Benington Primary School Curriculum Map Science

Year group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS Acorn Class	**Understanding the World** <u>The Natural World:</u> • Explore the natural world around them, making observations and drawing pictures of animals and plants • Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class • Understand some important processes and changes in the natural world around them, including seasons and changing states of matter					
Year A Willow 1/2	Scientists and Inventors • observe and describe 4 properties of plastic; • identify common zoo animals; • sort animals into 3 groups based on their body parts; • name 4 sensory plants; • choose their favourite sensory plant from a selection; • observe and describe the local weather; • identify common pets; • describe how vets look after animals; • take part in an investigation to find out the best materials to keep us warm.	Animals Including Humans • Children can identify and match several animal offspring and their adult forms. They can describe the main characteristics of the offspring found in different animal groups. • Children can describe the main stages of at least two different animal life cycles. They start to compare these life cycles. • Children can identify several ways that humans grow and develop through each life cycle stage. • Children can name the three basic needs of all animals to survive. They can describe the specific needs of a given animal in detail. • Children can describe the effects of exercise and begin to explain the importance of exercise for the human body. • Children can identify several foods according to the basic food groups; can talk about the importance of a balanced diet. They can explain how to be hygienic and why this is important.	Everyday Materials • identify and name everyday materials. • describe simple properties of everyday materials. • to observe closely. • sort objects two ways.	Plants • Label the main parts of plants and trees • Describe the stages in the life cycle of a plant. • Explain that plants need water, light and a suitable temperature to grow well. • Make observational drawings of plants. • Measure the growth of plants with a ruler. • Record the growth of my plants in a bar chart. • Use observations to explain how we can tell that plants are living things. • Set up a simple comparative test. • Make a simple prediction.	Seasonal Changes Spring and Summer • Name the four seasons. • Name different types of weather. • Make observations about the weather. • Describe the weather associated which each season. • Collect and record simple data. • Make simple observations about changes across the seasons. • Interpret simple data. • Name an event or occasion which happens in each season. • Describe how day length varies between two seasons. • Make a more detailed comparison between two seasons.	Living Things and their habitats • Explain some of the life processes. • Ask questions to decide if a thing is living, dead or has never been alive. • Identify some plants and animals in global habitats. • Draw a map of a local habitat. • Sort objects into categories and give reasons for their choices. • Identify and name minibeasts in microhabitats. • Gather and record information. • Suggest how an animal is able to survive in their habitat. • Answer questions about habitats they have researched. • Explain why the animals in a habitat need the plants. • Draw a simple food chain.

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Year B Willow 1/2	Uses of Everyday Materials • Compare the uses of different everyday materials. • Compare the suitability of different everyday materials. • Explain the basic progress of recycling. • Explain the advantages of recycling. • Name the process invented by John McAdam.	Seasonal Changes (Autumn and Winter) • name the four seasons • name different types of weather • make observations about the weather • describe the weather associated which each season • collect and record simple data • make simple observations about changes across the seasons	Scientists and Inventors • describe things plants need; • construct a mini greenhouse with a partner; • observe how plants grow; • discuss whether doctors are scientists; • describe when and why we should wash our hands; • take part in an activity to show how germs spread; • give a minimum of two facts about Charles Macintosh; • identify Charles Macintosh's famous invention; • give facts about Rachel Carson; • take part in an investigation to prove what Rachel Carson found out about water pollution; • answer questions about where our energy comes from.	Animals Including Humans • Children can identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. • Children can describe and compare the observable features of animals from a range of groups. • Children can name and identify animals that are herbivore, carnivore or omnivore. • Children can name and locate parts of the human body and begin to make suggestions about what some parts of the body do. • Children can name the five senses and the part of the body they are related to. Children can explain how they use each of their senses. • Children can identify a variety of common animals.	The Environment • set up a simple test. • measure and record the time taken for ice to melt. • sort objects into groups. • generate questions about the rainforest. • sort rainforest animals into groups. • ask questions about endangered animals.	Plants • Plant a bean. • Find plants in the wild and identify them by a picture. • Say the names of parts of trees. • Describe a bean plant using words from a word bank. • Say three things that plants need to grow. • Match leaves they have collected to pictures of a leaf.

