|                   | DARTMOOR MULTI ACADEMY TRUST<br>SCIENCE CURRICULUM OVERVIEW   |   |  |   |   |  |  |  |  |
|-------------------|---|---|--|---|---|--|--|--|--|
| EYFS<br>themes    | What makes you<br>unique!   | Let's celebrate!  | My world and me!   | Adventure!  | Growing!  | The great outdoors!  |  |  |  |
| Core<br>knowledge | MYSELF – My SENSES<br>Know how to explore my<br>new environment using my<br>5 senses<br>Know about healthy diets<br>and how food helps our<br>bodies to grow<br>Know that exercise helps us<br>to stay healthy<br>Can use all of my senses<br>when exploring natural<br>materials | MATERIALS<br>Know about and can explore<br>different types of materials<br>with similar and different<br>properties<br>Can select the best material<br>for a specific task<br>Can talk about the<br>differences between<br>materials and changes that I<br>notice.<br>Know that some materials<br>change irreversibly | SEASONS AND WEATHER<br>Know about and can<br>observe change<br>Know how weather affects<br>our lives<br>Know how to protect<br>myself in the weather<br>Know the weather changes<br>with the seasons | FORCES<br>Can explore and talk about<br>different forces I can feel<br>Can explore how things work<br>Know the difference<br>between push and pull,<br>strength and speed | PLANTS AND LIFE CYCLES<br>Know what a plant and animal<br>needs to grow and thrive.<br>Know about growth, decay and<br>changes over time<br>Can name some parts of a plant<br>Know the basic lifecycle of a<br>butterfly/frog/chick | THE NATURAL WORLD<br>Can explore a range of<br>experiences in nature<br>Know about features in my<br>own environment<br>Know about natural and found<br>objects<br>Know that living things need to<br>be treated with respect and<br>care<br>Know about similarities,<br>differences, patterns and<br>change in nature.<br>Know that some environments<br>are different to the one in<br>which I live. |  |  |  |

|                   | Sound   | Materials   | Seasons and Weather  | Building things  | Plants  | Animal Kingdom   |
|-------------------|---|---|--|--|---|--|
| NC links          |   | Distinguish between an<br>object and the material from<br>which it is made<br>Identify and name a variety<br>of everyday materials,<br>including wood, plastic, glass,<br>metal, water, and rock<br>Describe the simple physical<br>properties of a variety of<br>everyday materials<br>Compare and group together<br>a variety of everyday<br>materials on the basis of<br>their simple physical<br>properties   | Observe changes across<br>the 4 seasons<br>Observe and describe<br>weather associated with<br>the seasons and how day<br>length varies.  | Distinguish between an<br>object and the material from<br>which it is made<br>Identify and name a variety<br>of everyday materials,<br>including wood, plastic, glass,<br>metal, water, and rock<br>Describe the simple physical<br>properties of a variety of<br>everyday materials<br>Compare and group together<br>a variety of everyday<br>materials on the basis of their<br>simple physical properties | Identify and name a variety of<br>common wild and garden<br>plants, including deciduous and<br>evergreen trees<br>Identify and describe the basic<br>structure of a variety of<br>common flowering plants,<br>including trees<br>Observe and describe how<br>seeds and bulbs grow into<br>mature plants<br>FInd out and describe how<br>plants need water, light and a<br>suitable temperature to grow<br>and stay healthy. | Identify and name a variety of<br>common animals including,<br>fish, amphibians, reptiles, birds<br>and mammal<br>Identify and name a variety of<br>common animals that are<br>carnivores, herbivores and<br>omnivores<br>Describe and compare the<br>structure of a variety of<br>common animals (fish,<br>amphibians, reptiles, birds and<br>mammals including pets)<br>Identify, name, draw and label<br>the basic parts of the human<br>body and say which part of the<br>body is associated with each<br>sense. |
| Core<br>knowledge | Identify the way sound is<br>made through vibration in a<br>range of different musical<br>instruments from around<br>the world;<br>Describe how the pitch and<br>volume of sounds can be<br>changed in a variety of ways. | Identify materials: what they<br>are made from and their<br>properties (Squash, bendy)<br>Use the terms transparent,<br>translucent and opaque to<br>Describe materials and group<br>them accordingly.<br>Group materials according to<br>set criteria and describe<br>them using the appropriate<br>scientific terms<br>Identify objects which float<br>and sink and provide an<br>explanation (Heavy/light/<br>density)<br>Know the terms: absorb and<br>waterproof | Observe and talk about<br>changes in the weather<br>and the seasons.<br>Conduct seasonal<br>research, such as<br>collecting rain fall data /<br>wind direction.<br><b>Note:</b> Children should be<br>warned that it is not safe<br>to look directly at the Sun,<br>even when wearing dark<br>glasses. | Identify and discuss the uses<br>of different everyday<br>materials<br>Know about the properties of<br>materials that make them<br>suitable or unsuitable for<br>particular purposes<br>Know about people who have<br>developed useful new<br>materials, for example John<br>Dunlop, Charles Macintosh or<br>John McAdam.  | Know common names of<br>flowers, examples of deciduous<br>and evergreen trees, and plant<br>structures.<br>Label main parts of plants and<br>trees<br>Describe the basic<br>requirements of plants for<br>germination, growth and<br>survival, as well as to the<br>processes of reproduction and<br>growth in plants.  |  |

|            |  | Carry out an experiment to<br>identify which materials are<br>waterproof<br>Understand the word<br>magnetic and simple<br>language associated with it.<br>Describe materials that might<br>be magnetic.<br>Identify materials and their<br>suitable use.<br>'What is the best material<br>for an umbrella?for lining a<br>dog basket?for curtains?<br>for a bookshelf?for a<br>gymnast's leotard?' |   |  |   |  |
|------------|--|--|---|--|---|--|
| Vocabulary | Sound/vibration<br>Medium/ear/pitch<br>Volume/faint(er)<br>source of the sound<br>thickness/insulation | hard/soft/stretchy/stiff<br>shiny/dull/rough/smooth<br>bendy/not bendy<br>waterproof/not waterproof<br>absorbent/not absorbent<br>opaque/transparent<br>brick/paper<br>fabrics/elastic (noun)<br>foil  | Year/ season/ Spring<br>Summer/ Autumn<br>Winter/ sunny<br>Cloudy/windy/ dry<br>Temperature/<br>climate | Wood/metal<br>Plastic/glass<br>Brick/rock<br>Paper/cardboard<br>Solid/liquid<br>Gas/squashing<br>Bending/twisting<br>Stretching/elastic (v)<br>Properties/suitable<br>unsuitable | Plant/deciduous<br>Evergreen\leaves<br>flowers (blossom)<br>petals\fruit\Roots\bulb<br>seed\trunk\bud\branches<br>stem\magnifying glass | characteristics\living<br>non-living\dead<br>habitat\micro-habitat<br>food chain\source<br>environment\food<br>shelter\seashore\sea<br>ocean\woodland<br>forest\rainforest<br>invertebrate<br>vertebrate |

