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| **Year One** | **Working Towards** | **Working at** | **Working Beyond** |
| **Working Scientifically** | Begin to ask simple questions; observe closely, perform simple tests using equipment; begin to identify and classify; use their observations and ideas to suggest answers to questions; begin to gather and record data to help in answering questions | 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 | independently ask simple questions and recognise that they can be answered in different ways; observing closely, independently use simple equipment and perform simple tests, identify and classify; use their observations and ideas to suggest answers to questions; independently gather and record data to help in answering questions |
| **Pets (Imaginary) & Ourselves** | Identify and locate parts of their body and use their observations to describe humans and other animals | Identify and locate parts of their body, including sense organs; recognise changes that take place as animals get older, use their observations to point out differences between humans and other animals and between animals and non-living things and communicate observations and measurements | Explain differences between living and non-living things in terms of characteristics such a movement and growth, explain that adult animals no longer grow; suggest ways of presenting observations and explain why we should show sensitivity to living things |
| **Healthy animal** | Begin to identify and name one or two animals and compare their structures; begin to learn the meaning of carnivores, herbivores & omnivores | identify & name a variety of common animals including fish, reptiles amphibians, birds & mammals; identify & name a variety of carnivores, herbivores & omnivores; describe & compare structure of common animals including pets | Recognise differences between animals and plants; makes some measurements using non-standard units |
| **Marvellous Materials**  **& Let’s Build** | Make observations of common objects and communicate these | 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 | Suggest several reasons why a material may or may not be suitable for a particular purpose and predict the results they ate going to do. |
| **What’s growing?** | Name some common plants, identify leaf, root, stem and flower and recognise that plants need water to grow | Name some common plants, identify the leaf, root, stem and flower of a plant; recognise that plants are living and need water and light to grow and recognise thy can investigate the conditions plants need for growth; name a variety of common wild and garden plants, including deciduous and evergreen trees | Describe differences between plants grown in the light and in the dark and suggest how to find out about what plants need in order to grow well |
| **Wonderful Weather** | Observe the weather and notice changes which occur | Observe changes across seasons; describe weather associated with seasons & how day length varies | Observe the weather and notice differences between our country and other countries and understand why it is different |

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| **Year Two** | **Working Towards** | **Working at** | **Working Beyond** |
| **Working Scientifically** | Begin to ask simple questions; observe closely, performe simple tests using equipment; begin to identify and classify; use their observations and ideas to suggest answers to questions; begin to gather and record data to help in answering questions | 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 | independently ask simple questions and recognise that they can be answered in different ways; observing closely, independently use simple equipment and perform simple tests, identify and classify; use their observations and ideas to suggest answers to questions; independently gather and record data to help in answering questions |
| **Materials (batik)** | Begin to understand that shapes of some solid objects can be changed by squashing, bending, twisting & stretching; begin to compare suitability of wood, metal, plastic, glass, brick, rock, paper & cardboard for particular uses | know that shapes of some solid objects can be changed by squashing, bending, twisting & stretching; compare suitability of wood, metal, plastic, glass, brick, rock, paper & cardboard for particular uses; | Independently explain and describe how some solid objects can be changed by squashing, bending, twisting & stretching; independently compare suitability of wood, metal, plastic, glass, brick, rock, paper & cardboard for particular uses |
| **Materials** | Begin to understand that shapes of some solid objects can be changed by squashing, bending, twisting & stretching; begin to compare suitability of wood, metal, plastic, glass, brick, rock, paper & cardboard for particular uses | know that shapes of some solid objects can be changed by squashing, bending, twisting & stretching; compare suitability of wood, metal, plastic, glass, brick, rock, paper & cardboard for particular uses; | Independently explain and describe how some solid objects can be changed by squashing, bending, twisting & stretching; independently compare suitability of wood, metal, plastic, glass, brick, rock, paper & cardboard for particular uses |
| **Healthy animals** | Recognise differences between animals and plants; makes some measurements using non-standard units | notice that animals incl humans have offspring which grow into adults; describe basic needs of animals incl humans for survival (water, food & air); describe importance for humans of exercise, eating the right amounts of different types of food, & hygiene | Identify ways in which the appearance of humans changes as they get older and some characteristics that will not alter; explain what their block graphs and charts show |
| **Ready, Steady, Grow!** | Recognise that plants need light, warmth and water to grow and make some measurements of the height of plants | observe and describe how seeds & bulbs grow into mature plants; describe how plants need water, light & suitable temps to grow & stay healthy; measuring the heights of plants | Explain why healthy roots and healthy stem are needed for plants to grow; recognise that the leaves of a plant are associated with healthy growth; explain in simple terms why a number of plants should be used to provide reliable evidence about plant growth |
