Progression Document Science by Topic 2023-2024

Year 1 – Year 6

Plants – Year 1 and 2

YEAR 1
Identify and name a variety of common plants, including garden plants, wild plants and trees and those classified as deciduous and evergreen.

Basic	Advanced	Deep
What are the names of some common wild plants? What are the names of some common garden plants? What are the names of some common trees? Which trees are evergreen and which are deciduous? (name)	What are the similarities and differences between deciduous and evergreen trees? Think of some ways to categorise plants.	Suggest a garden design for someone who likes privacy and bright autumn colours.

YEAR 1
Identify and describe the basic structure of a variety of common flowering plants, including roots, stem/trunk, leaves and flowers.

Basic	Advanced	Deep
What are the names of parts of flowering plants? Describe the structure (names) of each part of a flowering plant.	Taking a selection of (real) different flowering plants, what are the structural features? (apply)	Are roots always at the bottom of plants? (generalise)Why do you think that is? (explain concept)

YEAR 2
Observe and describe how seeds and bulbs grow into mature plants.

Basic	Advanced	Deep
Describe the growth of seeds and bulbs.	What are the similarities and differences in the growth of seeds and bulbs?	What might a scientist need to keep in mind when recording information about the growth of seeds and bulbs? (propose)

YEAR 2
Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.

Basic	Advanced	Deep
What do plants need to stay healthy? (describe, list)	How could you try to revive these plants? (apply) (Give pupils a dried out plant, one that's been in the fridge one that's been kept in the dark etc.)	Devise a way of proving that plants need certain conditions for growth.

Plants Year 3 and 4

YEAR 3 and YEAR 4 **Identify and describe the functions of different parts of flowering plants: roots, stem, leaves and flowers.**		
Basic – Year 3	Advanced – Year 4	Deep – Year 4
Describe and illustrate the functions of different parts of flowering plants.	Explain how leaves are important in creating food for a plant.	Prove or disprove that roots act like straws sucking up water for the plant.
YEAR 3 **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.**		
Basic	Advanced	Deep
Grow, observe and record the growth of a range of different plants.	Compare and contrast the conditions for growth for a range of different plants. Explain why these differences may exist.	Create a planting plan for a 1 metre square bed of flowers that will look its best three years from planting. Justify your choice of plants.
YEAR 3 **Investigate the way in which water is transported within plants.**		
Basic	Advanced	Deep
Observe (or read about) and answer questions about how water is transported in plants.	Experiment with food colouring to demonstrate how water is transported through a plant. Explain the experiment and summarise your observations. Compare and contrast your observations with those of others.	Can you change the colour of celery? Prove it and draw some scientific conclusions.
YEAR 3 **Explore the role of flowers in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.**		
Basic	Advanced	Deep
Label the parts of a flower. Describe the process of pollination. List ways in which plants are pollinated. Describe how seeds are formed. List ways in which seeds are dispersed.	Using a range of (real) flowering plants, locate and name the parts of a flower. (apply) Compare different flowers and explain the differences in the size and shape of the parts of a flower. Explain why a flower that is not pollinated will not reproduce.	Suggest reasons why some people are worried about a fall in the number of bees in the British Isles. Why might flowering plants grow in high up rooftops or gutters even if humans did not put them there? Animals are a flowering plant's best friend. Do you agree? (reason)

Plants Year 5 and 6		
YEAR 5 **Relate knowledge of plants to studies of all living things.**		
Basic	Advanced	Deep
Describe the life processes common to all living things.	In which ways do the life processes of all living things vary? (contrast) Organise information, including data that supports the theory that the life processes of all living things vary.	Why do the leaves of deciduous trees change colour and fall off in autumn? (generalise) How does this relate to any life processes of animals?
YEAR 6 **Relate knowledge of plants to studies of evolution and inheritance.**		
Basic	Advanced	Deep
Describe how plants and animals may evolve through adaptation to their environment.	Compare and contrast the way different plants and animals have adapted to their environments. Organise information graphically.	What is the relationship between plants adapting to their environments and the theory of human evolution?

Animals and Humans Year 1 and 2

YEAR 1 **Identify and name a variety of common animals that are birds, fish, amphibians, reptiles, mammals and invertebrates.**		
Basic	Advanced	Deep
Name some common animals. Match the animals to the labels: bird, fish, amphibian, reptile, mammal and invertebrate.	Point out and explain the main differences between birds, fish, amphibians, reptiles, mammals and invertebrates.	Create a guide to recognising different types of animals.
YEAR 1 **Identify and name a variety of common animals that are carnivores, herbivores and omnivores.**		
Basic	Advanced	Deep
Name some common animals. Label animals as carnivore, herbivores or omnivore.	Show how carnivores, herbivores and omnivores are similar and different.	True or false? (prove) Carnivores are not hunted by other carnivores.
YEAR 1 **Describe and compare the structure of a variety of common animals (birds, fish, amphibians, reptiles, mammals and invertebrates, including pets).**		
Basic	Advanced	Deep
Name and label the structures of common animals. Complete tables that compare the structures of common animals.	Compare and contrast mammals with amphibians.	What evidence would you show to prove that a reptile could not be confused with a mammal?
YEAR 1 **Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.**		
Basic	Advanced	Deep
Label the main parts of the human body. Illustrate the parts of the body associated with the five senses.	Explain why the sense of touch may be important to a blind person.	Suggest some adjustments that could be made around school for a blind or deaf person.
YEAR 2 **Notice that animals, including humans, have offspring which grow into adults.**		
Basic	Advanced	Deep
Name the offspring of animals and humans (e.g. babies for humans, puppies for dogs). Match the offspring to the adult.	Explain the main differences between adult animals and humans and their offspring.	Suggest some ways that an animal's offspring (including humans) are dependent, for some time, on adults.
YEAR 2 **Investigate and describe the basic needs of animals, including humans, for survival (water, food and air).**		
Basic	Advanced	Deep
List the basic needs of animals, including humans for survival.	Compare the types of food that different animals require.	Explain the concept of humans' need for clean water and why this is not so important for other animals.
YEAR 2		

Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.		
Basic	Advanced	Deep
Describe a healthy diet. Describe a healthy lifestyle. Observe and describe the effect of exercise.	Categorise food types and explain why each group is important to humans.	Create a weekly menu and exercise programme for someone your age.