|                   | Light   | Space  | Habitats   | Human Lifestyle  | Changing Materials  | Mixing and Making   |
|-------------------|---|--|--|--|---|---|
| NC links          |   |  | Living things and their<br>habitats<br>Explore and compare the<br>differences between<br>things that are living,<br>dead, and things that have<br>never been alive<br>Identify that most living<br>things live in habitats to<br>which they are suited and<br>describe how different<br>habitats provide for the<br>basic needs of different<br>kinds of animals and<br>plants, and how they<br>depend on each other<br>Identify and name a<br>variety of plants and<br>animals in their habitats,<br>including microhabitats<br>Describe how animals<br>obtain their food from<br>plants and other animals,<br>using the idea of a simple<br>food chain, and identify<br>and name different<br>sources of food. | Notice that animals, including<br>humans, have offspring<br>which grow into adults<br>Find out about and describe<br>the basic needs of animals,<br>including humans, for survival<br>(water, food and air)<br>Describe the importance for<br>humans of exercise, eating<br>the right amounts of<br>different types of food, and<br>hygiene. | Identify and compare the<br>suitability of a variety of<br>everyday materials, including<br>wood, metal, plastic, glass,<br>brick, rock, paper and<br>cardboard for different uses<br>Find out how the shapes of<br>solid objects made from some<br>materials can be changed by<br>squashing, bending, twisting<br>and stretching | Compare and group materials<br>together, according to whether<br>they are solids, liquids or gases<br>Observe that some materials<br>change state when they are<br>heated or cooled, and measure<br>or research the temperature at<br>which this happens in degrees<br>Celsius (°C)<br>Identify the part played by<br>evaporation and condensation<br>in the water cycle and<br>associate the rate of<br>evaporation with temperature.<br>(KS2) |
| Core<br>knowledge | Know the difference<br>between light and dark<br>Identify different light<br>sources and know why light<br>is important<br>Know the steps that enable | Demonstrate an<br>understanding of space and<br>know how can we find out<br>about it?<br>Can name and describe<br>planets, (Interesting facts) | Identify the difference<br>between living and non-<br>living things<br>Know what a habitat is and<br>describe different habitats<br>and understand the term  | Label, describe and<br>understand the function and<br>importance of the main parts<br>of the human body.<br>Explain what germs are and<br>the importance of hygiene  | Describe which materials<br>different objects are made<br>from<br>Use appropriate vocabulary to<br>describe materials (opaque,<br>waterproof, translucent)  | Identify and know the<br>differences between solids,<br>liquids and gases<br>Understand the term 'Change<br>of status' and label some of<br>the ways you can change the   |
|                   | us to see<br>Understand how the earth   | Know how the earth rotates and orbits and can explain  | organism.<br>Identify and describe   | Use the results of an<br>investigation to answer   | Know how the shape of<br>objects can be changed and   | state of a substance.<br>Understand the concept of  |

| Vocabulary | moves<br>Describe the properties of<br>reflective and non-reflective<br>materials<br>Conduct an investigation as<br>to whether a material is<br>reflective<br>Know how a shadow is<br>formed and the effect the<br>sun has on its shape.<br>Can follow instructions to<br>conduct an investigation and<br>write a conclusion<br>Light/dark/shadow<br>reflective/mirror<br>surface/<br>natural/artificial<br>source of light/block<br>opaque/translucent<br>transparent | why the earth is tilted<br>Can describe stars and know<br>what a constellation is and<br>draw a constellation<br>Know simple facts about<br>when, how and by whom<br>space was discovered<br>Discuss what the future<br>might hold for space travel.<br>Solar system/Sun/star<br>Earth/Moon/orbit<br>Spherical/rotation/day<br>Night/seasons<br>Mercury/ Venus/ Earth,<br>Mars/Jupiter/ Saturn,<br>Uranus/ Neptune/Pluto<br>Sundial /midday<br>Midnight/astronomical | microhabitats<br>Know how a desert is<br>formed, where they are<br>and animals that live there<br>and why<br>Know how a rainforest is<br>formed, where they are<br>and animals that live there<br>and why<br>Describe an urban habitat<br>and the animals that are<br>suitable to live<br>Can match animals to<br>different habitats and<br>explain why they live<br>there.<br>Characteristics/<br>Living/non-living<br>Dead/habitat<br>micro-habitat<br>food chain<br>source/environment<br>food/shelter<br>seashore/sea/ocean<br>woodland/-+forest<br>rainforest | questions<br>Name a range of<br>people whose jobs it<br>is to keep us<br>healthy.<br>Describe the contributions<br>of Edward Jenner and Mary<br>Seacole.<br>Describe and explain the use<br>of each food group<br>Design a balanced meal.<br>Describe how humans<br>change as they age.<br>Identify the differences<br>between different points in<br>the human lifecycle and<br>draw a human timeline.<br>Animal/human<br>reproduction<br>offspring/baby<br>toddler/child<br>teenager/adult<br>life-cycle/egg/caterpillar<br>pupa/butterfly/spawn<br>tadpole/frog/lamb/sheep<br>grow(th)/water/food/air<br>survival/exercise<br>nutrition/diet (eating<br>habits)/hygiene/health(y) | carry out a simple<br>investigation<br>Record findings in a table<br>Understand the term elasticity<br>Know the difference between<br>absorbent and waterproof<br>Know and identify the<br>difference between raw and<br>synthetic materials<br>Identify the best material for<br>performing different functions.<br>hard/soft/stretchy/stiff<br>shiny/dull/rough/smooth<br>bendy/not bendy<br>waterproof/not waterproof<br>absorbent/not absorbent<br>opaque/transparent<br>brick/paper<br>fabrics/elastic (noun)<br>foil | mixing.<br>Explains the terms soluble and<br>insoluble and carry out a<br>simple investigation to<br>identify soluble and insoluble<br>materials<br>Know what happen when you<br>mix a solid and a liquid<br>together<br>Explain how mixtures can be<br>separated<br>Understand the terms<br>reversible and irreversible<br>changes<br>states of matter/solid<br>liquid/gas/properties<br>particles/evaporation<br>solidification<br>condensation<br>the water cycle/melting |
|------------|--|--|--|--|--|--|
| LKS2 units | Practical Skills   | Raw and Synthetic<br>Materials   | Sound  | Forces   | Plants   | Ecosystems   |

| NC links  | Asking relevant questions     | Children understand the       | Identify how sounds are               | Compare how things move       | Identify and describe the        | Identify that animals including |
|-----------|-------------------------------|-------------------------------|---------------------------------------|-------------------------------|----------------------------------|---------------------------------|
| INC IINKS | and using different types of  | differences in raw and        | made associating some of              | on different surfaces S       | functions of different parts of  | humans, nood the right types    |
|           | sciontific onquirios to       | synthetic materials           | thom with comothing                   | Notice that some forces need  | flowering plants: roots          | and amount of putrition and     |
|           | answer them Sc                | Children understand the link  | vibrating                             | contact between 2 objects     | stom (trunk looves and flowers   | that they cannot make their     |
|           | Sotting up simple practical   | botwoon row and synthetic     | NDIating<br>Recognize that vibrations | but magnetic forces can act   | Stelli, truik, leaves and nowers | chart they cannot make their    |
|           | setting up simple practical   | between raw and synthetic     | from counds trough                    | but magnetic forces can act   | Explore the requirements of      | from what they get nutrition    |
|           | faintes, comparative and      | materials and now materials   | the second second strate              |                               | plants for life and growth (air, | that living this as any ha      |
|           | fair tests                    | are made.                     | through a medium to the               | Observe now magnets attract   | light, water, nutrients from     | that living things can be       |
|           | Making systematic and         | Explain that some changes     | ear<br>Eisel a staars katus on the    | or repei each other and       | soll, and room to grow) and      | grouped in a variety of ways    |
|           | careful observations and,     | result in the formation of    | Find patterns between the             | attract some materials and    | now they vary from plant to      | Recognise that environments     |
|           | where appropriate, taking     | new materials, and that this  | pitch of a sound and                  | not others                    | plant                            | can change and that this can    |
|           | accurate measurements         | kind of change is not usually | features of the object that           | Compare and group together    | Investigate the way in which     | sometimes pose dangers to       |
|           | using standard units, using a | reversible                    | produced it                           | a variety of everyday         | water is transported within      | living things.                  |
|           | range of equipment,           | Children understand the       | Find patterns between the             | materials on the basis of     | plants                           | Construct and interpret a       |
|           | including thermometers and    | importance of recycling       | volume of a sound and the             | whether they are attracted to | Explore the part that flowers    | variety of food chains,         |
|           | data loggers                  | materials                     | strength of the vibrations            | a magnet, and identify some   | play in the life cycle of        | identifying producers,          |
|           | Gathering, recording,         |                               | that produced it.                     | magnetic materials            | flowering plants, including      | predators and prey              |
|           | classifying and presenting    |                               | Recognise that sounds get             | Describe magnets as having 2  | pollination, seed formation and  |                                 |
|           | data in a variety of ways to  |                               | fainter as the distance               | poles                         | seed dispersal                   |                                 |
|           | help in answering questions   |                               | from the sound source                 | Predict whether 2 magnets     |                                  |                                 |
|           | Recording findings using      |                               | increases                             | will attract or repel each    |                                  |                                 |
|           | simple scientific language,   |                               |                                       | other, depending on which     |                                  |                                 |
|           | drawings, labelled diagrams,  |                               |                                       | poles are facing.             |                                  |                                 |
|           | keys, 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  |                               |                                       |                               |                                  |                                 |
|           |                               |                               |                                       |                               |                                  |                                 |