| **Gardens & allotments / Habitats to include forest school.** | Suggest reasons why different plants and animals are found in the different environments | explore & compare the differences between things that are living, dead, & things that have never been alive; identify that living things live in habitats & describe how diff habitats provide needs of diff kinds of animals & plants & how they depend on each other; identify & name a variety of plants & animals in their habitats, including micro-habitats; describe how animals obtain food from plants & other animals, using the idea of a simple food chain, & identify & name diff. sources of food | Suggest reasons why different plants and animals are found in the different environments |

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| **Year Three** | **Working Towards** | **Working at** | **Working Beyond** |
| **Working Scientifically** | begin to ask scientific questions; setting up simple practical enquires and compare tests; observe and use standard measurements with support; to record data in different ways (such as a bar chart); report findings; make own predictions and have an idea on its conclusion; identify differences and similarities | asking relevant questions and using different types of scientific enquiries to answer them; setting up simple practical enquiries, comparative and fair tests; making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment; gathering, recording, classifying and presenting data in a variety of ways to help in answering questions; recording findings using simple scientific language, bar charts, and tables; reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions; using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions; identifying differences, similarities or changes related to simple scientific ideas and processes; using straightforward scientific evidence to answer questions or to support their findings | Independently asking relevant questions and setting up simple practical enquiries, independently observations and taking accurate measurements using standard units, independently using a range of equipment; gathering, recording, classifying and presenting data; independently recording and reporting on findings and conclusions in using oral and written explanations, independently makes predictions, suggests improvements and raise further questions |
| **Rocks and Fossils** | Name one or two rocks; say that there are rocks under surfaces and make measurements of time and volume | compare & group together diff kinds of rocks on the basis of their appearance & simple physical properties; describe simply how fossils are formed when things that have lived are trapped within rock; recognise soils are rocks & organic matter | Explain how to make a test fair and explain what their experiments and investigations show in terms of the characteristics and uses of the soils and rocks tested |
| **Magnets** | Describe what happens when some materials are put near a magnet; with help test and idea and make comparisons between results | compare how things move on different surfaces; notice some forces need contact between two objects, but magnetic forces can act at a distance; observe how magnets attract or repel each other & attract some materials & not others; compare & group variety of materials on basis of attraction to a magnet & identify magnetic materials; describe magnets as having two poles; predict if two magnets will attract or repel each other, depending on which poles are facing; describe and explain how magnets can be used | Describe the difference between a magnet and a magnetic materials and explain results in terms of their scientific knowledge and understanding |
| **Animals including Humans** | State that they have skeletons; describe some observable characteristic of bones and make measurements when investigating a question | identify that animals need right types & amount of nutrition, & that they get nutrition from what they eat; identify that humans & some other animals have skeletons & muscles for support, protection & movement | State that when one muscle contracts another relaxes and make an evaluation of the extent to which the evidence collected to answer a question supports the prediction made |
| **Light and Shadows** | Recognise that shadows are similar in shape to the objects forming them, that a shadow from the Sun changes over the course of a day and make observations of changes in shadows | recognise that they need light in order to see things and that dark is the absence of light; notice light is reflected from surfaces; recognise that light from the sun can be dangerous & that there are ways to protect their eyes; recognise shadows are formed when the light from a light source is blocked by an opaque object; find patterns in way that the size of shadows change | Explain that the changes in shadows from the Sun over the course of a day arise from the movement of the Earth and that even transparent objects block some light and form shadows |
| **Plants** | Begin to identify some different parts of flowering plants such as roots/leaves/stem; to understand what plants needs to stay alive; understand the plant lifecycle | identify & describe functions of different parts of flowering plants: roots, stem/trunk, leaves, & flowers; investigate way water is transported within plants; investigate way water is transported within plants; explore the part flowers play in the life cycle of plants | name the parts of a flower and begin to explain how pollen and seeds are dispersed; describe some of the conditions tested in investigating germination and recognise some stages in the development of humans |

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| **Year Four** | **Working Towards** | **Working at** | **Working Beyond** |