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Year A Beech 3/4	**Living things and their habitats (Y4)** • Generate criteria to use to sort living things. • Sort living things into a Venn diagram. • Sort living things into a Carroll diagram. • Use questions to sort animals using a key. • Use a key to identify invertebrates by looking at their characteristics. • Use the characteristics of living things to sort them using a classification key. • Show the characteristics of living things in a table. • Create a classification key. • Identify dangers to wildlife in the local and wider Environment, noting how environments can change. • Record observations in a table. • Write a report. • Present findings to the class.	**Forces and Magnets (Y3)** • Identify the type of force required to carry out an action. • Investigate the force of friction produced by different surfaces. • Explain that magnets produce an invisible pulling force. • Identify magnetic materials. • Identify different types of magnet. • Investigate the strength of different magnets. • Identify when magnets will repel or attract based on their poles. • Construct a bar chart of their results. • Explain their predictions and conclusions using key words or prompts. • Identify differences, similarities or changes related to simple scientific ideas and processes • Use straightforward scientific evidence to answer questions & support their findings	**Sound (Y4)** • Explain how sound sources vibrate to make sounds. • Explain how vibrations change when the loudness of a sound changes. • Explain how sounds travel to reach our ears. • Describe the pitch of a sound. • Describe patterns between the pitch of a sound and the features of the object that made the sound. • Recognise that sounds get fainter as the distance from the sound source increases. • Explain how sound travels through a string telephone. • Identify the best material for absorbing sound. • Create a musical instrument that can play high, low, loud and quiet sounds. • Make observations and conclusions. • Be able to answer questions based on their learning.	**Light (Y3)** • Understand that dark is the absence of light. • Set up an investigation and make predictions. • Understand how surfaces reflect light. • Recognise that a mirror appears to reverse an image. • Identify some parts of the eye. • Understand how the Sun can damage parts of the eye. • Identify opaque, translucent and transparent objects. • Know how shadows change size.	**States of matter (Y4)** • Describe the properties of solids, liquids and gases. • Explain that melting and freezing are opposite processes that change the state of a material. • Identify the melting and freezing point of several different materials. • Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) • Explain that heating causes evaporation and cooling causes condensation. • Explain that evaporation and condensation are opposite processes that change the state of a material. • Explain that the higher the temperature, the quicker water evaporates. • Explain what happens to water at the different	**Investigative Skills** • Set up an investigation and make predictions. • Explain their predictions and conclusions using key words or prompts. • Make observations and conclusions. • Be able to answer questions based on learning. • Gather, record, classify and present data in a variety of ways to help answer questions • Record findings using simple scientific language, drawings, labelled diagrams, key, bar charts and tables (This also permeates other units)

					stages of the water cycle. • Make observations and conclusions. • Be able to answer questions based on learning	
Year B Beech 3/4	**Animals, including humans (Y3)** • Children can talk about what animals and humans need to stay healthy, showing a basic understanding of healthy eating • Children can talk about how different animals require a different balance of nutrients and can read simple food labels. • Children can name and briefly describe the different types of skeletons. • Children can match labels to some parts of the human skeleton. • With scaffolding and/or support, children can give a simple explanation of how muscles work.	**Animals, including humans (Y4)** • Generate questions and use scientific evidence that is given to answer questions. •Ask relevant questions and use different types of scientific enquiries to answer them. • Identify similarities related to scientific ideas. • Set up a simple enquiry, comparative and fair tests. • Make systematic and careful observations, record findings and use results to draw simple conclusions. • Name parts of the digestive system. • Add functions to the parts of the digestive system. • Identify the function of teeth in humans.	**Electricity (Y4)** • identify electrical and non-electrical appliances. • explain, with support, how a circuit works. • name at least two electrical conductors and insulators. • create a simple series circuit both with and without a switch. • accurately record their findings in a table. • Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery • recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit	**Rocks (Y3)** • name the three different types of rocks. • handle and examine rocks to identify their properties, with support. • state the four different types of matter that soil is composed of. • describe in simple terms how fossils are formed when things that have lived are trapped within rock • learn to make careful observations. • take part in and contribute towards an oral presentation of their observations.	**Plants (Y3)** • Identify the main stages of the life cycle of flowering plants. • Explain the functions of the different parts of plants • Set up an investigation and make predictions. • 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 • Make observations and conclusions. • Identify different parts of a flower. • Identify and describe the stages of the life cycle of flowering plants.	**Investigative Skills** • Generate questions and use scientific evidence that is given to answer questions. • Identify similarities related to scientific ideas. • Set up a simple enquiry, which is a fair test. • Set up an investigation and make predictions. • Children will learn to make careful observations. • They will be able to take part in and contribute towards an oral presentation of their observations. • Accurately record their findings • Use results to draw simple conclusions make predictions , suggest

