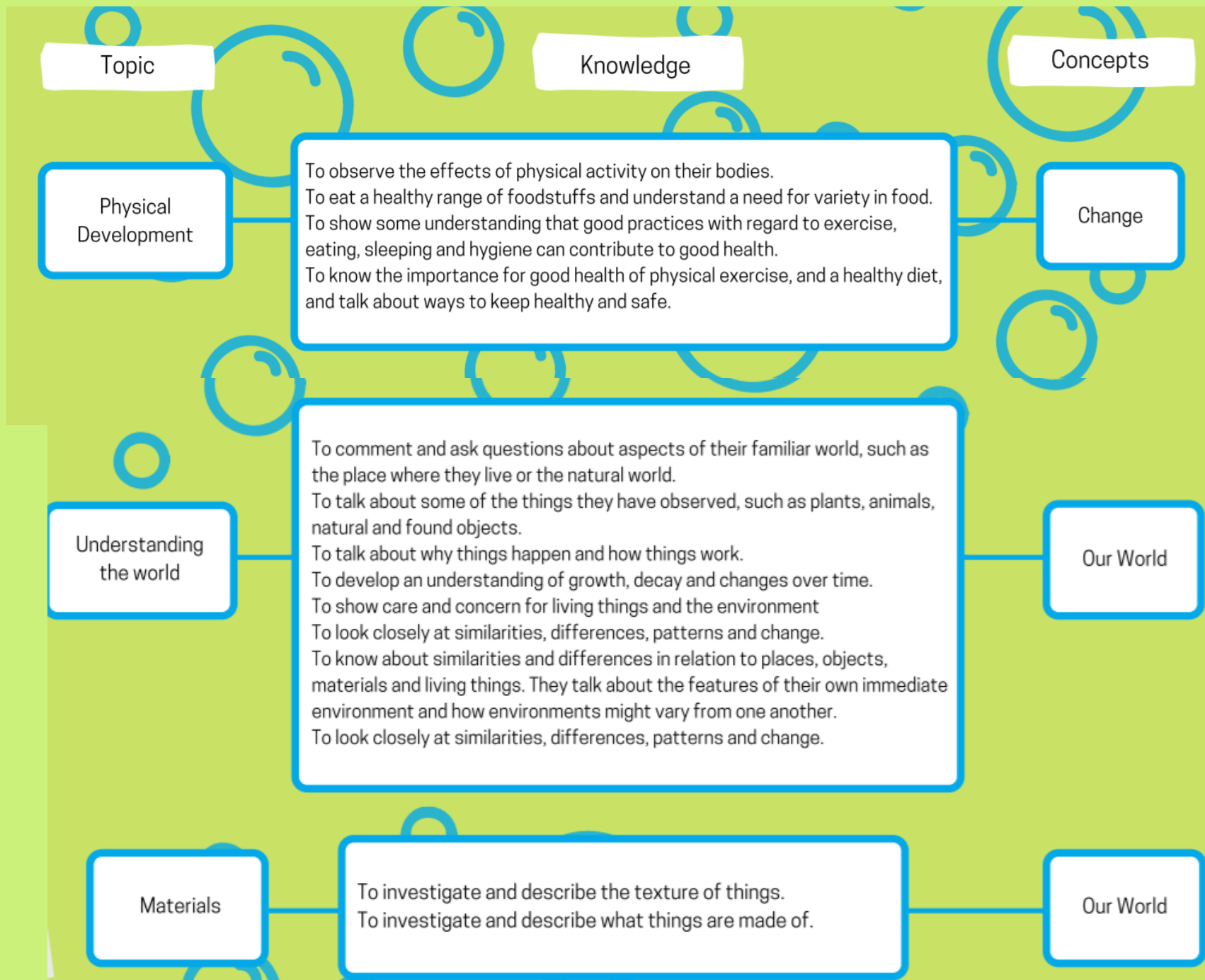




**EYFS**



# Year 1

I am a Scientist!  
Year 1 and 2  
Skills

- asking simple questions and recognising that they can be answered in different ways
- observing closely, using simple equipment
- performing simple tests
- identifying and classifying
- using their observations and ideas to suggest answers to questions
- gathering and recording data to help in answering questions



## Topic

## Knowledge

## Prior Learning

## Future Learning

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 (fish, amphibians, reptiles, birds and mammals, including pets).  
Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.

Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur and talk about changes. (Early Learning Goal)

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. (Y2 - Living things and their habitats)  
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. (Y6 - Living things and their habitats)  
Give reasons for classifying plants and animals based on specific characteristics. (Y6 - Living things and their habitats)

### Everyday materials

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.

Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur and talk about changes. (Early Learning Goal)

Observe and describe how seeds and bulbs grow into mature plants. (Y2 - Plants)  
Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. (Y2 - Plants)  
Identify and name a variety of plants and animals in their habitats, including microhabitats. (Y2 - Living things and their habitats)  
Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. (Y3 - Plants)  
Investigate the way in which water is transported within plants. (Y3 Plants)

### Plants

Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.  
Identify and describe the basic structure of a variety of common flowering plants, including trees.

Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur and talk about changes. (Early Learning Goal)

Observe and describe how seeds and bulbs grow into mature plants. (Y2 - Plants)  
Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. (Y2 - Plants)  
Identify and name a variety of plants and animals in their habitats, including microhabitats. (Y2 - Living things and their habitats)  
Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. (Y3 - Plants)  
Investigate the way in which water is transported within plants. (Y3 Plants)

### Seasonal Changes

Observe changes across the four seasons.  
Observe and describe weather associated with the seasons and how day length varies.

Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur and talk about changes. (Early Learning Goal)

Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. (Y3 - Light)  
Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky. (Y5 - Earth and space)  
The seasons and the Earth's tilt, day length at different times of year, in different hemispheres. (KS3)



# Year 2

I am a Scientist!  
Year 1 and 2  
Skills

- asking simple questions and recognising that they can be answered in different ways
- observing closely, using simple equipment
- performing simple tests
- identifying and classifying
- using their observations and ideas
- to suggest answers to questions
- gathering and recording data to help in answering questions

## Topic

## Knowledge

## Prior Learning

## Future Learning

### Living things and their habitats

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 micro-habitats  
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

Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. (Y1 - Plants)  
Identify and describe the basic structure of a variety of common flowering plants, including trees. (Y1 - Plants)  
Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. (Y1 - Animals including humans)  
Identify and name a variety of common animals that are carnivores, herbivores and omnivores. (Y1 - Animals including humans)  
Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). (Y1 - Animals, including humans)  
Observe changes across the four seasons. (Y1 - Seasonal changes)

Recognise that living things can be grouped in a variety of ways. (Y4 - Living things and their habitats)  
Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. (Y4 - Living things and their habitats)  
Recognise that environments can change and that this can sometimes pose dangers to living things. (Y4 - Living things and their habitats)  
Construct and interpret a variety of food chains, identifying producers, predators and prey. (Y4 - Animals, including humans)

### Uses of everyday materials

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.

Distinguish between an object and the material from which it is made. (Y1 - Everyday materials)  
Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. (Y1 - Everyday materials)  
Describe the simple physical properties of a variety of everyday materials. (Y1 - Everyday materials)  
Compare and group together a variety of everyday materials on the basis of their simple physical properties. (Y1 - Everyday materials)

Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. (Y3 - Rocks)  
Notice that some forces need contact between two objects, but magnetic forces can act at a distance. (Y3 - Forces and magnets)  
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. (Y5 - Properties and changes of materials)  
Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. (Y5 - Properties and changes of materials)

# Year 2

Topic	Knowledge	Prior Learning	Future Learning
Plants	<p>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.</p>	<p>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. (Y1 - Plants)</p> <p>Identify and describe the basic structure of a variety of common flowering plants, including trees. (Y1 - Plants)</p>	<p>Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. (Y3 - Plants)</p> <p>Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant. (Y3 - Plants)</p> <p>Investigate the way in which water is transported within plants. (Y3 - Plants)</p> <p>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. (Y3 - Plants)</p>
Animals, including humans	<p>Notice that animals, including humans, have offspring which grow into adults.</p> <p>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air).</p> <p>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</p>	<p>Identify and name a variety of common animals that are carnivores, herbivores and omnivores. (Y1 - Animals, including humans)</p> <p>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. (Y1 - Animals, including humans)</p>	<p>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. (Y3 - Animals, including humans)</p> <p>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. (Y5 - Living things and their habitats)</p> <p>Describe the life process of reproduction in some plants and animals. (Y5 - Living things and their habitats)</p> <p>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. (Y6 - Animals, including humans)</p>



# Year 3

I am a Scientist!