| Loss and process Describe what sounds Define a force and the effect<br>findings. Describe what a plant needs to<br>survive Define a habitat and ecosystem   Core<br>knowledge range of experiments<br>Define a dependent,<br>independent and control<br>variable Explain and sort and describe<br>the uses of raw materials<br>based on where they come<br>from. Describe what sounds<br>survive Define a force and the effect.<br>Can name the forces acting<br>on a range of object. Describe what they have on an object.<br>Can name the forces acting<br>on a range of object. Define a habitat and ecosystem. Define a habitat and ecosystem.   Pollow the instructions in a<br>method the sass of their<br>more and group<br>together everyday materials<br>on the basis of their<br>hardness, solubility. Describe how sounds and bop<br>together everyday materials<br>on the basis of their<br>hardness, solubility. Describe how sounds and bop<br>together everyday materials<br>of one synthetic<br>materials Describe how to name<br>the forces and<br>sound is and raw materials into synthetic<br>results Define a forces and<br>the sass of their<br>materials Define a habitat and ecosystem. Define a habitat and ecosystem.   Use scientific diagrams<br>object of some synthetic<br>materials Describe how sounds and bop<br>sound a materials into synthetic<br>results Describe how to and the properties of a<br>sound is and taw materials Describe how to ange of forces<br>materials Define a habitat and ecosystem. Define a habitat and ecosystem.   Discribe how to collect<br>results Draft an investi  |           | ideas and processes           |   |                            |                                |   |                                 |
|--|-----------|-------------------------------|---|----------------------------|--------------------------------|---|---------------------------------|
| Some straing intowing<br>spectration Some straing intowing<br>spectration Describe what sounds<br>waves are and how we<br>har sounds and stop<br>variable Define a force and the effect. Describe what a plant needs to<br>survive Define a habitat and ecosystem<br>To identify the variables in a<br>given ecosystem.   Core<br>knowledge Identify the variables in a<br>range of speniments<br>method<br>watable Explain and sort and describe<br>the uses of raw materials<br>on the basis of their<br>properties, including their<br>hardness, solubility,<br>Explain and describe the uses<br>of some synthetic materials<br>investigation Define a dependent,<br>to the basis of their<br>properties, including their<br>hardness, solubility,<br>Explain and describe the uses<br>of some synthetic materials<br>investigation Define a dependent,<br>to the basis of their<br>properties, including their<br>hardness, solubility,<br>Explain and describe the uses<br>of some synthetic materials<br>into synthetic<br>and raw materials Describe how to measure the<br>sound Describe how to measure the<br>size of a range of foljects. Describe how to measure the<br>size of a range of foljects. Describe how to measure the<br>size of a range of foljects. Describe how to measure the<br>size of a range of foljects. Describe how to measure the<br>size of a range of foljects. Describe how to measure the<br>size of a range of foljects. Describe how to measure the<br>size of a range of foljects. Describe ways of changing<br>flower and describe the<br>splain how plants make their<br>in a given ecosystem and<br>investigation Describe how to pageri<br>and fraw materials<br>on a real flower<br>properties of glass<br>Describe how to pageri<br>and the the synthetic<br>and raw materials beow the<br>splain muterials change properties<br>when made into   |           | Lising straightforward        |   |                            |                                |   |                                 |
| Science Funder Evaluate and some any exercision to support their findings. Explain and sort and describe the uses of raw materials based on where they come independent, independent and control variable Explain and sort and describe the uses of raw materials based on where they come hear sounds and stop sound and the the instructions in a given ecosystem. Define a dependent, independent and control survive Define a dependent, independ  |           | scientific ovidence to answer |   |                            |                                |   |                                 |
| Identify the variables in a france of experiments Explain and sort and describe Describe what sounds Define a force and the effect Describe what a plant needs to survive Define a habitat and ecosystem   Identify the variables in a range of experiments based on where they come from. Sound Can name the forces can have on an object Survive State what the three main a given ecosystem. Define and name some animals   Variable Compare and group Describe how sounds are on the sounds on the basis of their on the dass; of their on the sois of their on the soind sont be explain the use of a range of forces on have areage of construct and label for on the sois of their on the soind and the works. Define and the soind and the works. Define and the soind and the works.   Use scientific diagrams to object Explain that the raw materials in osynthetic materials. Sound sont and the works. Describe the the canculation on the sois of a forces.  |           | questions or to support their |   |                            |                                |   |                                 |
| Core<br>knowledgeExplain and sort and describe<br>the uses of raw materials<br>based on where they com<br>roduced and any sthat<br>a methodExplain and sort and describe<br>the uses of raw materials<br>based on where they com<br>from.Define a force and the effect<br>forces can have on an object<br>Gan name the forces acting<br>on a range of objects.Describe what a plant needs to<br>surviveDefine a habitat and ecosystem.<br>To identify the components of<br>a given ecosystem.Write a method for an<br>investigation<br>braw a range of scientific<br>diagrams<br>Use scientific diagrams to<br>identify an organism or<br>objectExplain and describe the uses<br>of some synthetic<br>materialsDescribe what sounds<br>soundDefine a force and the effect<br>forces can have on an object<br>Bescribe what Newton<br>different sounds can be<br>materials<br>soundDefine a force and the effect<br>forces can have on an object<br>Bescribe what Newton<br>different sounds can be<br>materialsDefine a habitat and ecosystem.<br>To identify a norganism or<br>a given ecosystem and<br>explain have their y anducer<br>bescribe how to collect<br>materials into synthetic<br>materialsDefine a habitat and ecosystem.<br>To identify a norganism or<br>a sound based on what the pitch of<br>a sound is and how to<br>change it and give<br>the size of a range of forces<br>bescribe how to collect<br>materials into synthetic<br>materials into synthetic<br>materialsDefine a habitat and ecosystem.<br>To identify a norganism or<br>a sound is and how to<br>than materialsDefine a document sort<br>here sound is and how to<br>the acuter sound so and how to<br>than materialsDefine a habitat and ecosystem.<br>To identify an organism or<br>a soundDescribe how to collect<br>reportExplain materialsExplain materialsDesc  |           | findings                      |   |                            |                                |   |                                 |
| Core<br>Independent,<br>independent and corrol<br>variable<br>Follow the instructions in a<br>methodLeschain and socra and describe<br>the uses of aw materials<br>on the basis of their<br>the uses of away sthat<br>digerent sounds can be<br>soundDescribe how sounds are<br>produced and ways that<br>different sounds can be<br>soundDescribe how sounds are<br>produced and ways that<br>discovered about forcesDescribe what sounds<br>and performed<br>the uses of a Newton<br>the sounds can be<br>soundDescribe what sounds<br>and performed<br>the uses of a Newton<br>the sounds can be<br>soundDescribe what sounds<br>and performed<br>the uses of a Newton<br>the accords their<br>compare and group<br>the accords the effect<br>soundDescribe what sounds<br>and performed<br>the accords the effect<br>compare and group<br>to getter everyday materials<br>on the basis of their<br>hardness; solubility,<br>the amethod for an<br>investigation<br>Draw a range of scientific<br>diagrams<br>Use scientific diagrams or<br>objectDescribe how sounds are<br>properties, including their<br>hardness; solubility,<br>made.Describe what the free<br>the uses of a Newton<br>the size of a range of forces<br>size of a range of forces<br>to draw a scientific diagram<br>and to write a conclusion for a<br>investigation<br>materials into synthetic<br>materials into synthetic<br>materials into syntheticDescribe what the fich or<br>the size of a firstional forces<br>the size of ariticinal force<br>the size of a firstional forces<br>the size of a firstional forces<br>the size of farwitational forces<br>the size of firstional force<br>the s   |           | Infumgs.                      | Fundation and an utility of all and the | Describe substances de     |                                | Describes whether also the second state | Define a habitat and a constant |
| knowledgeInduces of nameUnduces of nameSurviveSurviveInducently the components of<br>a given ecosystem.befine a dependent,<br>independent and controlbased on where they come<br>from.based on where they come<br>soundcom are sounds and stop<br>soundcom are ange of objects.com are ange of objects.can pame the forces can have on an objectSurviveDefine and hardFollow the instructions in a<br>methodcompare and group<br>together everyday materials<br>on the basis of their<br>on the basis of their<br>methodDescribe how sounds are<br>together everyday materials<br>on the basis of their<br>made.Describe how to measure the<br>size of a range of forces<br>size of a range of forces<br>to draw a scientific diagram<br>to write aconclusion for an<br>investigationDefine and identify a producer<br>in a given ecosystem and<br>explain the use of<br>size of a range of forces<br>and raw materialsDefine and identify a producer<br>in a given ecosystem and<br>explain how plants make their<br>own food.Draw a range of scientific<br>diagrams<br>objectsort materials into synthetic<br>materials change properties<br>materials change properties<br>materials change properties<br>materials change properties<br>materials change properties<br>materialsDescribe how to collect<br>materials change properties<br>operties of glass<br>Describe how to change it.Describe how angentic<br>force may lead to attraction<br>or a real flowerName the anise start<br>growtDescribe the eras and and how the<br>produce high and low<br>produce high and low<br>properties of glass<br>Describe how to hange it.Describe the cause and effect<br>or repulsionSurveyDescribe there main<br>types of variables are<br>construct show how t   | Core      | identify the variables in a   | Explain and sort and describe           | Describe what sounds       | Define a force and the effect  | Describe what a plant needs to          | Define a habitat and ecosystem  |
| Define ad dependent,<br>independent and control<br>variable<br>Follow the instructions in a<br>methodbased on where they come<br>from.hear sounds and stop<br>soundCan name the forces acting<br>an ange of Siciels.State what the three main<br>pages of xaibles are<br>Can plan an investigation into<br>the factors that affect plant<br>growthDefine and name some animals<br>that are canivores, omnivores<br>and herbivoresWrite a method for an<br>investigationon the basis of their<br>properties, including their<br>hardness, solubility.Describe how sounds are<br>produced and ways that<br>different sounds can be<br>made.Describe what Newton<br>meter.Can plan an investigation into<br>the factors that affect plant<br>growthDefine and ame some animals<br>that are canivores, omnivores<br>and herbivoresDraw a range of Scientific<br>diagrams<br>to identify an organism or<br>objectExplain and describe the uses<br>of some synthetic materials<br>and mam tarials change properties<br>of some synthetic<br>materials change properties<br>of some synthetic<br>materials change properties of sand change to<br>and arw materialsDescribe what Newton<br>the size of a range of forces<br>to araw scientific diagram<br>and to write a conclusion for an<br>investigationState what the three main<br>the factors that affect plant<br>growthDefine and identify a producer<br>in a given ecosystem.Define and identify a producer<br>in a given ecosystem and<br>that are cannivores, omnivores<br>and the witers.Draw a results table<br>Write a conclusion<br>Draft an investigation report<br>Redraft an investigation<br>reportExplain what the grows<br>and the benefits.<br>Explain what the science<br>properties of sand change to<br>properties of sand change to<br>bescribe how pager is made<br>from wood  | knowledge | range of experiments          | the uses of raw materials               | waves are and how we       | forces can have on an object   | survive                                 | To identify the components of   |
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| Draft an investigation report<br>Redraft an investigation<br>reportmade from sand and how the<br>properties of sand change to<br>the properties of glassby the amplitude of sound<br>and how to change it.Describe how a magnetic<br>force may lead to attractionflowering plants lifecyclewebs. name causes of<br>disruption to food websreportthe properties of glassGive examples of high<br>amplitude and lowor repulsionDescribe the forces acting on<br>an object that floats in waterDescribe three ways in which<br>seed dispersal takes placeHe properties of glassGive examples of high<br>amplitude and lowDescribe the forces may lead<br>to recycle paper, the process<br>and the benefits.Explain what the science<br>of acoustics involves and<br>to ercycle paper, the process<br>and the benefits.Explain what the science<br>to ercycle paper, the process<br>and the benefits.Explain what the science<br>to ercycle paper, the process<br>to ercycle paper, the process<br>and the benefits.Describe how scientists<br>to ercycle paper, ne process<br>to ercycle paper, the process<br>to ercycle paper noise that is not<br>to ercycle paper, the process<br>to ercycle paper noise that is notDescribe what gears, levers<br>and pulleys are and why they<br>to ercycle how to prove thatWater transport in plants   |           | Write a conclusion            | Describe how the glass is               | Describe what we mean      | of gravitational forces        | Describe the parts of a                 | removing organisms from food    |
| Redraft an investigation<br>reportproperties of sand change to<br>the properties of glassand how to change it.<br>Give examples of high<br>amplitude and lowforce may lead to attraction<br>or repulsionState the conditions required<br>for germinationdisruption to food websDescribe how paper is made<br>from wood and its usesamplitude and lowDescribe the forces acting on<br>amplitude soundDescribe the forces may leadDescribe three ways in which<br>seed dispersal takes placeExplain why it is a good thing<br>to recycle paper, the process<br>and the benefits.Explain what the science<br>of acoustics involves and<br>describe how scientistsExplain why forces may lead<br>to it floating or sinking<br>and pulleys are and why theyGive the three main steps of<br>water transport in plants  |           | Draft an investigation report | made from sand and how the              | by the amplitude of sound  | Describe how a magnetic        | flowering plants lifecycle              | webs. name causes of            |
| reportthe properties of glassGive examples of high<br>amplitude and lowor repulsionfor germinationDescribe how paper is made<br>from wood and its usesamplitude and lowDescribe the forces acting on<br>an object that floats in waterDescribe three ways in which<br>seed dispersal takes placeExplain why it is a good thing<br>to recycle paper, the process<br>and the benefits.Explain what the science<br>of acoustics involves and<br>describe how scientistsExplain why forces may lead<br>to it floating or sinking<br>Describe what gears, leversGive the three main steps of<br>water transport in plantsExplain making syntheticdampen noise that is not<br>and pulleys are and why theyDescribe how to prove that   |           | Redraft an investigation      | properties of sand change to            | and how to change it.      | force may lead to attraction   | State the conditions required           | disruption to food webs         |
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| and the benefits.describe how scientistsDescribe what gears, leverswater transport in plantsExplain making syntheticdampen noise that is notand pulleys are and why theyDescribe how to prove that   |           |                               | to recycle paper, the process           | of acoustics involves and  | to it floating or sinking      | Give the three main steps of            |                                 |
| Explain making synthetic dampen noise that is not and pulleys are and why they Describe how to prove that  |           |                               | and the benefits.                       | describe how scientists    | Describe what gears, levers    | water transport in plants               |                                 |
|  |           |                               | Explain making synthetic                | dampen noise that is not   | and pulleys are and why they   | Describe how to prove that              |                                 |
| materials takes energy wanted. are helpful. water moves up a plants stem   |           |                               | materials takes energy                  | wanted.                    | are helpful.                   | water moves up a plants stem            |                                 |
| Explain the negative impact Describe how engineers Describe applications of Describe what a plant  |           |                               | Explain the negative impact             | Describe how engineers     | Describe applications of       | Describe what a plant                   |                                 |
| of using raw materials build venues to improve gears, levers and pulley adaptation is, and how they  |           |                               | of using raw materials                  | build venues to improve    | gears, levers and pulley       | adaptation is, and how they             |                                 |
| State what sustainably sound quality adapt to extreme hot and  |           |                               | State what sustainably                  | sound quality              |                                | adapt to extreme hot and                |                                 |

