Buttsbury Junior School Science Progression

Year 3	Working Scientifically				
	Ask relevant questions and use different types of scientific enquiries to answer them Set up simple practical enquiries, comparative and fair tests Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers Gather, record, classify and present data in a variety of ways to help in answering questions Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions Identify differences, similarities or changes related to simple scientific ideas and processes Use straightforward scientific evidence to answer questions or to support his/her findings				
	Animals including humans	**Plants**	**Rocks**	**Light**	**Forces and Magnets**
	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	describe the functions of different parts of flowering plants Explore the requirements of plants for life and growth and how they vary from plant to plant 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	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	Recognise that he/she needs 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 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	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

Year 3 Brain Busters	**Animals including humans**	**Plants**	**Rocks**	**Light**	**Forces and Magnets**
	BB1: Animals have skeletons for movement.	BB1: The roots of the plant help anchor it into the soil.	BB1: Most of our planet is made of rock.	BB1: Light sources are all around us.	BB1: Iron is a magnetic metal.
	BB2: Animals have skeletons for protection.	BB2: Plants need, sunlight, water and carbon dioxide to grow.	BB2: Rocks can be man-made or naturally formed.	BB2: Transparent items let all light through but Translucent lets some light through.	BB3: Paper is not a magnetic material.
	BB3: Without a skeleton we would be like jelly!	BB3: Water is transported through the roots to the stem of the plant.	BB3: Rock is made up of a mixture of minerals that are pressed tightly together.	BB3: UV rays are produced by the sun and can be dangerous without protection.	BB3: If you have two like poles they repel.
	BB4: There are 5 different food groups for a balanced diet.	BB4: Some plants have different requirements depending upon their environment.	BB4: Fossils are petrified remains of plants and animals from more than 10,000 years ago.	BB4: Opaque objects block light and create a shadow	BB4: If you have two opposite poles they attract.
	BB5: Animals can be omnivores, carnivores or herbivores.	BB5: Bees are an important part of plant pollination.	BB5: Soils can be formed in two ways: the breakdown of rocks and also formed by organic matter.	BB5: Climate change is the change in the usual temperature of the world.	BB5: The shinier the surface, the easier something moves.

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Year 3 Vocabulary	Animals including humans	Plants	Rocks	Light	Forces and Magnets
	Skeleton hydrostatic skeleton vertebrae protection invertebrate ball and socket joint endoskeleton hinge joint exoskeleton gliding joint diet nutrients	Germination Roots Leaves Flowering ovary/ovule seed dispersal pollination fertilisation stem stigma carpel petal anther filament style stamen	Metamorphic Igneous Marble Fossil Palaeontologist Sedimentary Soil Chalk Natural man-made	Shadow Sources light ray UV protection Opaque Translucent Transparent Reflective retro-reflective	Magnetic Repel Attract Push Pull North South pull

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Year 4	Working Scientifically				
	Ask relevant questions and use different types of scientific enquiries to answer them Set up simple practical enquiries, comparative and fair tests Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers Gather, record, classify and present data in a variety of ways to help in answering questions Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions Identify differences, similarities or changes related to simple scientific ideas and processes Use straightforward scientific evidence to answer questions or to support his/her findings				
	Animals including humans	**Living Things and Their Habitats**	**States of Matter**	**Sound**	**Electricity**
	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	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 Recognise that environments can change and that this can sometimes pose dangers and have an impact on living things	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	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	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 in a simple series circuit recognise some common conductors and insulators,

				recognise that sounds get fainter as the distance from the sound source increases	and associate metals with being good conductors

Year 4 Brain Busters	**Animals including humans**	**Living Things and Their Habitats**	**States of Matter**	**Sound**	**Electricity**
	BB1: Animals have different diets.	BB1: Living things grow and reproduce.	BB1: There are 3 states of matter; solids, liquids and gases.	BB1: A vibration is a backwards and forwards movement.	BB1: Electricity is an energy.
	BB2: A food chain shows the transfer of energy through living things.	BB2: Animals can be sorted into: Mammals, Fish, Birds, Reptiles and Amphibians.	BB2: Some materials can change state when they are heated or cooled.	BB2: Vibrations enter your ear and send messages to your brain.	BB2: A simple circuit can consist of a battery, wires and a bulb.
	BB3: There are 4 different types of teeth.	BB3: A classification key is used to identify animals.	BB3: Rigidity, volume and shape are all properties of states of matter.	BB3: Sounds are vibrations that trace through the air.	BB3: Electricity can be dangerous.
	BB4: You need to care for your teeth by brushing them twice a day.	BB4: Natural products decompose more quickly than man made.	BB4: Water is constantly moving between air, sea and land.	BB4: The pitch is how high or low the sound is.	BB4: Conductors allow electricity to pass through them and insulators do not.
	BB5: There are 6 stages of digestion within humans.	BB5: A habitat is where living things naturally live and grow.	BB5: There are 4 stages of the water cycle.	BB5: The volume is how loud or quiet the sound is.	BB5: Metals are conductors and plastics are insulators.

