet (National Trust Propagator)

- To observe and describe how seeds and bulbs grow into mature plants.

Know the difference between bulbs and seeds

- To find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.

Design an experiment to find out what plants need to grow.

- To find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.

Describe what plants need to grow and stay healthy.

- To understand the requirements of plants for



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- To describe how animals obtain their food from other plants and animals.  
*Understand a food chain.*
- To identify and name different sources of food.  
*Understand the journey food makes from the farm to supermarket.*

- To describe the importance for humans of exercise, eating the right amounts of different types of foods, and hygiene.  
*Explore the importance of eating the right food.*
- To describe the importance for humans of exercise, eating the right amounts of different types of foods, and hygiene.  
*Describe what a healthy balanced diet looks like.*
- To describe the importance for humans of exercise, eating the right amounts of different types of foods, and hygiene.  
*Investigate the impact of exercise on the human body.*
- To describe the importance for humans of exercise, eating the

- germination, growth and survival, as well as the processes of reproduction and growth in plants.  
*Describe the life cycle of a plant*
- To observe and describe how seeds and bulbs grow into mature plants.  
*Observe and record the growth of plants over time.*
  - To find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.  
*Understand that plants adapt to suit their environment.*



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		<p>right amounts of different types of foods, and hygiene.</p> <p>Investigate the importance of hygiene.</p>	
Year 3	 <p>Animals Including Humans Career Link -Famoosh Farhad (Mechanical engineer)</p> <ul style="list-style-type: none"><li>To identify that animals, including humans, need the right types and amount of nutrition, and they cannot make their own food, they get nutrition from what they eat. Explore the five key food groups</li><li>To identify that animals, including humans, need the right types and amount of</li></ul>	 <p>Forces and magnets Career Link - Bethany Orne (Surfaces Scientist)</p> <ul style="list-style-type: none"><li>To notice that some forces need contact between two objects but magnetic forces can act at a distance. Explore contact and non-contact forces.</li><li>To compare how things move on different surfaces.</li><li>To describe magnets as having two poles. Predict whether magnets will repel or attract</li></ul>	 <p>Plants Career Link - Owen (Arboriculture Officer)</p> <ul style="list-style-type: none"><li>To explore the requirements of plants for life and growth, and how they vary from plant to plant. Compare the effect of different factors on plant growth.</li><li>To identify and describe the functions of different parts of a flowering plant. Identify and describe the functions of different parts of</li></ul>



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nutrition, and they cannot make their own food, they get nutrition from what they eat.

*Learn about the nutrition in food we eat.*

- To identify that humans and some other animals have skeletons and muscles for support, protection and movement.

*Learn about the different types of skeletons*

- To identify that humans and some other animals have skeletons and muscles for support, protection and movement.

*Learn about the human skeleton*

- To identify that humans and some other animals have

depending on the direction of the poles.

*Explore different types of magnets.*

- To compare and group together a variety of materials on the basis of whether they are attracted to a magnet.

*Explore the properties of magnets and objects that are magnetic.*

- To notice that some forces need contact between two objects but magnetic forces can act at a distance.

*Understand that magnetic forces can act at a distance.*

- To describe magnets as having two poles.

*Explore the everyday uses of magnets.*

*flowering plants including photosynthesis.*

- To investigate the ways in which water is transported in plants.
- To explore the part from flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.

*Explore the part that flowers play in the life cycle of a plant.*

- To explore the part from flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.

*Understand the pollination process and the ways in which seeds are dispersed.*



skeletons and muscles for support, protection and movement.

Learn about animals and their skeletons.

- To identify that humans and some other animals have skeletons and muscles for support, protection and movement.

Explore the role of muscles.



### Rocks

Career Link - Leon Walsh  
(Structural Engineer)

- To compare and group together different types of rocks.



### Light

Career Link - Yash Saneshwar  
(Physicist)

- To recognise that they need light in order to see things and that dark is the absence of light.

Identify the difference between light sources and non-light sources.