|            |   | means Describe ways to live<br>sustainably<br>Explain some difficulties with<br>living sustainably  | Explain how a string<br>telephone works Describe<br>how loudspeakers and<br>microphones work<br>Explain how animals and<br>submarines use echo-<br>location |   | extreme cold<br>Describe how plants adapt to<br>attract animals or keep them<br>away   |  |
|------------|---|---|---|---|--|--|
| Vocabulary | Test/Diagrams<br>Results/Conclusion<br>Investigation/Variable<br>Experiment/Method<br>Organism/report | properties of materials<br>hardness, solubility,<br>transparency, conductivity<br>(electrical and thermal)<br>dissolve/solution<br>mixture/separation<br>solids, liquids and gases<br>filtering, sieving and<br>evaporating/changes of<br>state//reversible<br>irreversible/acid<br>burning/bicarbonate of<br>soda/chemical reaction<br>rusting/evaporation<br>filtering/sieving<br>melting | Sound/vibration<br>Medium/ear/pitch<br>Volume/faint(er)<br>source of the sound<br>thickness/insulation  | Forces/push/pull<br>Attract/repel/friction<br>magnet(ic)/bar magnet/ring<br>magnet<br>button magnet<br>horseshoe magnet<br>contact/poles/polarity | Roots/stem/trunk/leaves<br>Flowers/fruits<br>flowering plants<br>grow(th)/light/water<br>nutrients/nutrition/fertiliser<br>transportation<br>life cycle/pollination<br>seed formation<br>seed dispersal<br>factors/variables | living organisms<br>classification<br>environment/habitat<br>ecosystem/flowering/non<br>flowering plants<br>vertebrate/invertebrate<br>fish/amphibian<br>reptile/bird/mammal<br>snails/slugs<br>worms/spiders/arachnids<br>insects/human impact<br>environmental impact<br>nature reserve/pollution<br>/litter/deforestation |
|            | Rocks   | Phases of matter  | Light   | Space   | Adaptation   |  |
| NC Links   | Compare and group together different kinds  | Compare and group<br>materials together,  | Recognise that they need light in order to see  | Describe the movement of the Earth, and other planets,  | Identify how animals and plants are adapted to suit their  | Identify that animals, including humans, need the right types  |