Animals and Humans Year 3 and 4

YEAR 3 **Identify that animals, including humans, need the right types and amounts of nutrition, that they cannot make their own food and they get nutrition from what they eat.**		
Basic	Advanced	Deep
Name the seven different types of nutrition that humans (and named animals) need. Describe a healthy fraction of the main nutrients for humans (and named animals). Illustrate how humans (and named animals) get nutrition from the food they eat. Name the (natural, i.e. not the shops!) sources of humans food.	Compare and contrast how humans and flowering plants obtain their food. Summarise the main nutritional differences between carbohydrates, fibres, fats, proteins and water. Point out the effects of various vitamins and minerals on human health.	Investigate malnutrition. True or false? Some illnesses are caused by malnutrition. Suggest a range of foods for someone suffering from a vitamin C deficiency. Why might (suggest) children in countries affected by war become ill?
YEAR 3 **Identify that humans and some animals have skeletons and muscles for support, protection and movement.**		
Basic	Advanced	Deep
Label the main bones and joints in the human skeleton (and that of some animals). Name the main muscles in the human body (and some animals). Describe the role of the skeleton and muscles in support, protection, and movement. Observe and describe the role of muscles in human movement.	Categorise muscle movement as relaxing or contracting. Explain the relationship between the muscle groups as they relax and contract.	Recommend exercises that use each main muscle group in the human body.
YEAR 4 **Construct and interpret a variety of food chains, identifying producers, predators and prey.**		
Basic	Advanced	Deep
Name producers, predators and prey in a food chain. Describe producers, predators and prey as herbivores, carnivores or omnivores. Describe energy flow in a food chain. Draw a food chain involving a mouse.	Identify patterns in the flow of energy in a food chain. Demonstrate how food chains always begin with sunlight. Explain how water is essential in a food chain.	Suggest reasons why a growth in sparrow hawks might lead to a reduction in songbirds and too many insects, snails and slugs in gardens. How are predators affected by changes in the natural environment? (generalise)

YEAR 4 **Describe the simple functions of the basic parts of the digestive system in humans.**		
Basic	Advanced	Deep
Label the parts of the human digestive system. Describe the functions of the human digestive system.	Relate the human digestive system to the way humans get nutrition. Contrast this with how plants get nutrition.	Suggest reasons why humans may suffer from digestion problems.
YEAR 4 **Identify the different types of teeth in humans and their simple functions.**		
Basic	Advanced	Deep
Label the types of adult human teeth. Describe the functions of the different types of teeth. Describe good care of teeth.	Compare and contrast human teeth with those of a carnivorous animal.	Cite evidence of how diet is linked to the health of human teeth.

Animals and Humans Year 5 and 6

YEAR 5 **Describe the changes as humans develop to old age.**		
Basic	Advanced	Deep
Describe the main changes in the human body from childhood to adulthood to old age. What are the physical signs of humans ageing? (describe)	Compare and contrast the physical appearance of children and adults. Graph changes in average heights of males and females at different ages. Summarise your findings.	Interpret data about normal blood pressure in children and adults and draw some conclusions. Make generalisations about the relationship between age and changes in humans.
YEAR 6 **Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.**		
Basic	Advanced	Deep
Draw and label diagrams of the human circulatory system. Describe the functions of the heart, blood vessels and blood.	Contrast the different roles of veins and arteries in the human circulatory system. Explain the different functions of the parts of the human heart.	Discover information about human blood pressure. Relate information about blood pressure to diet and lifestyle.
YEAR 6 **Recognise the importance of diet, exercise, drugs and lifestyle on the way the human body functions.**		
Basic	Advanced	Deep
Read and answer questions about the importance of diet and exercise. Observe and record the effect of exercise on the heartbeat. Describe a healthy, balanced diet. Describe some of the possible effects of poor	Graph the effect of exercise on pulse rate. Explain your findings. Explain the possible effects of too much sugar in the diet on how the human body functions.	Discover how coronary arteries may become blocked and cause heart attacks. Argue this statement: You are what you eat. Diet is 80 per cent of your fitness regime and exercise 20. Do you agree?

exercise, drug misuse (including smoking) and poor diet on the way the human body functions.		
YEAR 6 **Describe the ways in which nutrients and water are transported within animals, including humans.**		
Basic	Advanced	Deep
Name some nutrients that are important for humans. Describe how nutrients are important for animals and humans. Draw diagrams that show how arteries and veins are connected by capillaries. Describe how water and nutrients pass from the arteries, through capillaries, to veins.	Explain the similarities and differences between arteries, veins and capillaries. Explain why, in humans, capillaries are vital for the transportation of water and nutrients. Explain why the transportation of water and nutrients in humans is important for: • joints • mucus membranes • blood • removing toxins.	Relate the transportation of water in humans and animals to your knowledge of plants.

Living things and their habitats Year 1 and 2

YEAR 1 and YEAR 2
Explore and compare the differences between things that are living, that are dead and things that have never been alive.

Basic – Year 1	Advanced – Year 2	Deep – Year 2
Observe and list the key features of things that are living, dead and that have never been alive. Describe things as living, dead or never been alive.	Organise things of your choice into groups: living, dead and never been alive.	Give evidence to show that a glass bottle has never been alive.

YEAR 2
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.

Basic	Advanced	Deep
Observe animals/plants in their natural habitats. Match the animal/plant to its habitat. Describe why the animal/plant is suited to its environment.	Categorise animals/plants according to the conditions they require. Explain your categories.	Suggest reasons why a cactus may find it difficult to survive in cold, wet conditions. Create an ideal environment for woodlice and prove that this is a successful habitat.

YEAR 2
Identify and name a variety of plants and animals in their habitats, including micro-habitats.

Basic	Advanced	Deep
Match common animals/plants to their habitats.	Explain why a habitat for a particular plant or animal is suitable.	Design an ideal habitat for a hamster (or other animal)that is kept as a pet. Create a bottle garden for plants that require warm, dry conditions.

YEAR 2
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.

