



Science Progression of Skills

Year Group: 1 Asteroids	
<p>KS1 Aims: The national curriculum for science aims to ensure that all pupils: develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.</p>	
Plants	Animals including Humans
<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> ● Identify and name a variety of common, wild and garden plants including deciduous and evergreen. ● Identify and describe the basic structure of a variety of common flowering plants, including trees 	<ul style="list-style-type: none"> ● Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. ● Identify and name a variety of common animals that are carnivores, herbivores and omnivores. ● Describe and compare the structure of a variety of common animals (birds, fish, amphibians, reptiles and mammals and including pets). ● Identify, name, draw and label the basic parts of the human body and say which parts of the body is associated with each sense.
Everyday Materials	Seasonal Changes
<ul style="list-style-type: none"> ● Distinguish between an object and the material from which it is made. ● Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock. ● Describe the simple physical properties of a variety of everyday materials. ● Compare and group together a variety of everyday materials on the basis of their simple physical properties. 	<ul style="list-style-type: none"> ● Observe changes across the four seasons. ● Observe and describe weather associated with the seasons and how day length varies.



Year Group: 2 Comets

Aims: The national curriculum for science aims to ensure that all pupils: develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

Living things and their habitats

Pupils should be taught to:

- Explore and compare the differences between things that are living, dead and things that have never been alive.
- 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 kinds of animals and plants, and how they depend on each other.
- Identify and name a variety of plants and animals in their habitats, including microhabitats.
- Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.

Plants

Pupils should be taught to:

- Observe and describe how seeds and bulbs grow into mature plants.
- Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.

Animals including Humans

Pupils should be taught to:

- Notice that animals, including humans, have offspring, which grow into adults.
- Find out about and describe the basic needs of animals, including humans, for survival (water, food and air).
- Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.

Use of everyday materials

Pupils should be taught to:

- Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.
- Find out how the shapes of solid objects made from some materials can be changed, by squashing, bending, twisting and stretching.



Year Group: 3 Satellites

Lower KS2 Aims:The principal focus of science teaching in lower key stage 2 is to enable pupils to broaden their scientific view of the world around them. They should do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions. They should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information. They should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out.

Plants	Animals including humans
<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> ● Identify and describe the function of the roots. ● Be able to investigate the ways in which water is transported within the plants. ● Identify and describe the function of leaves. ● Explore the requirements of plants for life and growth (air, light, water, nutrients from soil). ● Identify and describe the function of the flower. 	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> ● 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.
Rocks	Light
<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> ● 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. 	<ul style="list-style-type: none"> ● 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 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.



Forces and magnets

Pupils should be taught to:

- 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.



Year Group: 4 Meteors

Lower KS2 Aims:The principal focus of science teaching in lower key stage 2 is to enable pupils to broaden their scientific view of the world around them. They should do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions. They should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information. They should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out.

Living things and their habitats	Animals, including Humans
<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> ● Explore and compare the differences between things that are living, dead and things that have never been alive. ● 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 kinds of animals and plants, and how they depend on each other. ● Identify and name a variety of plants and animals in their habitats, including microhabitats. ● Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food 	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> ● · Describe the simple functions of the basic parts of the digestive system in humans. ● · Identify the different types of teeth in humans and their simple functions. ● · Construct and interpret a variety of food chains, identifying producers, predators and prey.
Sound	States of Matter
<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> ● Identify how sounds are made, associating some of them with something vibrating. ● Recognise that vibrations from sounds travel through a medium to the ear. ● Find patterns between the pitch of a sound and features of the object that produced it. ● Find patterns between the volume of a sound and the strength of the vibrations that produced it. ● Recognise that sounds get fainter as the distance from the sound 	<p>Pupils should be taught to:</p> <p>Compare and group materials together, according to whether they are solids, liquids or gases.</p> <ul style="list-style-type: none"> ● Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this



<p>source increases.</p>	<p>happens in degrees Celsius (°C).</p> <ul style="list-style-type: none">• Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature
Electricity	
<p>Pupils should be taught to:</p> <ul style="list-style-type: none">• Identify common appliances that run on electricity.• Construct a simple series electrical circuit, identifying and naming its basic parts, including cells,wires, bulbs, switches and buzzers.• Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery.• Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.	



Year Group: 5 Planets

Upper KS2 Aims:The principal focus of science teaching in upper key stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They should do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. At upper key stage 2, they should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They should also begin to recognise that scientific ideas change and develop over time. They should select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information. Pupils should draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings.

Living things and their habitats	Animals, including Humans
<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> • Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. • Describe the life process of reproduction in some plants and animals. 	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> • Describe the changes as humans develop to old age
<ul style="list-style-type: none"> • Properties and changes of materials 	<ul style="list-style-type: none"> • Earth and Space
<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> • Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. • Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. • Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. • Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and 	<p>Pupils should be taught to :</p> <ul style="list-style-type: none"> • Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.



plastic.

- Demonstrate that dissolving, mixing and changes of state are reversible changes.
- Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda

Forces

Pupils should be taught to :

- Identify the effects of air resistance, water resistance and friction, that act between moving surfaces.
- Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.



Year Group: 6 Stars and Astronomers

Aims: Upper KS2 Aims: The principal focus of science teaching in upper key stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They should do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. At upper key stage 2, they should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They should also begin to recognise that scientific ideas change and develop over time. They should select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information. Pupils should draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings.

Light	Electricity
<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> Recognise that light appears to travel in straight lines. Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye. Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. 	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches. <p>Use recognised symbols when representing a simple circuit in a diagram.</p>
Evolution and inheritance	Animals including Humans
<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. <p>Identify how animals and plants are adapted to suit their environment in different</p>	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. Describe ways in which nutrients and water are transported within



ways and that adaptation may lead to evolution.	animals, including humans.
Living things and their habitat	
<p>Pupils should be taught to:</p> <ul style="list-style-type: none">• Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals.• Give reasons for classifying plants and animals based on specific characteristics.	