|           | of rocks on the basis of<br>their appearance and<br>simple physical<br>properties.<br>Describe in simple terms<br>how fossils are formed<br>when thingsthat have<br>lived are trapped within<br>rock.<br>Recognise that soils are<br>made from rocks and organic<br>matter. | according to whetherthey<br>are solids, liquids or gases.<br>Observe that some<br>materials change state<br>when they are heated or<br>cooled, and measureor<br>research the temperature<br>atwhich this happens in<br>degrees Celsius (°C).<br>Identify the part played by<br>evaporation and<br>condensation in the water<br>cycle and associate the rate<br>of evaporation with<br>temperature. | things and that dark is<br>the absence of light.<br>Notice that light is<br>reflectedfrom<br>surfaces.<br>Recognise that light<br>from the sun can be<br>dangerous and that<br>there are ways to<br>protect their eyes.<br>Recognise that shadows<br>are formed when the<br>light from a light source<br>is blocked by a solid<br>object.<br>Find patterns in the way<br>that thesize of shadows<br>change | relative to the Sun in the<br>solar system Describe the<br>movement of the Moon<br>relative to the Earth<br>Describe the Sun, Earth and<br>Moon as approximately<br>spherical bodies<br>Use the idea of the Earth's<br>rotation to explain day and<br>night and the apparent<br>movement of the sun across<br>the sky. | environment in different ways<br>and that adaptation<br>Explore and use classification<br>keys to help group, identify and<br>name a variety of living things<br>in their local and wider<br>environment | and amount of nutrition, and<br>that they cannot make their<br>own food; they get nutrition<br>from what they eat<br>Identify that humans and some<br>other animals have skeletons<br>and muscles for support,<br>protection and movement.<br>Describe the simple functions<br>of the basic parts of the<br>digestive system in humans<br>Identify the different types of<br>teeth in humans and their<br>simple functions<br>Describe the changes as<br>humans develop to old age. |
|-----------|---|--|--|--|--|---|
| Core      | Describe how igneous rock<br>are created and know how   | Describe what is meant by the property of a substance  | Describe what light is and<br>where it comes from and  | Describe how the Moon,<br>Earth and Sun move around  | Define ecosystem and identify<br>its components  | Label and describe the<br>functions of the major organs   |
| Knowledge | to classify them  | and name the properties of   | how we can measure   | each other   | Define and describe a range of   | in human body Explain why   |
|           | Explain what intrusive and  | solid liquid and gases   | levels of light  | Describe what happens  | environments   | organ donation is so important  |
|           | extrusive igneous rocks are   | Explain which state of matter  | Describe what reflection is  | during a lunar eclipse and   | Define an adaptation and   | Can label and describe the  |
|           | Describe how sedimentary  | a substance is in based on its   | and what happens to the  | solar eclipse  | understand that adaptations  | functions of the human  |
|           | rock is formed and how we   | properties   | direction of light when it   | Describe what happens  | are not a 'choice'   | skeleton  |
|           | can tell the age  | Describe what a particle is  | reflects   | during a solar eclipse   | Learn a range of common  | Describe the difference   |
|           | Know how fossils are  | and how they are arranged in   | Describe what refraction is  | Name and explain what the  | adaptations e.g. camouflage  | between endoskeletons and   |
|           | formed  | solids liquids and gases   | and what happens to the  | solar system is  | Describe the conditions of hot   | exoskeletons  |
|           | Describe what   | Explain how we know  | direction of light when it   | Explain the difference   | and dry environments (desert   | Describe variation within the   |
|           | metamorphosis is and how  | particles in liquids and gases   | refracts   | between comets. meteors  | animals, plants)   | animal kingdom and compare  |
|           | metamorphic rocks are   | are moving   | State the parts of the eye   | and meteorites   | Describe the conditions of cold  | the human skeleton to other   |
|           | formed  | Describe what happens to   | and how we sea   | Can name the planets of the  | environments and common  | animals   |
|           | Give the properties and   | particles when a substance is  | Describe ways in which   | solar system in order  | adaptations of animals to cold   | Compare the teeth of different  |
|           | uses of   | heated or cooled   | people can be partially  | Describe the difference  | environments e.g., insulation  | animals   |
|           | different metamorphic rocks   | Predict what happens to a  | sighted  | between the inner and outer  | Make comparisons between   | Identify and describe the   |
|           | Describe what a geologist is  | solid, liquid or gas when it is  | Know how white light can   | planets  | organisms from different cold  | functions of different types of   |