Basic	Advanced	Deep
What does a (name of animal) like to eat? (name) Draw a food chain that ends with a sparrow hawk. Name sources of food.	Explain the differences in a food chain for a herbivore and a carnivore.	Always, sometimes or never? Food chains end with a carnivore.

Living things and their habitats Year 3 and 4

YEAR 3 and YEAR 4
Recognise that living things can be grouped in a variety of ways.

Basic – Year 3	Advanced – Year 4	Deep – Year 4
Name groups of animals (and plants). Describe the features of animals (and plants) in particular groups.	Compare and contrast the features of animals (and plants) in different groups. Summarise the key similarities and differences	Are there any ways in which you could classify animals (and plants) so that they may be in more

Match animals (and plants) to groups.	of animals (and plants) in different groups. Explain how you have chosen the key similarities and differences to summarise.	than one group? (suggest, reason, propose, arrange)
YEAR 4 **Explore and use classification keys.**		
Basic	Advanced	Deep
Complete a classification key from a list of animals (and plants).	Identify animals (and plants) using a classification key.(apply) Adapt a classification key to include different criteria.	Construct classification keys for animals (and plants).
YEAR 4 **Recognise that environments can change and that this can sometimes pose dangers to specific habitats.**		
Basic	Advanced	Deep
Name and describe a range of different habitats. Identify and label specific plants and animals in these habitats. Describe how a change to an environment (e.g. deforestation in rainforests) is a danger to specific habitats.	Compare changes in two or more habitats and categorise the effects of the changes.	Explain the concept of conservation and how groups are trying to preserve habitats.

Living things and their habitats Year 5 and 6		
YEAR 5 **Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.**		
Basic	Advanced	Deep
Draw and describe the life cycle of a mammal. Draw and describe the life cycle of an amphibian. Draw and describe the life cycle of an insect. Draw and describe the life cycle of a bird.	Explain the similarities and differences in the life cycles of a mammal, an amphibian, an insect and a bird.	True or false? All young offspring look like smaller versions of their adult parents. Always, sometimes or never? Eggs are common to the life cycles of mammals, amphibians, insects and birds.
YEAR 5 **Describe the life process of reproduction in some plants and animals.**		
Basic	Advanced	Deep
Draw and describe the process of reproduction in some plants. Draw and describe the process of reproduction in some animals.	Explain the similarities and differences between the process of reproduction in plants and animals.	Relate the reproduction of plants to your knowledge of the life cycle of insects. Relate the reproduction of some animals and plants to your knowledge of food chains.
YEAR 6 **Describe how living things are classified into broad groups according to common observable characteristics.**		

Basic	Advanced	Deep
Look at and copy classification keys for common insects. Use classification keys to identify insects and animals. Make classification keys.	Identify plants, mammals, amphibians, insects and birds from classification keys. Explain why observable features are used to classify living things into broad groups.	Propose criteria for the creation of classification groups for: • mammals • amphibians • insects • birds. Present information about and reasons for these groups.
YEAR 6 **Give reasons for classifying plants and animals based on specific characteristics.**		
Basic	Advanced	Deep
Recognise and name the characteristics used in classification groups for plants and animals. List reasons why these characteristics are used.	Explain some of the problems with not using specific characteristics when classifying living things.	Observable characteristics are not the only way to scientifically group plants and animals. Do you agree?

Evolution and Inheritance Year 1 and 2

YEAR 1 and YEAR 2

Identify how humans resemble their parents in many features.

Basic – Year 1	Advanced – Year 2	Deep – Year 2
List the ways that humans may resemble their parents. Match pictures of parents to their children.	Present similarities and differences between parents and their children.	Devise a 'guess who' game to deduce the child of a set of parents.

Evolution and Inheritance Year 3 and 4

YEAR 4

Identify how plants and animals, including humans, resemble their parents in many features.

Basic	Advanced	Deep
Match pictures of (human and animal) offspring to their parents. Notice and describe how they sometimes resemble each other. Notice that and describe how this may not be the case for all humans. Notice and label the resemblance between plants and those that grow from their seeds.	Categorise resemblances between humans (and plants and animals) and organise your findings.	Explain the concept of inheritance. Investigate how scientists and doctors are researching conditions that are inherited from a parent.

YEAR 3

Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.

Basic	Advanced	Deep
Name a variety of animal and plant fossils. Describe the conditions in which the fossils once lived. Note, name and describe plants and animals that inhabited the Earth millions of years ago.	Categorise fossils in a number of ways. Compare and contrast different fossils. Explain the process of the formation of fossils.	Investigate the conditions in which life on Earth survived millions of years ago. Burning fossil fuels is widely thought by scientists to contribute to a rise in worldwide temperature. Investigate this and cite evidence that supports or questions this view.

Identify how animals and plants are suited to and adapt to their environment in different ways.

Basic – Year 3	Advanced – Year 4	Deep – Year 4
Match a range of animals and plants to the environments in which they are found. Describe how animals and plants are suited to the environments in which they are found.	Explain and give examples of the idea of adaptation. Compare and contrast different types of adaptation.	True or false? Plants and animals would not survive if they could not adapt. Which do you think are the best examples of an animal and a plant that show adaptation? (suggest)

Illustrate how animals and plants adapt to environments in different ways.		

Evolution and Inheritance Year 5 and 6

YEAR 6
Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.

Basic	Advanced	Deep
Name a variety of animal and plant fossils. Describe the conditions in which the fossils once lived. Note, name and describe plants and animals that inhabited the Earth millions of years ago.	Categorise fossils in a number of ways. Compare and contrast different fossils. Explain the process of the formation of fossils.	Investigate the conditions in which life on Earth survived millions of years ago. Burning fossil fuels is widely thought by scientists to contribute to a rise in worldwide temperature. Investigate this and cite evidence that supports or questions this view.

YEAR 6
Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.

Basic	Advanced	Deep
Observe and describe differences between living things and their offspring. Observe and name offspring that are not identical to their parents and describe how they vary.	Categorise differences in living things and their offspring. Explain, with examples, how offspring are not identical.	Is it possible that a litter of cocker spaniel puppies from two parents of the same colour may vary in colour?

YEAR 5 and YEAR 6
Identify how animals and plants are adapted to suit their environment in different ways and how that adaptation may lead to evolution.

