

| | Autumn | Spring | Summer |
|--------|---|--|--|
| Year 1 | <p><u>Seasonal changes</u></p> <p>Children will discover facts about the Sun and describe the Sun in simple terms.</p> <p>Children learn about the seasons and be able to state what they associate with each season in a circle.</p> <p>They will describe the weather and use simple equipment to measure some aspects of the weather. Recording the weather on a chart. Stating that the weather changes during the four seasons. Explaining that the seasons (and associated weather) occur at different times of the year in the Northern and Southern Hemispheres.</p> <p>The children will understand that the days are longer in the summer than in winter (and nights are shorter in the summer than in winter). Understanding that some animals migrate</p> | <p><u>Materials</u></p> <p>Year one children will explain what the term property means and list some common properties of materials. Moving onto describing the properties of a material.</p> <p>Children will list some materials that occur naturally and those that are man-made. They will understand that lots of different things can be made from the same material. They will use their observations and ideas to suggest answers to questions. Talk about why some materials are good for different purposes and construct a house for one of the Three Little Pigs, to take part in an investigation.</p> <p>Children will be able to explain what is meant by float and sink. They will make a boat shape out of a piece of aluminium foil and see if it floats. Extending the investigation to how many paper clips can the boat can hold. They will record the results of an enquiry using drawings and</p> | <p><u>Animals including humans</u></p> <p>Children will identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. Moving to identifying and naming a variety of common animals that are carnivores, herbivores and omnivores.</p> <p>Children will identify and name animals that would live on a farm and their babies.</p> <p>Year one children will name the five senses and which part of my body is associated with each sense.</p> <p>Children will understand that living things can be grouped in different ways. Using their observations and ideas to suggest answers to questions and record data in pictograms.</p> <p>They will identify and name common pets.</p> |

| | | | |
|----------------------|---|------------------------------------|--|
| | <p>because of this and that that some animals hibernate through Winter instead.</p> | <p>simple scientific language.</p> | <p>Understanding what pets need to be happy, safe & healthy.</p> |
| <p>Year 2</p> | <p><u>Uses of every day materials</u></p> <p>Children will identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. Linked to building in local area and story 'The big concrete lorry' by Shirley Hughes. They will talk about materials that houses use and what their properties are. Investigating why they are used for certain jobs. Natural and man-made objects will also be discussed.</p> <p>Year 2 children will get to observe closely, using simple equipment and perform simple tests in finding out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p> <p>Children will identify and classify,</p> | <p>simple scientific language.</p> | <p><u>Animals including humans</u></p> <p>Children will notice that animals including humans, have offspring which grow into adults. Asking questions about and describing the basic needs of animals, including humans for survival. Following this they will understand the importance for humans of exercise, eating the right amounts of different types of food and hygiene.</p> <p><u>Living things and their habitat</u></p> <p>Children will explore and compare the differences between things that are living, dead, and things that have never been alive. They will identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of plants and animals and how they</p> |

use their observations and ideas to suggest answers to questions and gather and record data to help answer questions in exploring heating and cooling to change shape link to story 'Dogger' and investigating waterproofing materials. Linked to poetry Shirley Hughes 'wet'.

depend on each other.

Children will identify and name a variety of plants and animals in their habitats including micro-habitats and describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.

Plants

Children will observe and describe how seeds and bulbs grow into mature plants. Observing closely, using simple equipment and asking questions. Whilst growing their plant, they will find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.

They will record and communicate their findings in a range of ways and begin to use simple scientific language, identify and classify.

| | | | |
|---------------|--|---|---|
| | | | Using their observations and ideas to suggest answers to questions |
| Year 3 | <p><u>Plant (related to topic)</u></p> <p>Children will identify and describe the functions of different parts of a plant and its requirements for life and growth. Questioning the function of the roots, leaves, seed pods of the cacao?</p> <p>They will work scientifically relating the parts of the cacao tree to their function, exploring the cacao tree, how it is grown and the lifecycle which produces the seed.</p> <p>Rocks (related to local history)</p> <p>During trip to St Peter's church for local history topic, children will examine the weathering of stone. Comparing different kinds of rock and stone, looking at appearance and basic properties. To explore and question the weathering in the different parts of the church and gravestones,</p> | <p><u>Magnets and other forces</u></p> <p>Children will compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet and identify magnetic materials during child led investigation.</p> <p>They will observe how magnets attract and repel each other and attract some materials and not others, understanding magnets as having 2 poles.</p> <p>Children will compare how things move on different surfaces and observe how forces need contact between 2 objects (unlike magnetic forces) They will use the vehicles made as part of DT to explore their movement down a slope of the same angle covered in contrasting surfaces, gather and record data, ask questions and present hypotheses.</p> | <p><u>Plants</u></p> <p>Children will identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers and explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant. They will investigate the way in which water is transported within plants using white carnations and coloured water.</p> <p>Year 3 will investigate plants in local environment, along the riverside walk. Looking at the life cycles of rose hips, how it flowers, forms seeds and disperses them.</p> <p>Children will compare to 2 different types of plant from the local environment (one tree, one</p> |