|            | Describe how geologists<br>identify rocks and draw an<br>identification key<br>Know the effect water can<br>have on rocks<br>Understand the term<br>chemical weathering<br>Explain how large earth<br>movements can cause rocks<br>to change | heated or cooled<br>Describe what happens to<br>the arrangement of particles<br>when a substance changes<br>state and name and give an<br>example of each change of<br>state<br>Describe what is meant by<br>melting point and boiling<br>point and how it is measured<br>Give examples of substances<br>that do not show typical<br>properties of any state of<br>matter and w<br>Describe what a non-<br>Newtonian fluid is | be used to make colours<br>and how base colours can<br>make new colours<br>Explain how rainbows are<br>created<br>Describe how light is used<br>in shadow puppetry<br>Explain how a periscope<br>works | Describe some types of stars<br>and what star constellations<br>are<br>Know what we mean by the<br>universe, galaxy and milky<br>way is<br>Describe what the work of<br>an astronomer is<br>Name famous astronomers<br>and what they discovered<br>Describe what astronomers<br>and currently trying to find<br>out about the universe | environments<br>Describe the conditions of<br>night-time environments and<br>compare the eyes of nocturnal<br>and diurnal animals How<br>echolocation works<br>Describe the conditions of<br>underwater environments and<br>common adaptations of fish<br>Common adaptations of<br>marine mammals | teeth<br>Explain why we need oxygen<br>and explain the components of<br>the circulatory system and how<br>it works.<br>Can label the major<br>components of the digestive<br>system and describe the<br>function of the different parts.<br>Describe the journey food<br>takes through our digestive<br>system |
|------------|--|---|--|--|---|--|
| Vocabulary | Rock/appearance<br>physical properties/fossil<br>soil/organic matter<br>inorganic matter/erosion<br>weathering<br>magnifying glass/hand lens<br>microscope/grains/crystals<br>igneous/sedimentary<br>metamorphic/volcano<br>petrified        | states of matter/solid<br>liquid/gas/properties<br>particles/evaporation<br>solidification/condensation<br>the water cycle/melting  | Light/reflect(ion)<br>Eye/light source<br>rear-view mirror<br>periscope/shadow<br>prism/rainbow  | Solar system/Sun/star<br>Earth/Moon/orbit<br>Spherical/rotation/day<br>Night/seasons<br>Mercury/ Venus/ Earth,<br>Mars/Jupiter/ Saturn,<br>Uranus/ Neptune/Pluto<br>Sundial /midday<br>Midnight/astronomical   | Fossils/offspring/characteristics<br>breed of animal/evolution<br>inheritance/adapt(ion)<br>environment/palaeontologist   | digestive system<br>mouth/ tongue/ teeth,<br>oesophagus/stomach and small<br>and large intestine/incisor<br>canine/molar teeth/<br>food chain/producer<br>predator/prey<br>carnivore/herbivore<br>omnivore   |
|            | Separating Mixtures  | Physical and Chemical<br>Changes  | Magnets  | Electrical Circuits  | Animals and Humans<br>over time   | Reproductive cycles  |
| NC Links   | Know that some materials<br>will dissolve in liquid to form<br>a solution, and describe how  | Know that some materials<br>will dissolve in liquid to form<br>a solution, and describe how   | Compare how things move<br>on different surfaces<br>Notice that some forces  | Identify common appliances<br>that run on electricity<br>Construct a simple series   | Describe in simple terms how<br>fossils are formed when things<br>that have lived are trapped   | Describe the differences in the<br>life cycles of a mammal, an<br>amphibian, an insect and a bird  |

|           | to recover a substance from  | to recover a substance from    | need contact between two     | electrical circuit, identifying | within rock Describe how living  | Describe the life process of      |
|-----------|------------------------------|--------------------------------|------------------------------|---------------------------------|----------------------------------|-----------------------------------|
|           | a solution                   | a solution                     | objects, but magnetic        | and naming its basic parts,     | things are classified into broad | reproduction in some plants       |
|           | Use knowledge of solids,     | Use knowledge of solids,       | forces can act at a distance | Identify whether or not a       | groups according to common       | and animals.                      |
|           | liquids and gases to decide  | liquids and gases to decide    | Observe how magnets          | lamp will light in a simple     | observable characteristics and   | Describe how living things are    |
|           | how mixtures might be        | how mixtures might be          | attract or repel each other  | series circuit, based on        | based on similarities and        | classified into broad groups      |
|           | separated, including through | separated, including through   | and attract some materials   | whether or not the lamp is      | differences, including micro-    | according to common               |
|           | filtering, sieving and       | filtering, sieving and         | and not others               | part of a complete loop with    | organisms, plants and animals    | observable characteristics and    |
|           | evaporating                  | evaporating Demonstrate        | Compare and group            | a battery                       | Give reasons for classifying     | based on similarities and         |
|           |                              | that dissolving, mixing and    | together a variety of        | Recognise that a switch         | plants and animals based on      | differences, including micro-     |
|           |                              | changes of state are           | everyday materials on the    | opens and closes a circuit and  | specific characteristics.        | organisms, plants and animals     |
|           |                              | reversible changes Explain     | basis of whether they are    | associate this with whether     | Recognise that living things     | Give reasons for classifying      |
|           |                              | that some changes result in    | attracted to a magnet, and   | or not a lamp lights in a       | have changed over time and       | plants and animals based on       |
|           |                              | the formation of new           | identify some magnetic       | simple series circuit           | that fossils provide information | specific characteristics.         |
|           |                              | materials, and that this kind  | materials                    | Recognise some common           | about living things that         |                                   |
|           |                              | of change is not usually       | Describe magnets as          | conductors and insulators,      | inhabited the Earth millions of  |                                   |
|           |                              | reversible, including changes  | having two poles Predict     | and associate metals with       | years ago                        |                                   |
|           |                              | associated with burning and    | whether two magnets will     | being good conductors.          | Recognise that living things     |                                   |
|           |                              | the action of acid on          | attract or repel each        | Associate the brightness of a   | produce offspring of the same    |                                   |
|           |                              | bicarbonate of soda            | other, depending on which    | lamp or the volume of a         | kind, but normally offspring     |                                   |
|           |                              |                                | poles are facing.            | buzzer with the number and      | vary and are not identical to    |                                   |
|           |                              |                                |                              | voltage of cells used in the    | their parents                    |                                   |
|           |                              |                                |                              | circuit                         | Identify how animals and         |                                   |
|           |                              |                                |                              | Compare and give reasons for    | plants are adapted to suit their |                                   |
|           |                              |                                |                              | variations in howcomponents     | environment in different ways    |                                   |
|           |                              |                                |                              | function, including the         | and that adaptation may lead     |                                   |
|           |                              |                                |                              | brightness of bulbs, the        | to evolution                     |                                   |
|           |                              |                                |                              | loudness of buzzers and the     |                                  |                                   |
|           |                              |                                |                              | on/off position of switches     |                                  |                                   |
|           |                              |                                |                              | Use recognised symbols          |                                  |                                   |
|           |                              |                                |                              | when representing a simple      |                                  |                                   |
|           |                              |                                |                              | circuit in a diagram            |                                  |                                   |
| Core      | Describe what a pure         | Describe how are particles     | Name contact and non-        | Describe what static charge is  | Describe how random changes      | Describe stages of the life cycle |
| Knowledge | substance and give examples  | arranged in solids, liquids    | contact forces               | and how to create a build-up    | in characteristics lead to an    | of a flower plant                 |
|           | of some pure substances      | and gases                      | Compare how things move      | of static charge                | advantage in an organism         | Describe different methods of     |
|           | Explain how we can tell if   | Explain what happens to        | on different surfaces        | Explain how lightning occurs.   | and how the survival of these    | pollination and seed dispersal    |
|           | something is pure or not     | particles in a change of state | Know what magnets are        | Describe the parts of an        | organisms leads to evolution     | Know how new plants can be        |