Basic – Year 5	Advanced – Year 6	Deep – Year 6
Match a range of animals and plants to the environments in which they are found. Describe how animals and plants are suited to the environments in which they are found. Illustrate how animals and plants adapt to environments in different ways. Describe the theory of evolution.	Explain and give examples of the idea of adaptation. Compare and contrast different types of adaptation. Explain why adaptation may lead to evolution.	True or false? Plants and animals would not survive if they could not adapt. Which do you think are the best examples of an animal and a plant that show adaptation? (suggest) Evolution is the only way a species can survive. Do you agree?

Materials Year 1 and 2

YEAR 1 **Distinguish between an object and the material from which it is made.**		
Basic	Advanced	Deep
Match an object to its original material. Name the object and its original material.	Explain how a bottle is made from sand. Choose some objects and explain how they were made from their original material.	True or false? Some fleece jackets start as plastic bottles.
YEAR 1 **Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock.**		
Basic	Advanced	Deep
Observe and name everyday materials. Arrange objects made of the same materials and label the materials.	Group objects based on the materials they are made from. Explain your groupings.	Investigate which objects started off as a plant.
YEAR 1 **Describe the simple physical properties of a variety of everyday materials.**		
Basic	Advanced	Deep
Observe and name the properties of everyday materials. Complete tables that describe the properties of materials.	Explain why the properties of materials are useful for deciding which materials to use for an object. Give examples.	Design an item of clothing to keep the wearer dry.
Year 1 **Compare and group together a variety of everyday materials on the basis of their simple physical properties.**		
Basic	Advanced	Deep
Place materials into groups under the headings given to you. Describe the different properties of materials.	Decide how best to group materials on the basis of their properties. Explain your reasons for your groups. Compare and contrast the different properties of materials.	Create a ‘guess the material’ game based on the properties of materials.
YEAR 2 **Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.**		
Basic	Advanced	Deep
Observe and describe changes to the shape of solid objects when they are squashed, bent, twisted or stretched.	Experiment with changing the shape of solid objects. Organise and summarise your findings.	Always, sometimes or never? The shape of wood can be changed through squashing, bending, twisting or stretching.
YEAR 2 **Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick/rock and paper/cardboard for particular uses.**		
Basic	Advanced	Deep

List different uses for everyday materials. List reasons for the suitability of materials for particular uses.	Compare and contrast the properties of materials and use this to explain why certain materials are used for particular purposes.	Paper is unsuitable for a model boat. Do you agree or disagree? (reason, justify) Devise other hypotheses like this and test them.

Materials

YEAR 3 **Compare and group together different kinds of rocks on the basis of their simple, physical properties.**		
Basic	Advanced	Deep
Name different types of rock. Describe the properties (including hardness) of a variety of different rocks. Label some of the minerals found in rocks.	Compare and contrast the properties of different rocks. Group rocks on the basis of their properties (rather than their origins). Infer the names and types of rocks based on their observable properties or descriptions of their minerals.	True or false? The colour of a rock is a good clue that helps to identify it? Always, sometimes or never? Rocks that sparkle have a high quartz content?
YEAR 3 **Relate the simple physical properties of some rocks to their formation (igneous or sedimentary).**		
Basic	Advanced	Deep
Observe and describe the properties of igneous and sedimentary rocks. Describe rocks as igneous or sedimentary. Describe the properties of igneous and sedimentary rocks. Illustrate how igneous and sedimentary rocks are formed.	Explain the main differences between igneous and sedimentary rocks. Compare the origins of different types of rocks and identify patterns that would help you to infer the type of rock.	Generalise: how can the hardness of a rock be related to its origins?
YEAR 3 **Describe in simple terms how fossils are formed when things that have lived are trapped within sedimentary rock.**		
Basic	Advanced	Deep
Describe the formation of fossils. Illustrate the formation of fossils.	Identify the types of fossils (identify patterns) that are most likely to be found in different types of sedimentary rocks (e.g. in shale, limestone, sandstone etc).	Is it possible that fossils could be found within igneous rocks? Cite evidence.
YEAR 3 **Recognise that soils are made from rocks and organic matter.**		
Basic	Advanced	Deep

Observe and describe the properties of soils. Observe and name different types of soils. Find out about and describe how soil is formed from rocks and organic matter. Name the 'parent' materials of different types of soils.	Explain how weathering contributes to the formation of soils. Compare and contrast different types of soils. Categorise soils using a range of different criteria. Test soils in various ways in order to identify them.	Recommend plants for different soil conditions. True or false? Alluvial soils are richer in nutrients than most other soils. Investigate the flooding of the River Nile in ancient Egyptian times and relate this to your knowledge of soils.
YEAR 4 **Compare and group materials together, according to whether they are solids, liquids or gases.**		
Basic	Advanced	Deep
Name materials as solids, liquids or gases. Observe and describe the typical properties of solids, liquids and gases. Complete tables to show information about solids, liquids and gases.	Compare and contrast solids, liquids and gases. Classify liquids in different ways. Classify solids in different ways. Classify gases in different ways. Explain why a helium filled balloon will float in air.	True or false? Liquids take the form of the container they are in. True or false? Solids keep their shape unless they are altered by a force. Always, sometimes or never? Gases are lighter than solids.
YEAR 4 **Observe that some materials change state when they are heated or cooled, and measure the temperature at which this happens in degrees Celsius (°C), building on the teaching in mathematics.**		
Basic	Advanced	Deep
Observe and describe the effect of heating and cooling water, chocolate, butter and other everyday materials. Measure the changing temperature of materials as they are heated and cooled and complete tables and graphs to show the effects.	Summarise, using scientific terminology, the relationship between temperature and states of matter. Explain the three states of matter of water and how temperature affects its state.	Create a testable hypothesis about states of matter, carry out tests and prove or disprove your hypothesis.
YEAR 4 **Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.**		
Basic	Advanced	Deep
Describe the water cycle. Observe evaporation. Observe and describe the different rates of evaporation in different temperatures.	Graph the relationship between temperature and evaporation. Summarise your results.	Suggest practical uses for the relationship between temperature and evaporation.