| **Working Scientifically** | Begin to ask and answer relevant scientific questions; set up basic practical enquiries, observe & measure using standard units, recording & presenting data in a variety of ways; record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts; begin to report on findings and draw conclusions, make predictions; identify differences, similarities or changes related to simple scientific ideas | asking relevant questions & using different types of scientific enquiries to answer them; set up practical enquiries, comparative & fair tests; systematic observation & accurate measurement using standard units, using a range of equipment; gathering, recording, classifying & presenting data in a variety of ways to help in answering questions; record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts,& tables; reporting on findings from enquiries; using results to draw conclusions, make predictions for new values, suggest improvements & raise further ?s; identifying differences, similarities or changes related to simple scientific ideas & processes; use evidence to answer ?s or support findings | Independently asking relevant questions & using different types of scientific enquiries to answer them; independently setting up practical enquiries, using a range of equipment; gathering, recording, classifying & presenting data in a variety of ways to help in answering questions; interpedently record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts,& tables; independently reporting on findings from enquiries; using results to draw conclusions, make predictions for new values and suggest improvements & raise further ?s; |
| **Animals including Humans** | Begin to understand the human body and identify some parts of the digestive system; construct a simple food chain and identify its predators and prey | describe functions of human digestive system; identify diff types of human teeth & their functions; construct & interpret a variety of food chains, identifying producers, predators & prey | state that animals and plants are found in some places and not others, and state why; group animals and explain criteria; use simple keys to identify local plants and animals; sequence valid food chains relating to the local habitats using the arrow conventions correctly |
| **Sound** | Suggest ways of producing sounds; distinguish between pitch and loudness, and suggest how to change the sound made by an instrument | identify how sounds are made, associating some of them with something vibrating; recognise that vibrations from sounds travel through a medium to the ear; find patterns between the pitch of a sound & features of the object that produced it; find patterns between the volume of a sound & the strength of the vibrations that produced it; recognise that distance increases faintness of sound | Describe ways in which the pitch of a sound made by a particular instrument or vibrating object can be raised or lowered and identify what is vibrating in a range of musical instruments |
| **Living things and their habitats** | Identify some local habitats; name a few of the organisms that live there and, with help, identify these using simple keys and make observations of animals and plants | recognise living things can be grouped variously, explore & use classification keys to group, identify & name living things in their local & wider environment, recognise environments can change & that this can sometimes pose dangers to living things | Represent feeding relations within a habitat but food chains; explain that food chains begin with a green plant which ‘produces’ food for other organisms and explain why it is necessary to use a reasonably large sample when investigating the preferences of small invertebrates |
| **Electricity** | Construct a simple working circuit, and explain why some circuits work and others do not | identify common appliances that run on electricity; construct a simple series electrical circuit, identifying & naming its basic parts; identify if a lamp will light in a series circuit, based on whether it is part of a complete loop with a battery; recognise that a switch opens & closes a circuit & associate this with a lamp lighting in a series circuit; recognise some common conductors & insulators, & associate metals with being good conductors | Explain how they matched different components for a particular circuit and describe what may happen if the components are not matched |
| **States of Matter** | Recognise that temperature is a measure of how ho9t and cold subjects are; identify some everyday uses of thermal insulators; use thermometers to measure temperature and present results in tables prepared for them; name some solids and liquids; describe that when ice melts it turns to a liquid, that salt or sugar dissolve in water but sand won’t and separate an undissolved sold from a liquid by filtering | compare & group materials together, according to whether they are solids, liquids or gases; observe that materials change state when heated or cooled & measure or research temperature at which this happens in degrees Celsius (˚C); identify evaporation & condensation in water cycle & associate the rate of evaporation with temperature; separate mixtures; describe different types of behaviours when solids are mixed with water; properties of liquids - understand that although liquids change shape they don't change volume; compare how liquids and powders behave | Recognise that objects cool or warm to the temperature of their surroundings when they are left; recognise that metals are both good thermal and good electrical conductors; that that some materials e.d. metal, have to be heated to a very high temperature before they melt and explain that when solids dissolve they break up so small they pass through the holes in the filter paper |

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| **Year Five** | **Working Towards** | **Working at** | **Working Beyond** |
| **Working Scientifically** | plan diff types of scientific enquiries, beginning to recognise & control variables and take measurements, record data & results using labels, classification keys, tables, bar & line graphs; make predictions to set up fair tests; report & present findings, including conclusions, causal relationships & simple explanations of results in oral & written forms; identify scientific evidence that has been used to support or refute ideas or arguments | plan diff types of scientific enquiries to answer questions, including recognising & controlling variables; take measurements with accuracy & precision, taking repeat readings when appropriate; record data & results of increasing complexity using scientific diagrams & labels, classification keys, tables, scatter graphs, bar & line graphs; use test results to make predictions to set up further comparative & fair tests; report & present enquiry findings, including conclusions, causal relationships & explanations of &degree of trust in results in oral & written forms; identify scientific evidence that has been used to support or refute ideas or arguments | To independently plan diff types of scientific enquiries to answer questions, including recognising & controlling variables; to independently take measurements with accuracy & precision, taking repeat readings when appropriate; record data & results of increasing complexity using scientific diagrams & labels, classification keys, tables, scatter graphs, bar & line graphs; to independently use test results to make predictions to set up further comparative & fair tests; report & present enquiry findings, including conclusions, causal relationships & explanations of &degree of trust in results in oral & written forms; identify scientific evidence that has been used to support or refute ideas or arguments |