| | | | |
|--|--|--|---|
| | <p>discuss the effects and how this happened, the children will explain which are the newer/older parts of the church and how they know.</p> <p><u>Light</u></p> <p>Children will recognise that they need light in order to see things and that dark is the absence of light. They will notice that light is reflected from surfaces and recognise that light from the sun can be dangerous and that there are ways to protect their eyes.</p> <p>Children will recognise that shadows are formed when the light from a source is blocked by a solid object and finding patterns in the way that the size of shadows changes. Drawing round shadows at different times of the day and discuss how they change and why and why the shadows are formed.</p> | <p><u>Rocks and soils (relate to stone age)</u></p> <p>Children will compare and group together different kinds of rocks on basis of appearance and simple physical properties. They will recognise that soils are made from rocks and organic matter.</p> <p>They will describe and observe the formation of fossils in sedimentary rock and explore how they are formed. Progressing from their knowledge in Year 1.</p> | <p>other) and one from Rwanda (contrasting environment)</p> <p><u>Animals including humans</u></p> <p>Children will identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat.</p> <p>They will identify that humans and some other animals have skeletons and muscles for support, protection and movement. Sorting animals into two groups.</p> <p>Children will examine how muscles support movement. Using the mountain gorillas for research, learning about their food and nutrition, their skeletal and muscular structure.</p> |
|--|--|--|---|

| | | | |
|----------------------|---|---|---|
| <p>Year 4</p> | <p><u>Animals including humans</u></p> <p>Children will describe the simple functions of the basic parts of the digestive system in humans.</p> <p>Children will identify the different types of teeth in humans and their simple functions. Question whether this is the same in all animals? Explaining why these animals need different teeth to connect with food chains.</p> <p>They will construct and interpret a variety of food chains, identifying producers, predators and prey.</p> <p><u>Electricity</u></p> <p>Children will Identify common appliances that run on electricity.</p> <p>They will construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</p> <p>Children will identify whether or not a lamp will light in a simple series circuit, based on whether</p> | <p><u>Sound</u></p> <p>Children will identify how sounds are made, associating some of them with something vibrating. They will recognise that vibrations from sounds travel through a medium to the ear. Recognising that sounds get fainter as the distance from the sound source increases.</p> <p>They will find patterns between the pitch of a sound and features of the object that produced it.</p> <p>Understanding patterns between the volume of a sound and the strength of the vibrations that produced it.</p> <p>Children will Ask relevant questions Plan different types of scientific enquiries to answer questions. Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</p> | <p><u>Living things and their habitats</u></p> <p>Children will recognise that living things can be grouped in a variety of ways. Exploring and using classification keys to help group, identify and name a variety of living things in their local and wider environment.</p> <p>Children will recognise that environments can change and that this can sometimes pose dangers to living things.</p> <p>They will Make systematic and careful observations and record findings using simple scientific language, drawings and labelled diagrams.</p> <p>Children will conduct a habitat survey in which they record habitats that are available to animals in their local area and report findings.</p> |
|----------------------|---|---|---|

| | | | |
|----------------------|--|---|---|
| | <p>or not the lamp is part of a complete loop with a battery. Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</p> <p>In an investigation they will recognise some common conductors and insulators, and associate metals with being good conductors. Asking relevant questions, they will plan different types of scientific enquiries to answer questions. Children will set up simple and practical enquiries, comparative and fair tests.</p> <p>Children will record findings using simple scientific language, drawings and labelled diagrams. Report on findings from enquiries, including oral and written explanations, of results and conclusions.</p> | | |
| <p>Year 5</p> | <p><u>Forces</u></p> <p>Children will explain that unsupported objects fall towards</p> | <p><u>Earth, Sun and Moon</u></p> <p>Children will describe the movement of the Earth, and other planets,</p> | <p><u>Science Changing state</u></p> <p>Children will list properties of some common materials.</p> |