Year 3 and 4 Skills

- I can ask relevant questions and using different types of scientific enquiries to answer
- I can set up simple practical enquiries, comparative and fair tests.
- I can make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
- I can gather, record, classify and present data in a variety of ways to help in answering
- I can record findings using simple scientific language, drawings, labelled diagrams, keys,
- I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
- I can identify differences, similarities or changes related to simple scientific ideas
- I can use straightforward scientific evidence to answer questions or to support their findings

Topic

Knowledge

Prior Learning

Future Learning

Animals,  
including  
humans

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.

Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. (Y1 - Animals, including humans)  
Identify and name a variety of common animals that are carnivores, herbivores and omnivores. (Y1 - Animals, including humans)  
Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). (Y1 - Animals, including humans)  
Find out about and describe the basic needs of animals, including humans, for survival (water, food and air). (Y2 - Animals, including humans)  
Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. (Y2 - Animals, including humans)

Describe the simple functions of the basic parts of the digestive system in humans. (Y4 - Animals, including humans)

Identify the different types of teeth in humans and their simple functions. (Y4 - Animals, including humans)

Construct and interpret a variety of food chains, identifying producers, predators and prey. (Y4 - Animals, including humans)

Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. (Y6 - Animals, including humans)

## Forces and magnets

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.

Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. (Y2 - Uses of everyday materials)

Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. (Y5 - Forces)  
Identify the effects of air resistance, water resistance and friction, that act between moving surfaces. (Y5 - Forces)  
Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. (Y5 - Forces)  
Magnetic fields by plotting with compass, representation by field lines. (KS3)  
Earth's magnetism, compass and navigation. (KS3)

## Plants

Identify and describe the functions of different parts of flowering plants: roots; stem/trunk; leaves; and flowers.  
Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant.  
Investigate the way in which water is transported within plants.  
Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.

Observe and describe how seeds and bulbs grow into mature plants. (Y2 - Plants)  
Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. (Y2 - Plants)

Describe the life process of reproduction in some plants and animals. (Y5 - Living things and their habitats)  
Reproduction in plants, including flower structure, wind and insect pollination, fertilisation, seed and fruit formation and dispersal, including quantitative investigation of some dispersal mechanisms. (KS3)

## Light

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.

Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. (Y1 - Animals, including humans)  
Describe the simple physical properties of a variety of everyday materials. (Y1 - Materials)

Recognise that light appears to travel in straight lines. (Y6 - Light)  
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. (Y6 - Light)  
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. (Y6 - Light)  
Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. (Y6 - Light)

## Year 3

### Rocks

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.

Distinguish between an object and the material from which it is made. (Y1 - Everyday materials)

Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. (Y1 - Everyday materials)

Describe the simple physical properties of a variety of everyday materials. (Y1 - Everyday materials)

Compare and group together a variety of everyday materials on the basis of their simple physical properties. (Y1 - Everyday materials)

Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. (Y2 - Uses of everyday materials)

Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. (Y6 - Evolution and inheritance)

The composition of the Earth. (KS3)

The structure of the Earth. (KS3)

The rock cycle and the formation of igneous, sedimentary and metamorphic rocks. (KS3)

# Year 4

## I am a Scientist! Year 3 and 4 Skills

- I can ask relevant questions and using different types of scientific enquiries to answer them.
- I can set up simple practical enquiries, comparative and fair tests.
- I can make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
- I can gather, record, classify and present data in a variety of ways to help in answering questions
- I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
- I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
- I can identify differences, similarities or changes related to simple scientific ideas and processes.
- I can use straightforward scientific evidence to answer questions or to support their findings.