| **Living things and their habitats** | name the parts of a flower and explain how pollen and seeds are dispersed; describe some of the conditions tested in investigating germination and recognise some stages in the development of humans | describe differences in the life cycles of a mammal, an amphibian, an insect & a bird; describe reproduction process in plants & animals | explain why it is important to use a number of seeds or plants in an investigation into growth or germination |
| **Properties of Materials** | State that air is a gas; recognise that gases flow from place to place and measure volumes of liquid | compare & group together materials based on properties, including hardness, solubility, transparency, conductivity (electrical & thermal) & response to magnets; know some materials will dissolve in liquid to form solution & describe how to recover a substance from a solution; use knowledge of solids, liquids & gases to decide how mixtures might be separated, including through filtering, sieving & evaporating; give reasons, based on evidence from comparative & fair tests, for the particular uses of everyday materials, including metals, wood & plastic; demonstrate that dissolving, mixing & changes of state are reversible changes; explain some changes form new materials & are not usually reversible, including changes associated with burning & the action of acid on bicarb of soda | Explain the relationship between liquids and solids in terms of evaporation, make clear distinctions between the properties of solids, liquids and gases and explain why observations and measurements need to be repeated |
| **Changing Materials** | Describe how to change water into ice and steam into water; describe a few examples where these changes occur, and recognise patterns in data; recognise that a solid can be recovered from a solution by evaporation; with help, investigate an aspect of dissolving and present results in a suitable table; use careful observation to describe a number of changes and identify whether some changes are reversible or not | compare & group together materials based on properties, including hardness, solubility, transparency, conductivity (electrical & thermal) & response to magnets; know some materials will dissolve in liquid to form solution & describe how to recover a substance from a solution; use knowledge of solids, liquids & gases to decide how mixtures might be separated, including through filtering, sieving & evaporating; give reasons, based on evidence from comparative & fair tests, for the particular uses of everyday materials, including metals, wood & plastic; demonstrate that dissolving, mixing & changes of state are reversible changes; explain some changes form new materials & are not usually reversible, including changes associated with burning & the action of acid on bicarb of soda | Explain how changing conditions affects processes such as evaporation and condensation, and give reasons for predictions made using patterns in the data; present results in a line graph where appropriate; explain why it is important to repeat measurements and how to deal with repeated results when drawing a graph; explain that in some cases the new materials made are gases and identify some evidence *eg vigorous bubbling* for the production of gases |
| **Forces** | Identify friction as a force; describe some ways in which friction between solid surfaces can be increased and identify some trends or patterns in observations and measurements; identify weight as a force; recognise that more than one force can act on an object; measure forces using a forcemeter and present measurements in tables | explain that unsupported objects fall towards Earth due to the force of gravity acting between them & Earth; identify effects of air resist., water resist. & friction, that act between moving surfaces; recognise some mechanisms, include levers, pulleys & gears, allow a smaller force to have a greater effect | Describe situations in which frictional forces are helpful as well as those in which frictional forces resist motion; describe and explain the motion of some familiar objects in terms of several forces acting on them |
| **Earth and Space** | recognise that the Earth, Sun and Moon are spherical and describe how shadows change as the Sun appears to move across the sky | describe movement of Earth, & other planets, relative to Sun in solar system; describe movement of the Moon relative to Earth; describe Sun, Earth & Moon as approximately spherical bodies; use idea of Earth’s rotation to explain day & night & the apparent movement of sun in sky | explain that the changes in the appearance of the Moon over a period of 28 days arise from the Moon orbiting the Earth once every 28 days; independently represent times of sunrise and sunset in graphs |
| **Animals including Humans** | Begin to describe changes as humans develop to old age; identify local habitats and recognise those of similar scale or diversity; begin to explain why animals and plants are found in some places and not others, begin to group animals and explain criteria; use simple keys to identify local plants and animals; sequence simple valid food chains relating to the local habitats using the arrow conventions correctly | describe changes as humans develop to old age; identify local habitats and recognise those of similar scale or diversity; state that animals and plants are found in some places and not others, and state why; group animals and explain criteria; use simple keys to identify local plants and animals; sequence valid food chains relating to the local habitats using the arrow conventions correctly | Independently describe changes as humans develop to old age; identify local habitats and recognise those of similar scale or diversity; state and scientifically explain why animals and plants are found in some places and not others, independently group animals and explain criteria; use simple keys to identify local plants and animals; sequence valid food chains relating to the local habitats using the arrow conventions correctly |