|            | Know what a mixture is<br>Give examples of mixtures of<br>substances from the same<br>state and different states<br>Describe what a formulation<br>is, give examples and explain<br>why they are useful<br>Describe how to remove<br>large solid particles from a<br>mixture<br>Describe how to remove<br>insoluble and soluble<br>substances from a mixture<br>Describe the substances that<br>are present in river water<br>Suggest how pure<br>substances can be removed<br>from river water and write a<br>method to explain<br>Carry out separation of<br>substances in river water<br>Evaluate the method for<br>separating substances in<br>river water<br>Suggest how an<br>environmental scientist<br>could check the water<br>quality in a river | Identify phase changes<br>present in a range of<br>examples.<br>Know what a physical change<br>is and describe signs that a<br>physical change has taken<br>place<br>Know what a chemical<br>change and describe signs<br>that a chemical change has<br>taken place<br>Give examples of chemical<br>changes<br>Describe and identify the<br>similarities and differences<br>between physical and<br>chemical changes and<br>suggest when a physical or<br>chemical change may be<br>useful<br>Explain how to tell which<br>reaction is larger Identify<br>variables<br>Give a method for<br>investigating a reaction<br>between acids and metals<br>Complete an investigation<br>into acid and metal reactions<br>and use evidence to make a<br>conclusion<br>Know how to compare your<br>results with other sets of | and describe when<br>magnets attract and repel<br>Describe how to test the<br>strength of a magnet<br>Explain what a compass is<br>and how to make one<br>Describe how field lines<br>help us to understand the<br>effect of an invisible force<br>Describe how field lines<br>around a magnet can be<br>mapped out Use a diagram<br>of field lines to see where<br>the force will be strongest<br>and where it will be<br>weakest<br>Describe how to find out if<br>a material is magnetic or<br>not and state the<br>differences between<br>permanent and temporary<br>magnets<br>Name examples of<br>magnetic materials<br>State what an<br>electromagnet and give<br>examples of uses of<br>magnets and<br>electromagnet | electrical circuit<br>Explain how electricity in a<br>circuit is different to static<br>electricity<br>State the conditions for<br>electricity to flow in a circuit<br>Explain what a circuit<br>diagram is<br>Identify the component from<br>the circuit symbols provided<br>Build a basic circuit from the<br>circuit diagram provided<br>Describe what electrical<br>insulators and conductors are<br>and give examples<br>Test whether a material is an<br>insulator or a conductor<br>Write a prediction for<br>changing the components in<br>a circuit and carry out an<br>investigation to test your<br>prediction Evaluate whether<br>your prediction was correct<br>using your results<br>Create a circuit with a buzzer<br>and a switch<br>Design a game that uses the<br>buzzer | Know how Charles Darwin<br>came up with the theory of<br>evolution<br>Know what a fossil is and how<br>it is made and what it shows us<br>about changes in species over<br>time<br>Know fossils do not give us a<br>complete record of past<br>organisms<br>Describe the key traits of each<br>animal kingdom and know how<br>the evolutionary tree shows us<br>how animal kingdoms are<br>related<br>Know the names of the main<br>periods of time and which<br>groups of organisms existed in<br>each period and the reasons<br>why some organisms became<br>extinct<br>Know the key stages in the<br>development of homo sapiens<br>and describe the impact of<br>homo sapiens on plants and<br>animals<br>Describe the decline in<br>numbers of species over the<br>last 200 years<br>Describe the impact of homo<br>sapiens hunting animals and<br>cutting down forest | grown from cuttings and bulbs.<br>Compare sexual and asexual<br>reproduction in plants and talk<br>about the advantages and<br>disadvantages of both.<br>Describe and compare the<br>main stages of the life cycle of<br>an insect and an amphibian.<br>Describe the process of sexual<br>reproduction<br>Describe and compare the life<br>cycles of different types of<br>mammal<br>Identify the stages of a bird's<br>life cycle<br>Can label the parts of an egg<br>Describe how some birds<br>attract a mate<br>Describe the differences in the<br>life cycles of different animals<br>Explain the differences<br>between the life cycles of<br>animals<br>Know how to report and<br>present scientific finding |
|------------|--|--|--|--|---|---|
| Vocabulary | properties of materials  | results with other sets of<br>results<br>states of matter/solid  | electromagnet<br>Forces/push/pull  | Brightness/volume  | cutting down forest<br>Know what the role of a<br>conservationist is<br>Fossils/offspring/characteristics   | life cycle/plant/animal   |

|          | hardness/ solubility,<br>transparency, conductivity<br>(electrical and thermal)<br>dissolve/solution<br>mixture/separation<br>solids, liquids and gases<br>filtering, sieving and<br>evaporating<br>changes of state<br>reversible/irreversible<br>acid/burning<br>bicarbonate of soda<br>chemical reaction<br>rusting/evaporation<br>filtering/sieving<br>melting | liquid/gas/properties<br>particles/evaporation<br>solidification/condensation<br>the water cycle/melting  | Attract/repel/friction<br>magnet(ic)/bar magnet<br>ring magnet/button<br>magnet<br>horseshoe magnet/contact<br>poles/polarity | Cell/battery/series circuit<br>parallel circuit/component<br>symbol/switches/buzzers<br>lamps | breed of animal/evolution<br>inheritance/adapt(ion)<br>environment/palaeontologist<br>Mary Anning/Charles Darwin<br>Alfred Wallace/Mutation    | mammal/insect/amphibian<br>fish/reptile/sexual<br>reproduction/asexual<br>reproduction/habitat<br>ecosystem/environment<br>rainforest/oceans<br>desert /Metamorphosis           |
|----------|--|---|---|---|--|---|
|          | Particles in physical<br>and chemical changes  | Sustainability  | Heat  | Energy  | Cells  | Diet and lifestyle  |
| NC Links | Know that some materials<br>will dissolve in liquid to form<br>a solution, and describe how<br>to recover a substance from<br>a solution<br>Use knowledge of solids,   | Give reasons, based on<br>evidence from comparative<br>and fair tests, for the<br>particular uses of everyday<br>materials, including metals,<br>wood and plastic |   |   | Identify and name the main<br>parts of the human circulatory<br>system, and describe the<br>functions of the heart, blood<br>vessels and blood | Identify and name the main<br>parts of the human circulatory<br>system, and describe the<br>functions of the heart, blood<br>vessels and blood<br>Recognise the impact of diet, |