### Topic

### Knowledge

### Prior Learning

### Future Learning

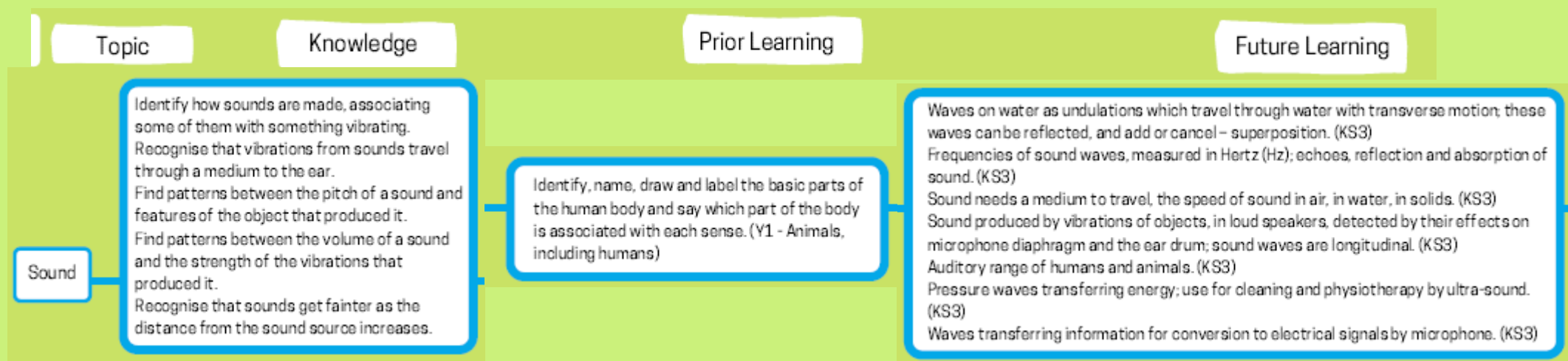
Animals,  
including  
humans

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.

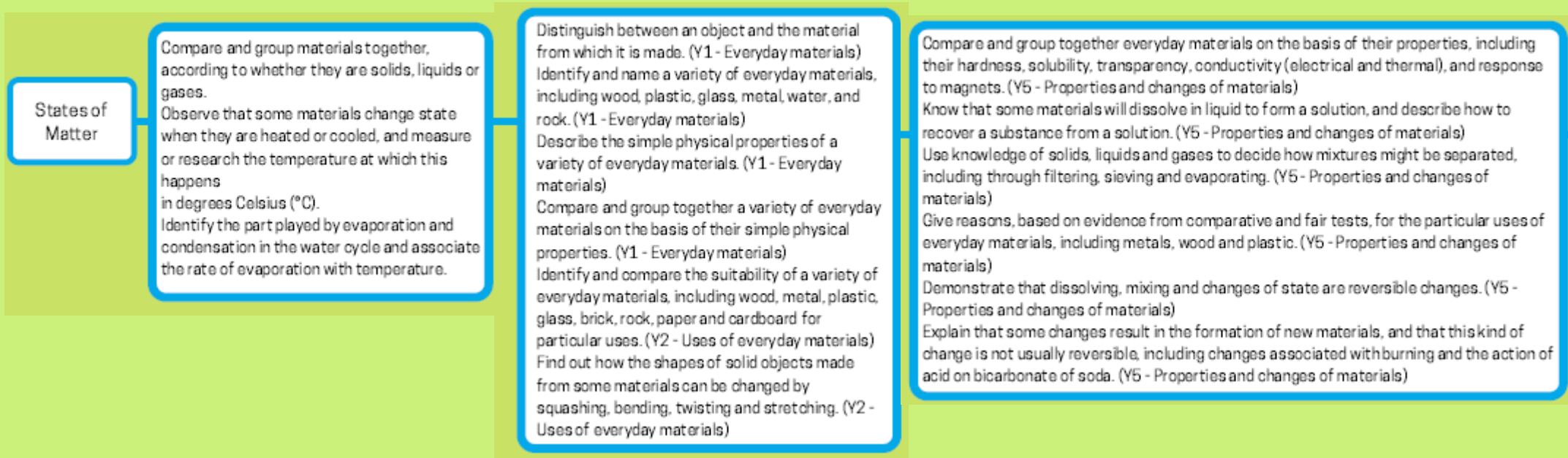
Identify and name a variety of common animals that are carnivores, herbivores and omnivores. (Y1 - Animals, including humans)  
Find out about and describe the basic needs of animals, including humans, for survival (water, food and air). (Y2 - Animals, including humans)  
Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. (Y2 - Animals, including humans)  
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. (Y3 - Animals, including humans)

Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. (Y6 - Animals, including humans)  
Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. (Y6 - Animals, including humans)  
Describe the ways in which nutrients and water are transported within animals, including humans. (Y6 - Animals, including humans)





## Year 4



Topic	Knowledge	Prior Learning	Future Learning
Living Things and their habitats	<p>Recognise that living things can be grouped in a variety of ways. Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.</p> <p>Recognise that environments can change and that this can sometimes pose dangers to living things.</p>	<p>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. (Y1 - Plants)</p> <p>Identify and describe the basic structure of a variety of common flowering plants, including trees. (Y1 - Plants)</p> <p>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. (Y1 - Animals including humans)</p> <p>Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). (Y1 - Animals, including humans)</p> <p>Identify and name a variety of plants and animals in their habitats, including microhabitats. (Y2 - Living things and their habitats)</p>	<p>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. (Y5 - Living things and their habitats)</p> <p>Describe the life process of reproduction in some plants and animals. (Y5 - Living things and their habitats)</p> <p>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. (Y6 - Living things and their habitats)</p> <p>Give reasons for classifying plants and animals based on specific characteristics. (Y6 - Living things and their habitats)</p>

**Year 4**

# Year 5

## I am a Scientist! Year 5 and 6 Skills

- Children plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.
- Children take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.
- Children record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.
- Children use test results to make predictions to set up further comparative and fair tests.
- Children report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations identifying scientific evidence that has been used to support or refute ideas or arguments
- Children raise different kinds of questions and identify the scientific skills they are using.

### Topic

### Knowledge

### Prior Learning

### Future Learning

#### Earth and Space

Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.  
Describe the movement of the Moon relative to the Earth.  
Describe the Sun, Earth and Moon as approximately spherical bodies.  
Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky.

Observe changes across the four seasons. (Y1 - Seasonal changes)  
Observe and describe weather associated with the seasons and how day length varies. (Y1 - Seasonal changes)

Gravity force, weight = mass x gravitational field strength (g), on Earth  $g=10\text{ N/kg}$ , different on other planets and stars; gravity forces between Earth and Moon, and between Earth and Sun (qualitative only). (KS3)  
Our Sun as a star, other stars in our galaxy, other galaxies. (KS3)  
The seasons and the Earth's tilt, day length at different times of year, in different hemispheres. (KS3)  
The light year as a unit of astronomical distance. (KS3)

#### Living Things and their habitats

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.

Notice that animals, including humans, have offspring which grow into adults. (Y2 - Animals, including humans)  
Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. (Y3 - Plants)

Reproduction in humans (as an example of a mammal), including the structure and function of the male and female reproductive systems, menstrual cycle (without details of hormones), gametes, fertilisation, gestation and birth, to include the effect of maternal lifestyle on the foetus through the placenta. (KS3)  
Reproduction in plants, including flower structure, wind and insect pollination, fertilisation, seed and fruit formation and dispersal, including quantitative investigation of some dispersal mechanisms. (KS3)

## Forces

Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. 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.

Compare how things move on different surfaces. (Y3 - Forces and magnets)  
Notice that some forces need contact between two objects, but magnet forces can act at a distance. (Y3 - Forces and magnets)  
Observe how magnets attract or repel each other and attract some materials and not others. (Y3 - Forces and magnets)  
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. (Y3 - Forces and magnets)  
Describe magnets as having two poles. (Y3 - Forces and magnets)  
Predict whether two magnets will attract or repel each other, depending on which poles are facing. (Y3 - Forces and magnets)

Forces as pushes or pulls, arising from the interaction between two objects. (KS3)  
Using force arrows in diagrams, adding forces in one dimension, balanced and unbalanced forces. (KS3)  
Moment as the turning effect of a force. (KS3)  
Forces: associated with deforming objects; stretching and squashing – springs; with rubbing and friction between surfaces, with pushing things out of the way; resistance to motion of air and water. (KS3)  
Forces measured in Newtons, measurements of stretch or compression as force is changed. (KS3)

## Properties and changes of materials

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 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.

Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. (Y2 - Uses of everyday materials)  
Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. (Y2 - Uses of everyday materials)  
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. (Y3 - Forces and magnets)  
Compare and group materials together, according to whether they are solids, liquids or gases. (Y4 - States of matter)  
Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C). (Y4 - States of matter)  
Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. (Y4 - States of matter)

Chemical reactions as the rearrangement of atoms. (KS3)  
Representing chemical reactions using formulae and using equations. (KS3)  
Combustion, thermal decomposition, oxidation and displacement reactions. (KS3)  
Defining acids and alkalis in terms of neutralisation reactions. (KS3)  
The pH scale for measuring acidity/alkalinity; and indicators. (KS3)

# Year 5

## Animals, including humans

Describe the changes as humans develop to old age.

Notice that animals, including humans, have offspring which grow into adults. (Y2 - Animals, including humans)

Reproduction in humans (as an example of a mammal), including the structure and function of the male and female reproductive systems, menstrual cycle (without details of hormones), gametes, fertilisation, gestation and birth, to include the effect of maternal lifestyle on the foetus through the placenta. (KS3)



# Year 6

## I am a Scientist! Year 5 and 6 Skills

- Children plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
- Children take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when Children record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line
- Children use test results to make predictions to set up further comparative and fair tests.
- Children report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations identifying scientific evidence that has been used to support or refute ideas or arguments
- Children raise different kinds of questions and identify the scientific skills they are using.

Topic

Knowledge

Prior Learning

Future Learning

Animals  
including  
humans

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 the ways in which nutrients and water are transported within animals, including humans

Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. (Y2 - Animals, including humans)  
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. (Y3 - Animals, including humans)  
Describe the simple functions of the basic parts of the digestive system in humans. (Y4 - Animals, including humans)  
Identify the different types of teeth in humans and their simple functions. (Y4 - Animals, including humans)

The consequences of imbalances in the diet, including obesity, starvation and deficiency diseases. (KS3)  
The effects of recreational drugs (including substance misuse) on behaviour, health and life processes. (KS3)  
The structure and functions of the gas exchange system in humans, including adaptations to function. (KS3)  
The mechanism of breathing to move air in and out of the lungs. (KS3)  
The impact of exercise, asthma and smoking on the human gas exchangesystem. (KS3)

## Topic

## Knowledge

## Prior Learning

## Future Learning

# Year 6

### Electricity

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  
Use recognised symbols when representing a simple circuit in a diagram

Identify common appliances that run on electricity. (Y4 - Electricity)  
Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. (Y4 - Electricity)  
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. (Y4 - Electricity)  
Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. (Y4 - Electricity)  
Recognise some common conductors and insulators, and associate metals with being good conductors. (Y4 - Electricity)

Electric current, measured in amperes, in circuits, series and parallel circuits, currents add where branches meet and current as flow of charge. (KS3)  
Potential difference, measured in volts, battery and bulb ratings; resistance, measured in ohms, as the ratio of potential difference (p.d.) to current. (KS3)  
Differences in resistance between conducting and insulating components (quantitative). (KS3)  
Static electricity. (KS3)

### Evolution and inheritance

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  
Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution

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. (Y2 - Living things and their habitats)  
Notice that animals, including humans, have offspring which grow into adults. (Y2 - Animals, including humans)  
Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. (Y3 - Plants)  
Describe in simple terms how fossils are formed when things that have lived are trapped within rock. (Y3 - Rocks)  
Recognise that environments can change and that this can sometimes pose dangers to living things. (Y4 - Living things and their habitats) Describe the life process of reproduction in some plants and animals. (Living things and their habitats - Y5)

Heredity as the process by which genetic information is transmitted from one generation to the next. (KS3)  
A simple model of chromosomes, genes and DNA in heredity, including the part played by Watson, Crick, Wilkins and Franklin in the development of the DNA model. (KS3)  
The variation between species and between individuals of the same species means some organisms compete more successfully, which can drive natural selection. (KS3)  
Changes in the environment may leave individuals within a species, and some entire species, less well adapted to compete successfully and reproduce, which in turn may lead to extinction. (KS3)

### Living things and their habitats

Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals  
Give reasons for classifying plants and animals based on specific characteristics

Recognise that living things can be grouped in a variety of ways. (Y4 - Living things and their habitats)  
Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. (Y4 - Living things and their habitats)  
Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. (Y5 - Living things and their habitats)  
Describe the life process of reproduction in some plants and animals. (Y5 - Living things and their habitats)

Differences between species (KS3)