| | | | |
|--|--|--|---|
| | <p>the Earth because of the force of gravity acting between the Earth and the falling object. Studying the biography of Newton and how he was a significant figure within science.</p> <p>Children will be introduced to force metres and the measurement of gravity. Recording data in a table after taking repeated readings for averages.</p> <p>With prompting, Children will plan different types of scientific enquiries to answer questions on friction and which surfaces create the greatest force between them. Taking precise measurements using standard units of Newtons, using a force metre.</p> <p>Children will record data using labelled diagrams, tables and charts.</p> <p>Children will identify the effects of air resistance, water resistance and friction, that act between moving surfaces.</p> | <p>relative to the Sun in the solar system. Understanding the Sun, Earth and Moon as approximately spherical bodies and give the relative sizes of the Sun, Earth and Moon in general terms.</p> <p>Year five will explain day and night and the apparent movement of the Sun across the sky, understanding that the Earth spins so different parts face the Sun at different times of the day and how it is linked to the seasons.</p> <p>Children will investigate the shadows created by the Sun's light which change during the day.</p> <p>Children will understand the phrases of the moon and how it is not a source of light but reflective.</p> <p>They will describe the movement of the Earth, and other planets, relative to the Sun in the solar system Within their research open homework, children will use a selection of sources of information to find out more about planets and their order from the Sun.</p> | <p>Comparing and grouping together everyday materials on the basis of their properties, including their hardness, solubility and absorbency.</p> <p>They will investigate that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. Designing investigations as a fair test with variables to demonstrate that dissolving, mixing and changes of state are reversible changes.</p> <p>Children, using their own knowledge, will continue to design their own investigations to separate mixtures using sieves, filters and evaporation.</p> <p>They will be able to define thermal conductivity. Listing examples of everyday uses of thermal insulators and conductors.</p> <p>Linking to potions and our Harry Potter topic, children will investigate that some changes</p> |
|--|--|--|---|

They will recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. Linking this to the DT making of their shipyard cranes.

Children will report and present findings from enquiries, including conclusions and, with prompting, suggest causal relationships. With support, present findings from enquiries orally and in writing and Suggest further comparative or fair tests.

Understanding that the planets all orbit the Sun & many have celestial bodies orbiting them, whilst studying the influences of Galileo.

Year 5 will visit a planetarium to understand star constellations and answer deeper questions on the universe.

are irreversible. Explaining 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.

Living things and their habitats

Children will label the parts of a flower.

Growing their own mandrakes within Harry Potter topic, to take measurements, record data using scientific diagrams and line graphs.

Children will understand that plants are classified into non-vascular & vascular types and that the latter are further divided into flowering and non-flowering types. Describing the life cycle of some non-flowering plants.

Within our trip to Northumberland Zoo, children will take part in the workshop to understand the term mammals and list characteristics. They will the life cycle of a bird.

| | | | |
|----------------------|---|--|---|
| | | | <p>Children will understand the importance of studying plants & animals without experimenting on them. Taking part in open homework and choosing a naturalist or animal behaviourist of their choice.</p> <p>Within Year five, children will have Puberty talk with a school nurse understand changes in the human body though out aging.</p> |
| <p>Year 6</p> | <p><u>Living Things and their Habitat</u></p> <p>Children will describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals. Then give reason for classifying based on specific characteristics.</p> <p>They will record data as classification keys, identifying scientific evidence that has been used to support or refute ideas.</p> | <p><u>Animals including humans:</u></p> <p>Children will identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.</p> <p>They will recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function and describe the ways in which nutrients and water are transported within animals, including humans. Linking with PSHE and healthy mind/healthy body.</p> | <p><u>Light</u></p> <p>Children use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye. Explaining that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes.</p> <p>They will use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. Identifying scientific</p> |

| | | | |
|--|--|---|--|
| | <p>Understanding how to create a classification key to identify living things.</p> <p>Children will understand that micro-organisms are very small living things. Listing yeast, bacteria and viruses as examples of micro-organisms. They will explain how some micro-organisms are beneficial to humans.</p> <p>Recording data using scientific diagrams and plan scientific enquiries to answer questions, such as mould on bread.</p> <p>Children will use the internet and information books to research the living things in habitats.</p> | <p>Children will show understanding with increasing complexity using scientific diagrams and labels.</p> <p><u>Electricity</u></p> <p>Children will associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit; compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches.</p> <p>Children will use recognised symbols when representing a simple circuit in a diagram. Reporting and presenting findings from enquiries in oral and written forms such as displays and other presentations.</p> <p>Year 6 will report and present findings from enquiries, including explanations of, and degree of, trust in results. Planning different types of scientific enquiries to answer their questions. Recognizing control variables where necessary</p> | <p>evidence that has been used to support or refute ideas or arguments.</p> <p>Children will test results to make predictions to set up further comparative and fair tests.</p> <p><u>Evolution</u></p> <p>Children will recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. Showing progression from Year one and three.</p> <p>Children will recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. Use photos of themselves and compare to brothers, sisters, parents or other family members. Link to photos collected for leavers assembly. Discussion on DNA and how and why it is used</p> |
|--|--|---|--|

| | | | |
|--|--|--|--|
| | | <p>Children will take measurements using a range of scientific equipment. Taking these measurements with increasing accuracy and precision, repeat readings when appropriate</p> | <p>within science.</p> <p>They will identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p> |
|--|--|--|--|