		• Construct and interpret a variety of food chains, identifying producers, predators and prey.			• Be able to answer questions based on learning.	improvements and raise further questions.
Year A Oak 5/6	**Properties and changes of materials " material world" Year 5 unit** Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. Demonstrate that dissolving, mixing and changes of state are reversible changes. Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.	**Exploring the work of famous scientists and examining the ways in which scientists work. "Super scientists" Year 5 unit** To develop a deeper understanding of a wide range of scientific ideas. To explore and talk about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. To begin to recognise how these ideas help them to understand and predict how the world operates To recognise that scientific ideas change and develop over time. To select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information. To draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings To know what scientists are and how they work To know about some of the most famous scientists	**Living things and adaptation – We're evolving and We're dinosaur hunters:** Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. pupils should find out more about how living things on earth have changed over time. They should be introduced to the idea that characteristics are passed from parents to their offspring, for instance by considering different breeds of dogs, and what happens when, for example, labradors are crossed with poodles. They should also appreciate that variation in offspring over time can make animals more or less able to survive in particular environments, for example, by exploring how giraffes' necks got longer, or the development of insulating fur on the arctic fox. Pupils might find out about the work of palaeontologists such as	**Light and shadow "Let it shine" Year 6 unit** Recognise that light appears to travel in straight lines. 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. Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. designing and making a periscope and using the idea that light appears to travel in straight lines to explain how it works. They might investigate the relationship between light sources, objects and shadows by using shadow puppets. They could extend their experience of light by looking a range of phenomena including rainbows, colours on soap bubbles, objects looking bent in water and coloured filters	**Animals including humans The reproductive process in animals "Staying alive" Year 6 unit** **"Growing up and growing old" Year 5 unit RSE** Good to be me Pshe / science focus RSE Describe the life process of reproduction in some plants and animals To understand different types of reproduction, including sexual and asexual reproduction in plants, and sexual reproduction in animals . To know about some of the changes that have already happened to us. To know that puberty is the time when we start the change into adulthood. To know that puberty is controlled by hormones. To know about the reproductive process in animals Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood	**The water cycle Floating and sinking** To understand the processes involved in the Water Cycle To know why some objects float and others sink. To understand the concept of buoyancy

		To carry out forensic tests	Mary Anning and about how Charles Darwin and Alfred Wallace developed their ideas on evolution.		recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function describe the ways in which nutrients and water are transported within animals, including humans Pupils should learn how to keep their bodies healthy and how their bodies might be damaged – including how some drugs and other substances can be harmful to the human body. Pupils might work scientifically by: exploring the work of scientists and scientific research about the relationship between diet, exercise, drugs, lifestyle and health.	
Year B Oak 5/6	**Classifying critters" Year 6 unit** 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. To make detailed observations and comparisons Know the 7 life processes To construct a key To know about the work of Karl Linneaus	**Lifecycles " The circle of life" Year 5 unit** Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. Describe the life process of reproduction in some plants and animals. Pupils should study and raise questions about their local environment throughout the year. They should observe life-cycle changes in a variety of living things, for example, plants in the vegetable garden or flower border, and animals in the local environment. They should find out about the work of naturalists and animal behaviourists, for example, David Attenborough and Jane Goodall	**The Earth and the Solar System - out of this World:** Describe the movement of the Earth and other planets relative to the sun in the solar system. Describe the movement of the Moon in relation to the Earth. Describe the Sun, Earth and Moon as spherical bodies. Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky. To explain day and night. Pupils should learn that the Sun is a star at the centre of our solar system and that it has 8 planets To understand that the moon is a celestial body that orbits a planet (Earth) To know that Earth has 1 moon, Jupiter has 4 large moons and numerous smaller ones.	**Electricity "Electrifying" Year 6 unit** Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches. Use recognised symbols when representing a simple circuit in a diagram. Construct simple series circuits, to help them to answer questions about what happens when they try different components, for example, switches, bulbs, buzzers and motors. They should learn how to represent a simple circuit	**Forces "Let's get moving" Year 5 unit** Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. Identify the effects of air resistance, water resistance and friction that act between moving surfaces. Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. To understand the meaning of gravity, mass and weight. To conduct an investigation into air resistance. To design a boat which floats well.	**Greek scientists and their discoveries** To look at the work of some famous scientists. To plan, conduct and evaluate an investigation.

		To try to grow new plants from different parts of the parent plant, for example, seeds, stem and root cuttings, tubers, bulbs. To understand the structure and function of the parts of a flower. To investigate the factors affecting seed germination. To make observations over time. To understand that if living things did not reproduce they would die out eventually.	To understand the way in which our ideas about the Solar System have developed, understanding that the geocentric model of the solar system gave way to the heliocentric model by considering the work of scientists such as : Ptolemy, Alhazen and Copernicus. To work scientifically by comparing the time of day in different parts of the world, creating simple models of the Solar System, constructing simple shadow clocks and sundials calibrated to show Midday and the start and end of the school day, finding out why some people think that Stonehenge might have been used as an astrological clock.	in a diagram using recognised symbols. To consider alternative forms of electricity production. To think about the safety risks associated with electricity.	To conduct an investigation into friction	