Materials Year 5 and 6		
YEAR 5 **Compare and group together everyday materials based on evidence from comparative and fair tests, including their hardness, solubility, conductivity (electrical and thermal), and response to magnets.**		
Basic	Advanced	Deep

Observe and describe materials on the basis of their hardness, solubility, conductivity and their response to magnets. Carry out comparative tests to group materials (follow instructions). Carry out fair tests to group materials (follow instructions).	Adapt a comparative test to group materials. Predict the outcomes of your test. Modify a fair test to group materials. Predict the outcomes of your test.	Devise an experiment that proves or disproves a hypothesis you have created about the properties of materials.
YEAR 5 and YEAR 6 **Understand how some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution.**		
Basic – Year 5	Advanced – Year 6	Deep – Year 6
Observe (through direct experience) and describe materials as soluble or nonsoluble. Observe and describe the effect of evaporation of a solution on a substance (solute) that has dissolved in a liquid (solvent).	Apply your knowledge of solutions to explain how a substance has not disappeared when it forms a solution. Modify a fair test to demonstrate your knowledge.	Relate, citing evidence, your understanding of solutions to your understanding of the water cycle.
YEAR 5 **Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.**		
Basic	Advanced	Deep
Observe and describe how items may be separated through filtering, sieving and evaporation.	Experiment with ways to separate pebbles and silt in a solution of salt. Explain your methods and summarise your results.	Is there a way to recover water after recovering a substance from a solution after evaporation? (propose) Prove it.
YEAR 5 **Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.**		
Basic	Advanced	Deep
Observe and describe materials on the basis of their hardness and conductivity. Carry out comparative tests to assess the suitability of everyday materials for a purpose (follow instructions). Label materials, including insulators and conductors using a range of scientific vocabulary. Carry out fair tests to assess the suitability of everyday materials for a purpose (follow instructions).	Apply your understanding of the properties of materials to explain why a range of everyday items have been made from a particular material.	What might happen if a bird sits on a live, uninsulated power line? (propose) Explain the concepts you are using to give your answer.
YEAR 5 **Demonstrate that dissolving, mixing and changes of state are reversible changes.**		
Basic	Advanced	Deep

Observe and describe how mixing is reversible. Observe and describe how dissolving a substance into a solution is reversible. Observe and describe how changes of state are reversible.	Demonstrate reversible changes by graphing the temperature of water as it changes state from a liquid to a solid and from a solid to a liquid, and identify patterns between temperature and state. Summarise your findings.	Always, sometimes or never? changes to materials that are reversible require something else to change first before they can change? Cite evidence.
YEAR 5 **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, oxidisation and the action of acid on bicarbonate of soda.**		
Basic	Advanced	Deep
Observe and describe how burning a material creates a new material and is not reversible. Observe and describe how oxidisation of (e.g. of steel) creates a new material and is not reversible. Observe and describe how adding an acid (e.g. to bicarbonate of soda) creates a new material and is not reversible.	Categorise changes as reversible or not reversible, and give examples. Experiment with making plaster of Paris moulds. Observe, record and explain what happens to the material as water is added to the powder. Summarise your findings.	True or false? Changes in temperature cause only reversible and not irreversible changes. Cite evidence.

Movements, forces and magnets Year 1 and 2		
YEAR 1 **Notice and describe how things move, using simple comparisons such as faster and slower.**		
Basic	Advanced	Deep
What happens to objects when they are pushed? What happens to objects when they are pulled?	Experiment with pushing objects gently and hard. Record and explain what happens. Experiment with a slope and record how this changes the speed at which an object rolls.	Devise ways to slow down a toy car rolling down a slope. True or false? The surface on which a toy car rolls affects its speed.
YEAR 2 **Compare how different things move.**		
Basic	Advanced	Deep
Observe and describe the movement of a range of things including things that move with magnets.	Compare the movement of remote-control cars and a helicopter drone. Explain the differences in movement.	Do heavy and light things move differently? Is there a pattern?

Movements, forces and magnets Year 3 and 4		
YEAR 3 **Compare how things move on different surfaces.**		
Basic	Advanced	Deep
Observe and describe the movement of objects on surfaces that are smooth and rough, flat and inclined to different degrees. Complete tables to record observations. Use the word 'friction' appropriately.	Identify patterns in the type of surface and how this affects movement. Explain why these patterns may exist. Experiment with practical applications of this relationship.	Investigate the design of car tyres and connect this to your understanding of friction.
YEAR 3 and YEAR 4 **Notice that some forces need contact between two objects, but magnetic forces can act at a distance.**		
Basic – Year 3	Advanced – Year 4	Deep – Year 4
Observe and illustrate how objects need a contact force for them to move. Name the contact forces that move objects. Observe and illustrate how magnetic forces act at a distance.	Experiment with magnets to explore whether the force of magnetism can act through materials (e.g. by placing magnets in ice). Identify any patterns in the type and amount of material the force is acting through.	Investigate practical applications of magnetism in everyday life.
YEAR 3 **Observe how magnets attract or repel each other and attract some materials and not others.**		
Basic	Advanced	Deep

Observe and describe how magnets attract or repel each other. Observe and describe that magnets attract some materials and not others. (name)	Experiment with iron filings to see how they act when magnets attract and repel each other. Record your findings and explain what is happening.	Explain the concept of magnetic fields and how magnets attract or repel one another when placed near each other. Prove that there are magnetic fields by making them 'visible'.
YEAR 3 **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.**		
Basic	Advanced	Deep
Observe then complete tables that describe everyday materials as 'attracted' or 'not attracted' to magnets.	Explain why some materials are attracted to magnets and others are not.	Investigate practical applications of the understanding of which materials are or are not attracted to magnets. Suggest some uses for this in school.
YEAR 3 **Observe how magnets attract or repel each other and attract some materials and not others.**		
Basic	Advanced	Deep
Label the north and south poles of magnets.	Explain why magnets have poles. Experiment with cutting magnets in two. Observe and explain what happens.	Why do we call parts of Earth the North and South Poles? (explain concept) Investigate the Aurora Borealis and explain how this (the concept) is linked to magnetism.
YEAR 3 **Predict whether two magnets will attract or repel each other, depending on which poles are facing.**		
Basic	Advanced	Deep
Observe and describe the effect of placing like and different poles of a magnet next to each other. Complete tables that show what you expect to happen when different combinations of poles are facing each other.	Apply your knowledge of magnetic poles to create a game that shows the idea that magnets attract or repel each other.	Is it possible to make a magnet? (prove or disprove).

