Iveson Primary School

Year 1	Subject Science	
Autumn 1	**Spring 1**	**Summer 1**
Animals, including humans: Ourselves • Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. Working scientifically • Use their senses to compare different textures, sounds and smells	**Seasonal changes-To be revisited throughout the year** Observe changes across the four seasons Observe and describe weather associated with the seasons and how day length varies. Working scientifically • Make tables and charts about the weather (look at weather forecasts) • Make simple graphs about day length	**Plants: Planting beans** Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees Working Scientifically- • Observe closely using magnifying glasses to compare and contrast plants • Group plants • Record how plants change over time, for examples when leaves fall of tees and buds open
Autumn 2	**Spring 2**	**Summer 2**
Animals including humans Naming and identifying animals: Identify and name a variety of common animals, including fish, amphibians, reptiles, birds and mammals Identify and name a variety of common animals that are carnivores, herbivores and omnivores Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) Working scientifically • Use their observations to compare and contrast animals at first hand (Videos and photographs) • Group animals according to what they eat	Everyday materials Distinguish between an object and the material from which it is made Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock Describe the simple physical properties of a variety of everyday materials Compare and group together a variety of everyday materials on the basis of their simple physical properties Working scientifically • Perform simple tests on a range of materials to answer a question – What I the best material for an umbrella? For curtains? For a dog's basket? For bookshelf?	Plants Identify and describe the basic structure of a variety of common flowering plants, including trees. Working Scientifically- • Observe closely using magnifying glasses to compare and contrast plants • Group plants • Record how plants change over time, for examples when leaves fall of trees and buds open

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Year 2	Subject Science	
Autumn 1	**Spring 1**	**Summer 1**
Animals including humans **Life cycles and offspring:** Notice that animals, including humans, have offspring which grow into adults Working scientifically Use their observations to compare and contrast animals at first hand (Videos and photographs) Group animals according to what they eat. Ask questions about what things animals need for survival and what humans need to stay healthy. Suggest ways to find answers to their questions.	Living things and their habitats Explore and compare the differences between things that are living, dead, and things that have never been alive • Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other • Identify and name a variety of plants and animals in their habitats, including micro habitats Working scientifically Sorting and classifying living, dead or never alive. Construct simple food chains Describe conditions in different habitats. Explore questions-Is a flame alive? Is a deciduous tree alive in Winter? Discuss how they can answer these questions	Plants Observe and describe how seeds and bulbs grow into mature plants Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy **Working scientifically** Observe and record the growth of a variety of plants as they change over time Observe similar plants at different stages Set up a comparative test to show that plants need light and waterto stay healthy
Autumn 2	**Spring 2**	**Summer 2**
Animals, including humans Health and hygiene Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene Find out about and describe the basic needs of animals, including humans, for survival (water, food and air) Working scientifically Use their observations to compare and contrast animals at first hand (Videos and photographs) Group animals according to what they eat. Ask questions about what things animals need for survival and what humans need to stay healthy. Suggest ways to find answers to their questions.	Uses of everyday materials(CCL-History-Great Fire of London) identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses • Find out how the shapes of solid objects made from some materials can be changed by squashing,bending, twisting and stretching. Working scientifically Compare the uses of everyday materials (School and home) Identify and classify the use of different materials, and recording their observations	Living things and their habitats (CCL-Geography-Kenya) 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 Identify and name a variety of plants and animals in their habitats, including micro habitats