- To recognise that light from the sun can be dangerous.

Explore that light comes from the sun and how to stay safe.

- To notice that light is reflected from surfaces.

Explore materials which are reflective.

- To explore the requirements of plants for life and growth, and how they vary from plant to plant.

Compare the effect of different factors on plant growth.

### Scientific Enquiry

Career Link - Nic Whitton  
(Professor of Digital Learning)

- To ask relevant questions and use different types of scientific enquiry to answer them  
How can a solar oven be made more effective?
- To make systematic and careful observations, take accurate measurements, use a range of equipment. Record findings using scientific



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Explore the formation and properties of igneous rocks.

- To compare and group together different types of rocks.

Explore the formation and properties of metamorphic and sedimentary.

- To explore how and why rocks change over time.

Weathering and the suitability of rocks for different purposes.

- To compare and group together different types of rocks.

Explore how water contributes to the weathering of rocks.

- To describe in simple terms how fossils are made.

- To recognise that shadows are formed when light from a light source is blocked.

Discover how shadows are formed.

- To find patterns in the way that shadows change.

Investigate how shadows change throughout the day.

- To find patterns in the way that shadows change.

Investigate how you can change the size of a shadow

language, labelled diagrams, keys, charts and tables.

How can a solar oven be made more effective?

- To make systematic and careful observations, take accurate measurements, use a range of equipment. Record findings using scientific language, labelled diagrams, keys, charts and tables.

Cleaning coins

- To identify differences, similarities or changes related to simple scientific ideas and processes. Reporting on findings from enquiries.

Cleaning coins

- To set up a simple practical enquiry, comparative and fair test.



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	<p>Understand how fossils are formed.</p> <ul style="list-style-type: none"><li>To recognise that soils are made from rocks and organic matter.</li></ul> <p>Explore different types of soil.</p>		<p>Making playdough</p> <ul style="list-style-type: none"><li>To use straightforward scientific evidence to answer questions and support their findings.</li></ul> <p>Making playdough</p>
Year 4	 <p>Animals including humans Career Link – Dr Mel Gunn (gastroenterologist)</p> <ul style="list-style-type: none"><li>To describe the simple functions of the basic parts of the digestive system in humans.</li></ul> <p>Identify the organs in the digestive system.</p> <ul style="list-style-type: none"><li>To describe the simple functions of the basic parts</li></ul>	 <p>States of matter Career Link – Antonio Portas (science communicator)</p> <ul style="list-style-type: none"><li>To compare and group materials together according to whether they were solids, liquids or gases.</li></ul> <p>Compare and group the 3 states of matter</p> <ul style="list-style-type: none"><li>To observe that some materials change state depending on</li></ul>	 <p>Living things and their habitats Career Link – Holly East (marine scientist)</p> <ul style="list-style-type: none"><li>To recognise that living things can be grouped in a variety of ways.</li></ul> <p>Explore different habitats</p> <ul style="list-style-type: none"><li>To make a guide to local living things.</li></ul> <p>Research a habitat</p>



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of the digestive system in humans.

Describe the functions of the main organs in the digestive system.

- To describe the simple functions of the basic parts of the digestive system in humans.

Identify the types and functions of human teeth.

- To identify the different types of teeth in humans and their functions.

Investigate the effects of different liquids on teeth

- To construct and interpret a variety of food chains.

Understand food chains

- To construct and interpret a variety of food chains.

whether they are heated or cooled and measure or research the temperature at which this happens.

Explore how particles behave in solids, liquids and gases

- To observe that some materials change state depending on whether they are heated or cooled and measure or research the temperature at which this happens.

Investigate melting points.

- To observe that some materials change state depending on whether they are heated or cooled and measure or research the temperature at which this happens.

Explore freezing and boiling points

- To recognise that living things can be grouped in a variety of ways. Explore and use classification keys.

Explore how animals can be classified

- To explore and use classification keys. Identify and name a variety of living things in their local and wider environment.