Movements, forces and magnets Year 5 and 6		
YEAR 5 **Describe magnets as having two poles.**		
Basic	Advanced	Deep
Label the north and south poles of magnets.	Explain why magnets have poles. Experiment with cutting magnets in two. Observe and explain what happens.	Why do we call parts of Earth the North and South Poles? (explain concept) Investigate the Aurora Borealis and explain how this (the concept) is linked to magnetism.

YEAR 6 **Predict whether two magnets will attract or repel each other, depending on which poles are facing.**		
Basic	Advanced	Deep
Observe and describe the effect of placing like and different poles of a magnet next to each other. Complete tables that show what you expect to happen when different combinations of poles are facing each other.	Apply your knowledge of magnetic poles to create a game that uses the idea that magnets attract or repel each other.	Is it possible to make a magnet? (prove or disprove)
YEAR 5 **Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.**		
Basic	Advanced	Deep
Observe and describe the effect of the force of gravity.	Interpret data about the rate that different materials fall towards Earth. Summarise your findings.	Which will reach Earth first if dropped from the same height: 1kg of feathers or 1kg of steel? (explain concepts)
YEAR 5 **Identify the effect of drag forces such as air resistance, water resistance and friction that act between moving surfaces.**		
Basic	Advanced	Deep
Observe and describe the effect of air resistance. Observe and describe the effect of water resistance. Observe and describe the effect of friction. Describe these forces as drag forces.	Apply your knowledge of friction to positive applications. Explain your ideas.	Relate the size of a drag force to the size of the object it is acting on.
YEAR 5 **Describe, in terms of drag forces, why moving objects that are not driven tend to slow down.**		
Basic	Advanced	Deep
Observe and describe how objects tend to slow down because of drag forces.	Apply your knowledge of drag forces to some positive applications.	Always, sometimes or never? The slowing effect of drag forces can be overcome if an object is driven.* (explain concept, make generalisations)
YEAR 5 **Understand that force and motion can be transferred through mechanical devices such as gears, pulleys, levers and springs.**		
Basic	Advanced	Deep
Observe and describe how forces and motion can be transferred through gears, pulleys, levers and springs. Label the forces and draw the directions in which they transfer.	Apply your knowledge of forces and movement to make a working mechanism.	Can a rotary motion be changed into a linear (up and down) motion? (prove or disprove)
YEAR 5 **Understand that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.**		
Basic	Advanced	Deep

Observe and describe the effect of changing gears on a bicycle. Observe and describe the effect of using a lever to try to move a heavy object (e.g. to lift the teacher). Observe and describe the effect of using a pulley, or geared pulleys to lift heavy objects.	Apply your knowledge of gears, pulleys and levers to demonstrate and explain how a small force can have a greater effect.	Using a pulley allows a small force to have a greater effect but increases the amount of pulls one has to make. Make generalisations about the relationship between forces and effect.

Light and seeing Year 1 and 2		
YEAR 1 and YEAR 2 **Observe and name a variety of sources of light, including electric lights, flames and the Sun, explaining that we see things because light travels from them to our eyes.**		
Basic – Year 1	Advanced – Year 2	Deep – Year 2
Name a variety of sources of light. Illustrate how light travels from light sources to our eyes.	Experiment with ways to block light from reaching our eyes. Point out how this demonstrates that light travels from a source to our eyes.	True or false? The brighter the source of light, the easier it is to see.

Light and seeing Year 3 and 4		
YEAR 3 **Recognise that light is required in order to see things and that dark is the absence of light.**		
Basic	Advanced	Deep
Observe and record the effect of light in seeing things. Answer questions about the effect of light on seeing. Describe darkness.	Explain the relationship between light and seeing. Experiment with the effect of different levels of light on the visibility of different coloured objects. Explain why it is important to dress in high visibility clothing in some situations.	Relate your knowledge of the Earth's rotation in space to your understanding of light and dark. True or false? The Sun is the only natural source of light in our solar system.
YEAR 3 **Notice that light is reflected from surfaces.**		
Basic	Advanced	Deep
Observe light reflected from surfaces. Describe the effect of light reflecting from surfaces. Label a number of effects of reflection.	Experiment with light reflecting from a variety of different surfaces. Categorise surfaces in terms of their reflective properties.	Always, sometimes or never? Dark surfaces do not reflect light as well as those that are light.
YEAR 3 **Recognise that light from the Sun can be dangerous and that there are ways to protect your eyes.**		
Basic	Advanced	Deep
Name some safety rules to avoid damaging your eyes with light from the Sun.	Apply your knowledge of safety rules to explain how to safely view a solar eclipse.	Investigate different types of sunglasses and recommend the best type to protect your eyes from day to day sunlight. (teacher: reinforcing the point that it is still not safe to look at the sun even through sunglasses)
YEAR 3 and YEAR 4 **Recognise that shadows are formed when the light from a light source is blocked by a solid object.**		
Basic – Year 3	Advanced – Year 4	Deep – Year 4

Observe and record the effect of blocking light with solid objects. Name the effect and describe what is happening.	Explain why an umbrella is a useful practical example of shadows. (apply) Give examples of other practical uses for shadows. (apply)	True or false? Night-time is a shadow.
YEAR 3 **Find patterns in the way that the size of a shadow changes.**		
Basic	Advanced	Deep
Observe and record the length of shadows at different times of the day. Observe and record how the size of a shadow changes when the source of light is moved closer or further away from the object causing the shadow.	Explain why shadows change size. Predict when shadows will take a particular shape (e.g. the shadow of a tree on a bright summer evening with the Sun in a particular position).	What is the relationship between the height of a light source and the object that is causing the shadow?