Year 3	Subject Science	
Autumn 1	**Spring 1**	**Summer 1**
<u>Rocks and fossils</u> Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties Describe in simple terms how fossils are formed when things that have lived are trapped within rock. Recognise that soils are made from rocks and organic matter.	<u>Animals including humans</u> 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 Identify that humans and some other animals have skeletons and muscles for support, protection and movement. <u>Working Scientifically</u> • Identify and group animals with and without skeletons • Compare and observe their movement. • Compare and contrast diets of dfferent animals. • Research different food groups and how they keep us healthy, designing a healthy meal.	<u>Plants</u> Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers 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 <u>Working scientifically</u> • Compare the affect different factors on plant growth, such as the amount of light or fertilisers • Observe how water is transported in plants (For example, how coloured water moves up the stem of a carnation)
Autumn 2	**Spring 2**	**Summer 2**
<u>Forces and magnets</u> Compare how things move on different surfaces Notice that some forces need contact between two objects, but magnetic forces can act at a distance Observe how magnets attract or repel each other and attract some materials and not others Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet,and identify some magnetic materials Describe magnets as having two poles Predict whether two magnets will attract or repel each other, depending on which poles are facing <u>Working scientifically</u> • Compare how different things move and group them. • Carry out tests to how how far things move on different surfaces • Sort materials into those that are magnetic, and those that are not. • Identify how these properties make magnets useful in everyday items	<u>Light</u> Recognise that they need light in order to see things and that dark is the absence of light Notice that light is reflected from surfaces Recognise that light from the sun can be dangerous and that there are ways to protect their eyes Recognise that shadows are formed when the light from a light source is blocked by a solid object Find patterns in the way that the size of shadows change. <u>Working scientifically</u> • Look for patterns and what happens to shadows when the light source moves.	<u>Plants</u> Investigate the way in which water is transported within plants Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. <u>Working scientifically</u> • Discover how seeds are formed by observing the different stages of plant life cycles • Look for patterns in the structure of fruits that relate to how the seeds are dispersed

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Year 4	Subject Science	
Autumn 1	**Spring 1**	**Summer 1**
<u>Animals, including humans</u> Describe the simple functions of the basic parts of the digestive system in humans Identify the different types of teeth in humans and their simple functions Construct and interpret a variety of food chains, identifying producers, predators and prey <u>Working scientifically</u> • Compare the teeth of carnivores and herbivores, and suggest reasons for the differences. • Find out what damages teeth • Draw and discuss their ideas about the digestive system, and compare with models and diagrams.	<u>States of matter</u> Compare and group materials together, according to whether they are solids, liquids or gases 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) Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature <u>Working scientifically</u> • Grouping and classifying different materials • Explore the effect of temperature on chocolate, butter or cream. • Research the temperature at which materials change state • Observe and record evaporation over a period of time (puddle in the playground or snowman melting)	<u>Living things and their habitats</u> Recognise that living things can be grouped in a variety of ways. Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment Working scientifically • Using and making simple guides or keys to explore and identify local plants and animals • Raising and answering questions based on their observations of animals.
Autumn 2	**Spring 2**	**Summer 2**
<u>Electricity</u> Identify common appliances that run on electricity Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers 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 up in a simple series circuit Recognise some common conductors and insulators, and associate metals with being good conductors <u>Working scientifically</u> • Observing patterns. Do bulbs get brighter when more cells are added? Do all metals conduct electricity?	<u>Sound</u> Identify how sounds are made, associating some of them with something vibrating Recognise that vibrations from sounds travel through a medium to the ear Find patterns between the pitch of a sound and features of the object that produced it Find patterns between the volume of a sound and the strength of the vibrations that produced it Recognise that sounds get fainter as the distance from the sound source increases <u>Working scientifically</u> • Make ear muffs from different materials to see which provides the best insulation from sound • Find pattern in sounds that are made by different objects, for example the different thickness of elastic bands • Investigate pitch and volume using bottles filled with different amounts of liquid.	<u>Living things and habitats</u> Name a variety of living things in their local and wider environment Recognise that environments can change and that this can sometimes pose dangers to living things. <u>Working scientifically</u> • Using and making simple guides or keys to explore and identify local plants and animals • Raising and answering questions based on their observations