Create a classification key

- To explore and use classification keys. Identify and name a variety of living things in their local and wider environment.

Adaptations and classifications with species.

- To explore and use classification keys. Identify and



### Explore food webs



Living things and their habitats –  
Conservation

Career Link – Reese Ronja  
(glaciologist)

- To recognise that environments can change and that this can sometimes pose dangers to living things.  
*Describe ecosystems and how they are affected by changes in seasons.*
- To recognise that environments can change and that this can sometimes pose dangers to living things.

- To identify the part played by evaporation and condensation in the water cycle and that the rate of evaporation is linked to temperature.

*Explore evaporation and condensation*

- To identify the part played by evaporation and condensation in the water cycle and that the rate of evaporation is linked to temperature.

*Understand the water cycle*



Electricity

Career Link – Guillaume Zoppi  
(physicist)

- To identify common appliances that run on electricity.

name a variety of living things in their local and wider environment.

*Explore and classify pond plants*



Sound

Career Link –Matilda (BBC sound engineer)

- To identify how sounds are made associating some of them with something vibrating.  
*Identify how sounds are made*
- To recognise that vibrations from a sound travel through a medium to the ear.  
*Explore how vibrations from sounds travel through a medium to the ear.*



Understand the human impact on the environment through deforestation.

- To recognise that environments can change and that this can sometimes pose dangers to living things.

Explore air pollution

- To recognise that environments can change and that this can sometimes pose dangers to living things.

Understand water pollution

- To recognise that environments can change and that this can sometimes pose dangers to living things.

Explore methods that can be used to conserve water.

- To recognise that environments can change and

Explore electrical appliances and electrical safety.

- To construct a simple series electrical circuit, identifying and naming its basic parts including cells, wires, bulbs, switches and buzzers.

Learn about the electrical components in a series circuit.

- To identify whether a lamp will light or not in a series circuit based on whether the lamp is part of a complete loop with a battery.

Investigate electrical circuit.

- To recognise some common conductors and insulators and associate metals with being good conductors.

Explore conductors and insulators

- To recognise that vibrations from a sound travel through a medium to the ear.

Explore sound insulation

- Find patterns between the volume of a sound and the strength of the vibrations that produced it.

Explore volume

- To find patterns between the pitch of a sound and the features of the objects that produced it.

Explore pitch

- To recognise that sounds get fainter as the distance from the sound source increases.

Explore sounds from near and from far.



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that this can sometimes pose dangers to living things.

Understand that humans can have a positive impact on nature.

- To recognise that a switch opens and closes a circuit and associate this with whether a lamp will light in a series circuit.

Learn about electrical switches

- To identify whether a lamp will light or not in a series circuit based on whether the lamp is part of a complete loop with a battery.

Investigate how electrical components can change within a circuit.



Year  
5



Living things and their habitats  
Career Link – Matteo Sommacal  
(mathematician)

- To describe the processes of reproduction in some plants and animals.  
*Understand the life processes of a plant*
- To describe the differences in life cycles of a mammal, amphibian, insect and bird.  
*Understand the life cycles of mammals*
- To describe the differences in life cycles of a mammal, amphibian, insect and bird.  
*Compare the life cycles of insects and amphibians.*



Properties of materials  
Career Link – Don O'Meara  
(archaeological scientist)

- To compare and group together everyday materials based on their properties.  
*Exploring properties of materials*
- To compare and group together everyday materials based on their properties. Give reasons based on evidence from comparative and fair tests.  
*Explore thermal conductors and thermal insulators*
- To compare and group together everyday materials based on their properties.  
*Explore the hardness of materials*



Forces  
Career Link – Diana Kenny (design engineer)

- To explain that unsupported objects fall to Earth because of gravity.  
*Explore gravity and the work of Isaac Newton*
- To identify the effects of air resistance, water resistance and friction.  
*Examine the connection between air resistance and parachutes.*
- To identify the effects of air resistance, water resistance and friction.  
*Explore factors which effect an objects ability to resist water*



- To describe the differences in life cycles of a mammal, amphibian, insect and bird.