Light and seeing Year 5 and 6		
YEAR 5 and YEAR 6 **Understand that light appears to travel in straight lines.**		
Basic – Year 5	Advanced – Year 6	Deep – Year 6
Draw and label diagrams to show how light travels.	Experiment with ways that demonstrate how light travels. Predict where light will appear after hitting a reflective surface.	Investigate whether light can ever 'bend' around corners* and present information on this. Does blocking light prove that it travels? (reason, investigate)
YEAR 6 **Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eyes.**		
Basic	Advanced	Deep
Draw and label diagrams that show how objects are seen. Observe and describe how light diverges from a source.	Experiment with making or using a periscope to demonstrate how objects may be seen. Explain what is happening to the light.	True or false? Light is invisible.
YEAR 6 **Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them, and to predict the size of shadows when the position of the light source changes.**		
Basic	Advanced	Deep
Draw and label diagrams that show how shadows are formed and that the size of the shadow may be predicted when the position of the source of light changes.	Explain why shadows are 'longer' in the winter and 'shorter' in the summer.	Is it possible that a shadow can be formed that is smaller than the object that created it? (reason)

Describe how divergent light from a source affects the size of shadows.		
YEAR 6 **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.**		
Basic	Advanced	Deep
Draw and label diagrams to explain how we see.	Explain and demonstrate why we cannot always see all of the Moon.	Investigate and present information on how objects, such as a stick, appear to bend when placed in water.

Sound and hearing Year 1 and 2		
YEAR 1 and YEAR 2 **Observe and name a variety of sources of sound, noticing that we hear with our ears.**		
Basic – Year 1	Advanced – Year 2	Deep – Year 2
Name a variety of sources of sound. Recognise a variety of sounds. Observe how we hear sounds with our ears. Illustrate that ears allow us to hear sounds.	Categorise sounds. Compare and contrast sounds based on your own criteria. (choose)	Suggest ways to protect our ears from loud sounds.

Sound and hearing Year 3 and 4		
YEAR 3 and YEAR 4 **Identify how sounds are made, associating some of them with something vibrating.**		
Basic – Year 3	Advanced – Year 4	Deep – Year 4
Listen to and describe a range of sounds from different sources. Identify the source of sounds. Complete experiments and record findings that demonstrate a tuning fork is vibrating when it makes a sound.	Compare and contrast how loud and quiet sounds are made. Experiment with stringed musical instruments to discover how high and low notes are made and explain your findings. Explain the role of vibration in creating sounds.	Suggest a way to prove the relationship between vibration and pitch. True or false? Higher notes are louder than lower notes.
YEAR 4 **Recognise that vibrations from sounds travel through a medium to the ear.**		
Basic	Advanced	Deep
Listen to and describe sounds through a variety of mediums.	Draw a labelled diagram that shows how vibrations travel through a medium to the ear.	Compare and contrast the effectiveness of different mediums in transmitting sounds. Suggest reasons why whales and dolphins can communicate over long distances. Air is not a very good medium for transmitting sounds. Do you agree?
YEAR 4 **Recognise that sounds get fainter as the distance from the sound source increases.**		
Basic	Advanced	Deep
Observe and describe differences in sounds that are close to and far away from their sources.	Experiment with, explain and demonstrate the pattern between the volume of a sound and the distance from its source.	Why might a thunderclap sound loud to some and faint to others? (suggest, reason)

Sound and hearing Year 5 and 6		
YEAR 5 **Find patterns between the volume of a sound and the strength of the vibrations that produced it.**		
Basic	Advanced	Deep
Observe and describe differences in the volume of a sound and the strength of the vibrations that produced it.	Experiment with, explain and demonstrate the pattern between the volume of a sound and the strength of the vibrations that produced it.	Relate your understanding of volume to a range of orchestral instruments. (How does, for example, a trombone player alter the strength of the vibrations he or she creates?)
YEAR 6 **Find patterns between the pitch of a sound and features of the object that produced it.**		
Basic	Advanced	Deep
Observe and describe the differences in the pitch of a sound and the object that produced it.	Observe and describe the differences in the pitch of a sound and the object that produced it.	Observe and describe the differences in the pitch of a sound and the object that produced it.

Earth's movement Year 1 and 2		
YEAR 1 **Observe changes across the four seasons.**		
Basic	Advanced	Deep
Name the four seasons. Notice and name the key features of each season.	Organise images or objects from each season into categories. Explain your categories.	Always, sometimes or never? It is warm and dry during summer.
YEAR 1 **Observe and describe weather associated with the seasons and how day length varies.**		
Basic	Advanced	Deep
Observe and record the weather over four seasons. Describe the weather in a named season. Describe how day length varies in each season.	Compare and contrast weather and day length across the four seasons. Identify patterns in day length across the four seasons.	Plan some activities that would be suited to each season.
YEAR 2 **Observe the apparent movement of the Sun during the day.**		
Basic	Advanced	Deep
Name times of the day. Observe and describe the Sun's position in the sky at different times of the school day.	Show how you might know (apply) roughly what time of day it is by looking at the position of the Sun.	Think of a way to prove that it is lunchtime using the Sun.

Earth's movement Year 3 and 4		
YEAR 3 **Describe the movement of the Earth relative to the Sun in the solar system.**		
Basic	Advanced	Deep
Describe the movement of the Earth relative to the Sun. Label a diagram of and describe our solar system. Answer questions about the scientists who first observed the Earth's movement around the Sun. Describe how the movement of the Earth gives rise to seasonal changes.	Explain why the Earth's movement gives rise to the seasons. Explain why the effect of the Earth's movement on seasons is more acute further away from the Equator.	True or false? A year is always 365 days, no matter where you are in our solar system. Relate your knowledge of the Earth's movement relative to the Sun to time zones. Assess the significance of this to our daily lives. At any time of day it is always 5 o' clock somewhere on Earth. Do you agree?
YEAR 4 **Describe the movement of the Moon relative to the Earth.**		
Basic	Advanced	Deep

Identify the Moon and Earth, and label them on a diagram. Describe the Moon's movement relative to the Earth. Answer questions about the Moon's movement relative to the Earth. Observe, name and record the phases of the Moon.	Explain why the Moon's movement affects the tides of oceans and seas on Earth. Explain how we can predict the times of high and low tides.	True or false? The shape of the Moon's phases is a natural calendar. Is it possible to calculate how long until a particular moon shape will appear again? (Prove or disprove) Explain the concept of a leap year.