Year 4 Vocabulary	**Animals including humans**	**Living Things and Their Habitats**	**States of Matter**	**Sound**	**Electricity**
	Carnivore Omnivore Herbivore Molars Canines incisors	Classification Characteristics Habitat Requirements Survive posing dangers	Evaporation Condensation Melt Gas Solid Liquid Water Cycle Water Vapour	Pitch Volume Cochlea Pinna Eardrum Vibrate Frequency Sound wave	Series Circuit Energy Switch Conductors Bulb Wire Insulators Battery

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			Ground water Precipitation Run-off Freeze	Echo	mains

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Year 5	Working Scientifically				
	Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs Use test results to make predictions to set up further comparative and fair tests Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations Identify scientific evidence that has been used to support or refute ideas or arguments				
	Animals including humans	**Living Things and Their Habitats**	**Forces and Magnets**	**Earth and Space**	**Properties and Changes of Materials**
	Describe the changes as humans develop to old age.	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	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	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	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

Year 5 Brain Busters	**Animals including humans**	**Living Things and Their Habitats**	**Forces and Magnets**	**Earth and Space**	**Properties and Changes of Materials**
	BB1: Different animals have different length gestation periods	BB1: Some plants reproduce from parts of a parents.	BB1: Gravity is a force where a planet draws objects towards it's centre.	BB1: The Earth orbits the sun every 365 ¼ days.	BB1: A property is a characteristic of that material.
	BB2: The longest gestation in the animal kingdom is an elephant (18-22 months). Human gestation is 40 weeks.	BB2: The male parts of a plant make pollen.	BB2: Air resistance is the force that acts in the opposite direction to an objects motion.	BB2: The Earth spins on its own axis every 24 hours, causing day and night.	BB2: A mixture is a combination of two materials that can be separated.
	BB3: There are different stages in growth and development of humans.	BB3: The female parts contain ovules for reproduction.	BB3: Isaac Newton was an English scientist who discovered the laws of gravity.	BB3: The moon orbits the Earth approximately 28 days.	BB3: A solution is made by dissolving materials in a liquid.
	BB4: Within each stage of development, humans will reach key milestones.	BB4: Most mammals give birth to live young.	BB4: Water resistance is a type of force that slows objects down when moving through water.	BB4: The sun is a star at the centre of our solar system	BB4: A reversible change is when a material can return to its original state.

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	BB5: A milestone is a significant stage in development such as learning to talk or walk.	BB5: Birds, insects and amphibians all lay eggs.	BB5: Friction is a force that always opposes motion.	BB5: The Earth, Sun and Moon are approximately spherical.	BB5: An irreversible change is when a material cannot return to its original state.

Year 5 Vocabulary	**Animals including humans**	**Living Things and Their Habitats**	**Forces and Magnets**	**Earth and Space**	**Properties and Changes of Materials**
	Development Baby Toddler Child Teenager Adult Gestation Length Mass milestones	Life Cycle Mammal Metamorphosis Reproduction Amphibian Naturalist Behaviourist	Air resistance water resistance mass weight friction up thrust parachute streamline lever gear cog pulley machine	Galaxy solar system celestial body crescent constellations lunar waxing waning atmosphere orbit	Mixture Solution Soluble Insoluble Irreversible Sieving Irreversible filtering

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Year 6	Working Scientifically				
	Plan different types of scientific enquiries to answer their own or others' questions, including recognising and controlling variables where necessary Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs Use test results to make predictions to set up further comparative and fair tests Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations Identify scientific evidence that has been used to support or refute ideas or arguments				
	Animals including humans	**Living Things and Their Habitats**	**Light**	**Evolution and Inheritance**	**Light**
	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	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 Give reasons for classifying plants and animals based on specific characteristics	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	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	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

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Year 6 Brain Busters	Animals including humans	Living Things and Their Habitats	Light	Evolution and Inheritance	Electricity
	BB1 Evidence for evolution = fossils	BB1: Organisms can be classified based on their characteristics.	BB1: Light travels in straight lines only.	BB1: Evidence for evolution is found by studying fossils.	BB1: Components = the different parts of a circuit.
	BB2 Homo Sapiens are the only species of humanoids currently living.	BB2: Scientists who classify organisms are called taxonomists.	BB2: Light is reflected by objects that we see (this is why we can see them).	BB2: Homo sapiens are the only species of humanoids currently living.	BB2: A cell is the power source within a circuit.
	BB3 Charles Darwin developed the theory of evolution.	BB3: Micro-organisms can be found all around us.	BB3: When light travels through a prism it is refracted.	BB3: Charles Darwin developed the theory of evolution.	BB3: A battery comprises of two or more cells.
	BB4 Adaptations occur due to beneficial mutations.	BB4: Micro-organism can be classified as a virus, bacteria or fungi.	BB4: Shadows are formed by a light source being blocked.	BB4: Adaptations occur due to beneficial mutations.	BB4: The brightness of a bulb changes with number of components.
	BB5 Offspring inherit characteristics from both parents.	BB5: Plants can be classified as mosses, ferns, conifers and flowering plants.	BB5: A shadows colour and shape can depend on how close an object is to the source of light, the colour and transparency of the object, and shape of the object.	BB5: Offspring inherit characteristics from both parents.	

Year 6 Vocabulary	Animals including humans	Living Things and Their Habitats	Light	Evolution and Inheritance	Light
	Circulatory Artery Vein Heart Exercise Alveoli Lungs Capillary healthy diet	Vertebrate Mollusc Arachnid micro-organisms species echinoderm classification characteristics annelids	Refraction Prism Waves Shadow Property Reflection Periscope colour	Inheritance Evolution natural selection genes offspring adaptation characteristics variation homo sapiens mutations	Electricity Components Circuit Cell Motor buzzer