|            | liquids and gases to decide<br>how mixtures might be<br>separated, including through | Explain that some changes result in the formation of new materials |                             |                                 |                                  | exercise, drugs and lifestyle on<br>the way their bodies function<br>Describe the ways in which |
|------------|--|--|-----------------------------|---------------------------------|----------------------------------|---|
|            | evaporating  |  |                             |                                 |                                  | transported within animals,   |
|            | Give reasons, based on   |  |                             |                                 |                                  | including humans.   |
|            | evidence from comparative  |  |                             |                                 |                                  | Describe the changes as   |
|            | and fair tests, for the  |  |                             |                                 |                                  | humans develop to old age   |
|            | particular uses of everyday  |  |                             |                                 |                                  |   |
|            | materials, including metals,   |  |                             |                                 |                                  |   |
|            | wood and plastic   |  |                             |                                 |                                  |   |
|            | Demonstrate that dissolving,   |  |                             |                                 |                                  |   |
|            | mixing and changes of state  |  |                             |                                 |                                  |   |
|            | explain that some changes  |  |                             |                                 |                                  |   |
|            | result in the formation of   |  |                             |                                 |                                  |   |
|            | new materials, and that this   |  |                             |                                 |                                  |   |
|            | kind of change is not usually  |  |                             |                                 |                                  |   |
|            | reversible, including changes  |  |                             |                                 |                                  |   |
|            | associated with burning and  |  |                             |                                 |                                  |   |
|            | the action of acid on  |  |                             |                                 |                                  |   |
|            | bicarbonate of soda  |  |                             |                                 |                                  |   |
| Core       | Draw particle diagrams to  | Describe the properties of   | Describe how particles      | Describe what an energy         | Describe similarities and        | Describe the key parts of a   |
| Knowledge  | represent states of matter   | glass, ceramics and plastics                                       | behave in solids, liquids   | store is                        | differences between plants and   | healthy diet and the effect of  |
| Kilowicuge | Name the physical changes  | and how they are made  | and gases and what          | Give the names of different     | animals and compare the living   | each food group   |
|            | that convert substances  | Explain what happens to  | happens to particles when   | energy stores and identify      | conditions                       | Give examples of nutritional  |
|            | between states of matter   | glass, ceramics and plastics                                       | they are heated and         | the energy stores present in a  | Describe what an organ system    | deficiencies  |
|            | Describe the physical  | at landfill.   | change state                | range of objects                | and give examples of organ       | Describe what is meant by   |
|            | properties of solids, liquids  | Describe how to identify   | Describe what happens to    | Describe what initial and final | systems in animals and plants.   | different lifestyles and why  |
|            | and gases.   | plastics that can and can t be                                     | a substance when it is      | them in a range of secondrive   | Describe now organ systems       | different diets Design a diet for   |
|            | mixture and draw particlo  | Explain why recycling plastic                                      | Predict whether an object   | Describe the energy             | are made from organs and         | two people with different   |
|            | diagrams to represent pure   | is important for the   | will expand or contract     | transformations that take       | from tissues which are made      | lifestyles  |
|            | and impure materials Give  | environment  | and suggest some            | place during a bungee iump      | from cells                       | Describe how muscles enable   |
|            | examples of useful mixtures  | Give the definition of a life                                      | engineering applications of | Describe what useful, wasted    | Describe how cells build tissues | movement and what happens   |
|            | Define solvent, solute and   | cycle assessment and know  | this knowledge              | and input energy stores are     | and organs of the circulatory    | to muscles during exercise  |

|            | 1                           | 1                            | 1                          | 1                               |                                  | 1                              |
|------------|-----------------------------|------------------------------|----------------------------|---------------------------------|----------------------------------|--------------------------------|
|            | solution                    | now how to use data to       | Define what we mean by a   | Describe what efficiency is     | system                           | Explain how muscles may        |
|            | Draw particle diagrams to   | make a life cycle assessment | thermal equilibrium and    | Calculate efficiency of a given | Name and label the parts of an   | change over time due to        |
|            | represent a solution        | Compare reusable and one     | how it can be reached      | machine                         | animal                           | exercise                       |
|            | Describe what happens to    | use plastic bags over their  | Suggest ways that thermal  | Define power Give the           | Describe what each part of an    | Describe the parts of the      |
|            | particles during dissolving | lifetime                     | equilibrium is reached     | equation for power              | animal cell does                 | circulatory system and the     |
|            | State three methods of      | Describe the gas emissions   | more quickly               | Compare the power ratings       | Name and label the parts of a    | changes that will occur during |
|            | separating mixtures and     | caused by human activity     | Describe how heat is       | of a range of appliances        | plant cell                       | exercise                       |
|            | select an appropriate       | Describe the impact of each  | transferred by particles   | Describe what we mean by        | Describe what each part of a     | Describe how an athlete's body |
|            | separation technique for a  | type of gas emission on the  | through conduction         | speed                           | plant cell does                  | will respond differently to    |
|            | given mixture               | Earth and actions we can     | Describe a method to       | Describe the method for         | Describe what a specialised cell | exercise                       |
|            | Plan an experiment to       | take to reduce gas emissions | demonstrate the speed of   | calculating an object's speed   | is and give examples of          | Describe what is meant by      |
|            | isolate components of a     | Describe what global         | conduction through metal   | Describe where kinetic          | specialised cells                | medicinal drugs and give some  |
|            | mixture                     | warming is, the evidence for | Explain why it is hard to  | energy may be found             | Explain how root cells and       | examples                       |
|            | Define chemical reaction,   | global warming and what      | conduct heat directly      | Describe how the kinetic        | sperm cells are specially        | Describe how medicinal drugs   |
|            | physical process            | scientists think are the     | through a liquid or gas    | energy of an object can be      | adapted                          | may affect the body            |
|            | State the 5 indicators of a | causes of global warming     | Describe what a thermal    | changed                         |                                  | Describe what nicotine and     |
|            | chemical reactions Identify | Describe what climate        | conductor and insulator is | Calculate the kinetic energy    |                                  | alcohol are and explain how    |
|            | examples of chemical        | change is and the effects of | is                         | of a number of objects.         |                                  | nicotine and alcohol came to   |
|            | reaction and physical       | climate giving case study    | Sort materials based on    |                                 |                                  | be used by humans              |
|            | changes                     | examples                     | whether they are           |                                 |                                  | Describe some effects of using |
|            | Define the word             |                              | insulators or conductors   |                                 |                                  | nicotine and alcohol to excess |
|            | combustion, fuel, reactant  |                              | Create a design to keep an |                                 |                                  |                                |
|            | and product                 |                              | ice frozen for as long as  |                                 |                                  |                                |
|            | Write a word equation for   |                              | possible                   |                                 |                                  |                                |
|            | the combustion of common    |                              | Explain why your design    |                                 |                                  |                                |
|            | fuels                       |                              | will help the ice cube to  |                                 |                                  |                                |
|            | Compare different fuels     |                              | stay frozen                |                                 |                                  |                                |
|            | using experimental data     |                              | Evaluate your design and   |                                 |                                  |                                |
|            |                             |                              | suggest improvements       |                                 |                                  |                                |
|            |                             |                              |                            |                                 |                                  |                                |
| Vocabularv | properties of materials     | properties of materials      | properties of materials    | Efficient/Power                 | circulatory system/heart         | circulatory system/heart       |
|            | hardness, solubility,       | hardness, solubility,        | hardness, solubility,      | Kinetic/Energy                  | blood vessels/artery             | blood vessels/artery           |
|            | transparency, conductivity  | transparency, conductivity   | transparency, conductivity | Potential                       | vein                             | vein                           |
|            | (electrical and thermal)    | (electrical and thermal)     | (electrical and thermal)   | Gravitational/Chemical          | oxygenated deoxygenated          | oxygenated deoxygenated        |
|            | dissolve/solution           | dissolve/solution            | dissolve/solution          | Elastic/Heat                    | blood cells/white blood cells    | blood cells/white blood cells  |
|            | mixture/separation          | mixture/separation           | mixture/separation         |                                 | Red blood cells plasma           | Red blood cells plasma         |
|            |                             |                              |                            |                                 |                                  |                                |

| solids, liquids and gases | solids, liquids and gases    | solids, liquids and gases | Platelets/diet           | Plateletsa/diet               |
|---------------------------|------------------------------|---------------------------|--------------------------|-------------------------------|
| filtering, sieving and    | filtering, sieving and       | filtering, sieving and    | Exercise/drugs/medicines | Exercise/drugs                |
| evaporating/changes of    | evaporating/changes of state | evaporating               | Lifestyle/health(y)      | Medicines/lifestyle/health(y) |
| state                     | reversible/irreversible      | changes of state/         |                          |                               |
| reversible/irreversible   | acid/burning                 | reversible/irreversible   |                          |                               |
| acid/burning              | bicarbonate of soda          | acid/burning              |                          |                               |
| bicarbonate of soda       | chemical reaction/rusting    | bicarbonate of soda       |                          |                               |
| chemical reaction         | evaporation/filtering        | chemical reaction/rusting |                          |                               |
| rusting/evaporation       | sieving/melting              | evaporation/filtering     |                          |                               |
| filtering/sieving         |                              | sieving/melting           |                          |                               |
| melting                   |                              |                           |                          |                               |
|                           |                              |                           |                          |                               |