Earth's movement Year 5 and 6

YEAR 5 **Describe the movement of the Earth relative to the Sun in the solar system.**		
Basic	Advanced	Deep
Describe the movement of the Earth relative to the Sun. Label and describe our solar system. Answer questions about the scientists who first observed the Earth's movement around the Sun. Describe how the movement of the Earth gives rise to seasonal changes.	Explain why the Earth's movement gives rise to the seasons. Explain why the effect of the Earth's movement on seasons is more acute further away from the equator.	True or false? A year is always 365 days, no matter where you are in our solar system. Relate your knowledge of the Earth's movement relative to the Sun to time zones. Assess the significance of this to our daily lives. At any time of day it is always 5 o' clock somewhere on Earth. Do you agree?
YEAR 5 **Describe the movement of the Moon relative to the Earth.**		
Basic	Advanced	Deep
Identify the Moon and Earth and label them on a diagram. Describe the Moon's movement relative to the Earth. Answer questions about the Moon's movement relative to the Earth. Observe, name and record the phases of the Moon.	Explain why the Moon's movement affects the tides of oceans and seas on Earth. Explain how we can predict the times of high and low tides.	True or false? The shape of the Moon's phases is a natural calendar. Is it possible to calculate how long until a particular moon shape will appear again? (prove or disprove) Explain the concept of a leap year.
YEAR 5 **Describe the Sun, Earth and Moon as approximately spherical bodies.**		
Basic	Advanced	Deep
Observe pictures and videos of the Sun, Earth and	Explain, using your knowledge of gravity, why the Sun, Earth and Moon are almost spherical.	Investigate reasons why planets and moons are not completely spherical.

Moon and describe them using mathematical vocabulary.		Explore terms such as ‘equatorial bulge’ and suggest an experiment that would prove this phenomenon.
YEAR 5 and YEAR 6 **Use the idea of the Earth’s rotation to explain day and night and the apparent movement of the Sun across the sky.**		
Basic – Year 5	Advanced – Year 6	Deep – Year 6
Draw, label and describe how the Earth’s rotation gives rise to day and night.	Explain and demonstrate how and why a sundial, used to tell the time, works.	At night, sundials do not work. Suggest or investigate other ways you could tell the approximate time using views of the night sky.

Electrical circuits Year 1 and 2		
YEAR 1 **Identify common appliances that run on electricity.**		
Basic	Advanced	Deep
Observe and name some sources of electricity (mains, battery). List common appliances that run on electricity.	Categorise electrical appliances. Explain the reasons for your categories. Compare and contrast some appliances in each of your categories.	Always, sometimes or never? Electrical appliances need batteries or mains electricity to power them.
YEAR 2 **Construct a simple series electrical circuit.**		
Basic	Advanced	Deep
Follow instructions to construct an electrical circuit. Describe the circuit, naming each component.	Modify a circuit to add more components. Experiment with and categorise the effect that adding more components has.	Diagnose and repair a broken circuit. (solve non-routine problems)

Electrical circuits Year 3 and 4		
YEAR 4 **Identify common appliances that run on electricity.**		
Basic	Advanced	Deep
Identify and name common appliances that run on electricity. Label appliances that run on high and low voltage electricity. Identify and describe sources of electricity for appliances, including mains, battery, solar and others.	Explain the similarities and differences between a 240 volt, 40 watt halogen light bulb and a 12 volt, 6 watt LED light bulb. Explain the similarities and differences between a 240 volt mains-powered vacuum cleaner and a 12 volt battery-powered vacuum cleaner.	Investigate battery powered road cars and draw some conclusions about their benefits and problems.
YEAR 4 **Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.**		
Basic	Advanced	Deep
Follow instructions to create a series circuit. Label the components of the circuit.	Make a number of series circuits containing different components. Explain the similarities between the circuits despite the different components.	Explain the concept of a series circuit and recommend some general
YEAR 4 **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.**		
Basic	Advanced	Deep

Complete incomplete circuits by adding the correct components. Answer questions about the completeness of various circuits.	Predict the effect of changing the arrangement of the components of a circuit (some of which maintain a circuit and others that do not). Experiment with the effect of placing more than one bulb in a series circuit and summarise your findings.	Find and rectify faults (solve non-routine problems) for a range of incomplete circuits.
YEAR 4 **Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.**		
Basic	Advanced	Deep
Observe and describe the effect of using switches in a circuit. Complete circuit diagrams, showing and labelling switches.	Explain why opening and closing switches affects a series circuit.	True or false? If there are five switches in a row in a series circuit, only one needs to be 'on' for the circuit to be complete. Relate the idea of switches to the creation and sending of Morse code.
YEAR 3 and YEAR 4 **Recognise some common conductors and insulators, and associate metals with being good conductors.**		
Basic – Year 3	Advanced – Year 4	Deep – Year 4
Observe and record how different materials act as conductors or insulators of electricity. Observe the effect of some poor and good conductors and label materials as poor or good conductors.	Categorise materials on the basis of their conductivity. Experiment with materials that conduct but also resist the flow of electricity. Summarise your findings.	True or false? Everything on Earth either conducts or doesn't conduct electricity, including humans.

Electrical circuits Year 5 and 6		
YEAR 5 and YEAR 6 **Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.**		
Basic – Year 5	Advanced – Year 6	Deep – Year 6
Observe and describe the effect of changing the number and voltage of cells used in a series circuit.	Experiment with, explain and demonstrate the pattern between the voltage of cells and the brightness of a bulb.	Suggest why a bulb or buzzer may stop working when the voltage is increased.
YEAR 6 **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.**		
Basic	Advanced	Deep
Observe and describe the effect of placing extra bulbs (or buzzers) into a circuit and how this can be overcome by increasing the number and voltage of cells.	Predict the outcome of placing various components into an electrical circuit. Explain the patterns.	Investigate the concept of resistance and prove or disprove that components, including wire, are resistors. Is it possible to make your own resistor? (Suggest,

		prove)
Use recognised symbols when representing a simple circuit in a diagram.		
Basic	Advanced	Deep
Label and learn the recognised symbols for representing components in a circuit diagram.	Make circuits then represent them in circuit diagrams, applying component symbols appropriately.	How do the images of recognised symbols relate to their function?