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Year 5	Subject Science	
Autumn 1	**Spring 1**	**Summer 1**
<u>Animals, including humans</u> Describe the changes as humans develop to old age. Pupils should draw a timeline to indicate stages in the growth and development of humans. They should learn about the changes experienced in puberty. <u>Working scientifically</u> • Pupils could work scientifically by researching the gestation periods of other animals and comparing them with humans; by finding out and recording the length and mass of a baby as it grows.	<u>Earth and Space-Trip to York planetarium</u> Describe the movement of the Earth, and other planets, relative to the Sun in the solar system Describe the movement of the Moon relative to the Earth Describe the Sun, Earth and Moon as approximately 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. <u>Working scientifically</u> Pupils might work scientifically by: • Comparing the time of day at different places on the Earth through internet links and direct communication • 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 structures such as Stonehenge might have been used as astronomical clocks.	<u>All living things and their habitats</u> 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. <u>Working scientifically</u> • Observe and compare life cycles of plants in their local environment with those around the world (In the rainforest, oceans, deserts and prehistoric times. • To grow new plants from different parts of the parent plant. • Observe life cycles (animals by hatching and rearing. E.g chicks)
Autumn 2	**Spring 2**	**Summer 2**
<u>Properties and changes of materials</u> 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. <u>Working scientifically</u> • Explore reversible changes (sieving, evaporating, filtering, melting and dissolving). • Explore changes that are difficult to reverse. • Find out about how chemists create new materials, for example, Spencer Silver who invented the glue for post it notes.	**<u>Forces</u>** 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. <u>Working scientifically</u> Pupils might work scientifically by: • Exploring falling paper cones or cup-cake cases, and designing and making a variety of parachutes and carrying out fair tests to determine which designs are the most effective. • They might explore resistance in water by making and testing boats of different shapes. • They might design and make products that use levers, pulleys, gears and/or springs and explore their effects.	<u>All living things and their habitats</u> Describe the life process of reproduction in some plants and animals 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. Pupils should find out about different types of reproduction, including sexual and asexual reproduction in plants, and sexual reproduction in animals. <u>Working scientifically</u> • Observe and compare life cycles of plants in their local environment with those around the world (In the rainforest, oceans, deserts and prehistoric times. • To grow new plants from different parts of the parent plant. • Observe life cycles (animals by hatching and rearing. E.g chicks)

Year 6	Subject Science	
Autumn 1	**Spring 1**	**Summer 1**
<u>Animals including humans</u> Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood 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. <u>Working scientifically</u> Pupils might work scientifically by: • Exploring the work of scientists and scientific research about the relationship between diet, exercise, drugs, lifestyle and health.	<u>Electricity</u> 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. <u>Working scientifically</u> Pupils might work scientifically by: • Systematically identifying the effect of changing one component at a time in a circuit • Designing and making a set of traffic lights, a burglar alarm or some other useful circuit.	<u>Light</u> 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. <u>Working scientifically</u> Pupils might work scientifically by: • Deciding where to place rear-view mirrors on cars; • 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 (they do not need to explain why these phenomena occur).
Autumn 2	**Spring 2**	**Summer 2**
<u>Evolution and inheritance</u> 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. <u>Working scientifically</u> Pupils might work scientifically by: Observing and raising questions about local animals and how they are adapted to their environment; Comparing how some living things are adapted to survive in extreme conditions, for example, cactuses, penguins and camels. They might analyse the advantages and disadvantages of specific adaptations, such as being on two feet rather than four, having a long or a short beak, having gills or lungs, tendrils on climbing plants, brightly coloured and scented flowers.		<u>Living things and their habitats</u> Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals Give reasons for classifying plants and animals based on specific characteristics. <u>Working scientifically</u> • Pupils might find out about the significance of the work of scientists such as Carl Linnaeus, a pioneer of classification. Pupils might work scientifically by: • Using classification systems and keys to identify some animals and plants in the immediate environment. • They could research unfamiliar animals and plants from a broad range of other habitats and decide where they belong in the classification system.

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