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| **Year Six** | **Working Towards** | **Working at** | **Working Beyond** |
| **Working Scientifically** | plan diff types of scientific enquiries, beginning to recognise & control variables and take measurements, record data & results using labels, classification keys, tables, bar & line graphs; make predictions to set up fair tests; report & present findings, including conclusions, causal relationships & simple explanations of results in oral & written forms; identify scientific evidence that has been used to support or refute ideas or arguments | plan diff types of scientific enquiries to answer questions, including recognising & controlling variables; take measurements with accuracy & precision, taking repeat readings when appropriate; record data & results of increasing complexity using scientific diagrams & labels, classification keys, tables, scatter graphs, bar & line graphs; use test results to make predictions to set up further comparative & fair tests; report & present enquiry findings, including conclusions, causal relationships & explanations of degree of trust in results in oral & written forms; identify scientific evidence that has been used to support or refute ideas or arguments | To independently plan diff types of scientific enquiries to answer questions, including recognising & controlling variables; to independently take measurements with accuracy & precision, taking repeat readings when appropriate; record data & results of increasing complexity using scientific diagrams & labels, classification keys, tables, scatter graphs, bar & line graphs; to independently use test results to make predictions to set up further comparative & fair tests; report & present enquiry findings, including conclusions, causal relationships & explanations of &degree of trust in results in oral & written forms; identify scientific evidence that has been used to support or refute ideas or arguments |
| **Living things and their habitats** | recognise that a green plant needs light and water to grow well, that different animals and plants live in different habitats, and that some animals feed on other animals and some on plants; use keys to identify some animals and plants; recognise that very small living things can cause illness | describe how micro-organisms, plants & animals are classified into groups. according to observable characteristics & based on similarities & differences; give reasons for classifying plants & animals based on specific characteristics | recognise that green plants are the source of food for all animals and that they produce material for new growth from air and water in the presence of light describe evidence that yeast is living; explain how micro-organisms can move from one food source to another and how this can cause food poisoning |
| **Animals including Humans** | Begin to identify & name main parts of circulatory system & describe functions of heart, blood vessels & blood; recognise the impact of diet, exercise, drugs & lifestyle on the way their bodies function; begin to describe the ways in which nutrients & water are transported within animals, including humans | identify & name main parts of circulatory system & describe functions of heart, blood vessels & blood; recognise the impact of diet, exercise, drugs & lifestyle on the way their bodies function; describe the ways in which nutrients & water are transported within animals, including humans | To identify, describe & name main parts of circulatory system & describe functions of heart, blood vessels & blood; to recognise and describe the impact of diet, exercise, drugs & lifestyle on the way their bodies function; describe and scientifically explain the ways in which nutrients & water are transported within animals, including humans |
| **Evolution and Inheritance** | To recognise that living things have changed over time; understand fossils inhabited the Earth millions of years ago; recognise living things produce offspring of the same kind, but offspring are not identical to their parents; begin to understand and identify how animals & plants are adapted to suit their environment in different ways & that adaptation may lead to evolution | recognise that living things have changed over time & that fossils provide information about living things that inhabited the Earth millions of years ago; recognise living things produce offspring of the same kind, but offspring are not identical to their parents; identify how animals & plants are adapted to suit their environment in different ways & that adaptation may lead to evolution | to recognise, explain and describe how living things have changed over time & that fossils provide information about living things that inhabited the Earth millions of years ago; to explain how living things produce offspring of the same kind, but offspring are not identical to their parents; to identify, explain and describe how animals & plants are adapted to suit their environment in different ways & that adaptation may lead to evolution |
| **Light and Electricity** | recognise that when light is blocked, a shadow is formed, and that reflections can be seen in shiny surfaces; make measurements and present these in a table  recognise conventional symbols for some electrical components and construct some working circuits with specified components | recognise that light appears to travel in straight lines; use light; to explain that objects are seen because they give out or reflect light into the eye; explain that we see things because light travels from light sources to our eyes or from light sources to objects & then to our eyes; use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them  associate brightness of a lamp or volume of a buzzer with the number & voltage of cells used in the circuit; compare & give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers & the on/off position of switches; use recognised symbols to represent circuit in a diagram; recognise some mechanisms, including levers, pulleys & gears, allow a smaller force to have a greater effect | explain the difference between shadow formation and reflection in terms of the path of light  interpret more complex circuit diagrams and describe the differences between wires usually used for circuits and fuse wires |