Understand the life cycles of birds and reptiles

- To describe the processes of reproduction in some plants and animals.

Know about the life and work of David Attenborough and Jane Goodall

- To describe the differences in life cycles of a mammal, amphibian, insect and bird.

Research and present the life cycle of a creature



Earth and Space

Career Link – Dr Vicky Fawcett (astrophysicist)

- To know that some materials will dissolve in a liquid to form a solution. Describe how to recover a substance from a solution

Discover materials that become soluble in water

- To know that some materials will dissolve in a liquid to form a solution. Describe how to recover a substance from a solution

Investigate the solubility of materials

- To use knowledge of solids liquids and gases to decide how a mixture might be separated – filtering, sieving, evaporating

Explore how materials can be separated.

- To identify the effects of air resistance, water resistance and friction.

Investigate the effects of friction on different surfaces.

- To recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect.

Investigate mechanisms – levers and pulleys

- To recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect.

Investigate mechanisms – gears



Animals Including Humans



- To describe the sun, Earth and moon as approximately spherical bodies.

Explore the solar system and its planets.

- To describe the movement of the Earth and other planets relative to the sun.

Understand the heliocentric model of the solar system

- To use the idea of Earth's rotation to explain day and night and the apparent movement of the sun across the sky.

Explain the Earth's movement in space

- To use the idea of Earth's rotation to explain day and night and the apparent



### Changes of materials

Career Link – Kelly Kousi (research chemist)

- To describe how to recover a substance from a solution  
Use evaporation to recover a solute from a solution.
- To demonstrate that dissolving, mixing and changes of state are reversible changes  
Recognise and describe reversible changes
- To explain that some changes result in the formation of new materials and that this type of change is not usually reversible.  
Observe chemical reactions and describe how we know new materials are made.

### Career Link – Emmy Arners (social scientist)

- To describe the changes as humans develop to old age.  
Identify the key stages of a mammal's life cycle.
- To describe the changes as humans develop to old age.  
Explore the gestation periods of mammals.
- To describe the changes as humans develop to old age.  
Learn about foetal development
- To describe the changes as humans develop to old age.  
Investigate the hand span of different aged children.
- To describe the changes as humans develop to old age.  
Learn about the changes experienced during puberty.



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movement of the sun across the sky.

Explore the Earth's rotation and day and night

- To describe the movement of the moon relative to the Earth

Explain the movement of the moon

- To describe the Earth, sun and moon as approximately spherical bodies.

Design a planet using knowledge gained.

- To explain that some changes result in the formation of new materials and that this type of change is not usually reversible.

Investigate rust reactions

- To explain that some changes result in the formation of new materials and that this type of change is not usually reversible.

Investigate burning reactions

- To explain that some changes result in the formation of new materials and that this type of change is not usually reversible.

Investigate chemical reactions – acid and bicarbonate of soda.

- To describe the changes as humans develop to old age.

Describe the changes humans may experience in adult hood into old age.



Year  
6



Living Things and their habitats  
Career Link – Dr Dimitrios  
Kaloudis (microbiologist)

- To give reasons for classifying plants and animals.  
*Classify living organisms*
- To give reasons for classifying plants and animals.  
*Understand the kingdoms of life*
- To describe how living things are classified into broad groups according to common observable characteristics.  
*Classify living things using the linnean system*
- To describe how living things are classified into broad



Evolution and Inheritance  
Career Link – Matt Pound  
(palaeontologist)

- To recognise that living things produce offspring of the same kind but that offspring can vary and are not always identical to their parents.  
*Investigate how offspring vary and are not identical to their parents.*
- To investigate how plants and animals are adapted to suit their environment in different ways and that the adaptations may lead to evolution.  
*Learn about animal adaptations*
- To investigate how plants and animals are adapted to suit



Animals including humans  
Career Link – Natalie Shek (clinical support worker)

- To name and identify the main parts of the human circulatory system  
*Understand the functions of the heart and its role in the circulatory system.*
- To name and identify the main parts of the human circulatory system  
*Identify and compare blood vessels*
- To name and identify the main parts of the human circulatory system  
*Explore blood*



groups according to common observable characteristics.

Identify the characteristics of different micro-organisms

- To describe how living things are classified into broad groups according to common observable characteristics.

Investigate asexual reproduction through spore dispersal

- To describe how living things are classified into broad groups according to common observable characteristics.

Classify and describe a living organism



Light

their environment in different ways and that the adaptations may lead to evolution.

Learn about plant adaptations

- To recognise that living things have changed over time and that fossils provide evidence of living things that lived millions of years ago.

Explore what we can learn from fossils

- To recognise that living things have changed over time and that fossils provide evidence of living things that lived millions of years ago.

Explore the theory of evolution

- To recognise that living things have changed over time and that fossils provide evidence of

- To describe the ways in which nutrients and water are transported in humans

Learn how the body transports water and nutrients

- To recognise the impact of diet, drugs, exercise and lifestyle on how their bodies function.

Investigate what affects your heart rate

- To recognise the impact of diet, drugs, exercise and lifestyle on how their bodies function.

Learn about the impacts of drugs and alcohol on the body



Looking after their environment  
Career Link – Leanne Wake  
(geophysicist)



### Career Link – Juna Sathian (physicist)

- To recognise that light appears to travel in a straight line.  
*Explore how light travels*
- To use the idea that light travels in straight lines to explain that objects are seen by giving out or reflecting light into the eye.  
*Explore reflection*
- Explain that we see things because light travels from a light source to our eye or from a light source to an object to our eye  
*Explore reflection and how it can be used to see*
- To use the idea that light travels in a straight line to

living things that lived millions of years ago.

*Explore human evolution*



### Electricity

#### Career Link – Sally Poxon (engineer)

- To use recognised symbols when representing a simple circuit in a diagram.  
*Describe the parts of an electrical circuit.*
- To associate the brightness of a bulb and the volume of a buzzer with the number of cells and amount of voltage in a circuit.  
*Explore voltage and its effect on an electrical circuit*
- To associate the brightness of a bulb and the volume of a

- Recording data and results of increasing scientific complexity, using scientific diagrams and labels, classification keys etc  
*Learn about climate change*
- Reporting and presenting findings from enquiries  
*Explain ways to reduce how much rubbish is sent to landfill.*
- Recording data and results of increasing scientific complexity, using scientific diagrams and labels, classification keys etc  
*Explore ways to reduce energy consumption*
- Reporting and presenting findings from enquiries  
*Explain what happens when fossil fuels are burnt*



## Backworth Park Primary School Long Term Plan Science

explain that shadows have the same shape as the objects that cast them.

Investigate how shadows can change

- To use the idea that light travels in a straight line to explain that shadows have the same shape as the objects that cast them.

Investigate how and why shadows have the same shape as the objects which cast them.

- Explain that we see things because light travels from a light source to our eye or from a light source to an object to our eye
- Investigate how we see objects

buzzer with the number of cells and amount of voltage in a circuit.

Apply knowledge to identify and correct problems in an electrical circuit.

- To compare and give reasons for variations in how components function.

Investigate what effects the output of a circuit

- To compare and give reasons for variations in how components function.

Build a set of traffic lights

- To compare and give reasons for variations in how components function.

Apply knowledge of conductors and insulators.

- Identifying scientific evidence that has been used to support or refute ideas.

Explore the outcomes of COP26

- To use data to make predictions and set up further comparative tests

Compare data associated with the weather.



# Backworth Park Primary School Long Term Plan Science

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Key

National Curriculum Objectives

Developing Experts Lessons

Themes



Animals Including Humans



Living things and their habitats



# Backworth Park Primary School Long Term Plan Science



Materials



Evolution and inheritance



Forces



Plants



Electricity



Light



Sound



Rocks



Earth and space