PROGRESSION DOCUMENT SCIENCE

	RECEPTION	CYCLE A YEAR 1	CYCLE B YEAR 2	CYCLE A YEAR 3	CYCLE B YEAR 4	CYCLE A YEAR 5	CYCLE B YEAR 6
Topic		**Animals, including humans** - Compare and group animals **Uses of everyday materials -** Compare and group materials **Plants -** Wild and garden plants and trees. **Living things and their habitats** - simple food chains and differences between living and non-living.	**Animals including humans** - stages of life cycles, exercise, nutrition and hygiene **Everyday materials -** compare everyday materials. **Seasonal changes** - Autumn to Winter **Plants –** seeds and bulbs and what plants need to grow. **Seasonal changes -** Spring to Summer and length of day **Living things and their habitats -** plants and animals in habitats	**Plants** - functions of parts of plants and the requirements for life **Animals, including humans** - Nutrition and the skeletal system **Light** - light and shadows **Rocks** **Electricity** - simple circuits and common conductors and insulators **States of matter** - different states, evaporation and condensation	**Sound** **Animals including humans** – food chains **Living things and their habitats** – grouping and classifying **Forces and magnets** **Animals including humans** – digestive system and teeth	**Light** – light and how it travels **Properties of materials and their uses** **Evolution and inheritance** **Animals, including humans** - human circulatory system and substances on the body **Electricity** Electrical circuits **Animals, including humans** - human life cycle and gestation periods	**Forces** - water resistance **Forces** - gravity and drag forces, use levers, pulleys and gears **Changes of materials** irreversible and reversible changes **Earth and space** **Living things and their habitats** - life process in plants and animals and classification
Substantive Concepts Biology		**Abbee's Adventure!** **Animals, including humans** - Name common fish, amphibians, reptiles, birds and mammals. - Simple key features of animal groups. - Identify some body parts on animals. - Identify and group carnivores, herbivores and omnivores. - Sort animals into simple groups. - Name, draw and label basic human body parts. - Perform simple tests to explore senses. - Match senses to associated body part.	**Fire, Fire!** **Animals including humans** - Match, sort and group young animals and their adults. - How animals change throughout their life. - Similarities and differences between different stages of the human life cycle. - Survival needs of humans and animals. - Importance of exercise for humans. - Ways to keep our bodies clean and healthy.	**Anglo Saxons and the Scots** **Plants** -Seed dispersal and germination. - The function of roots stems and water transportation. - The parts and function of leaves. - The function of flowers and identify their parts. - Processes of pollination and fertilisation. -The life cycle of plant.	**The Living World** **Animals and their habitats** -Food chains for a variety of habitats. - Flow of energy through a food chain and food web. - How the animals are connected through food webs. (Producers, predators and prey) - Impact of environmental factors on food chains and webs.	**Ancient Greece** **Evolution and inheritance** - The scientific concept of inheritance. - The scientific meaning of adaptation. - Key ideas of the theory of evolution constructed by Darwin and Wallace. - Evidence for evolution from fossil records. - How human beings have evolved. - How adaptation may lead to evolution.	**The Rainforest** **Living things and their habitats** - Sexual and asexual reproduction. - Features of plants pollinated by insects or the wind. - Reproduction in some plants and animals. - Describe stages of the life cycles of mammals, birds, insects and amphibians. - Similarities and differences between life cycles of different plants and animals. - The importance of naturalist and animal behaviourist, Jane Goodall's work.

Substantive Concepts Biology							
		A Bird's Eye View **Plants** - Observations of flowers, comparing and contrasting. - Name and describe the parts of a flowering plant. - Name common wild and garden plants. - Identify and name a variety of deciduous and evergreen trees. - Identify and compare fruits and vegetables. **Up, Up and Away** **Living things and their habitats** - Living, dead or has never been alive. - Identify and name a variety of plants and animals in their habitats. - Identify minibeasts in their habitats and to use this information to answer a question. - Draw or label the trees, plants and animals that live in the local area. - Name, record and present information about minibeasts in the local area. - How an animal is suited to its habitat. - Use a food chain to show how animals get their food.	**The Tales of Nottingham** **Plants –** -Plant and observe **cress seed** growing. - What plants need to grow. - Parts of a seed and what it needs to grow - Explain germination - The life cycle of a plant. **Exploring the UK** **Living things and their habitats** -Differences between things that are living, dead and have never been alive. - What is living, dead or has never been alive in a local habitat. - Identify minibeasts in their habitats and to use this information to answer a question. - Describe a habitat and identify animals that live in it. - How an animal is suited their habitat and how living things depend on each other. - Simple food chains to show how animals get their food and understand what carnivores, herbivores and omnivores are.	**Mi Casa es tu Casa** **Animals, including humans** -Classify foods into food groups and their importance for a balanced diet. - Compare information on food labels and present findings in a bar chart. - Name some human bones and investigate bone lengths. - Recognise and classify living things with different types of skeletons. (vertebrates & invertebrates) - Compare animal skeletons to see how they have adapted to help animals move. - How bones and muscles work together by creating a model.	**The Roman Empire** **Living things and their habitats** -Group living things in a variety of ways using similarities and differences. - Identify, group and classify vertebrate species. - Classification keys to identify the group that different invertebrates belong to. - Design questions to group and classify animal species using classification keys. - Identify characteristics of the local area that have a positive and negative effect on living things. - Scientific evidence to answer questions about endangered living things. **Tribal Tales** **Animals including humans** - Keeping teeth healthy; plan and set up investigation into tooth decay. - Types of teeth and their simple functions. - Digestive system and their function. - Construct and interpret food chains, identifying producers, predators and prey. - Compare the teeth of different animals and link with their role in a food chain.	**World Ticket** **Animals, including humans** - Main parts of the human circulatory system. - Functions of the heart, blood vessels and blood. - Importance of exercise and how it affects the heart. - Regular exercise is important for a healthy body. - How diet and exercise affect the body. - The impact of drugs and alcohol on the body. **Through The Decades** **Animals, including humans** - What gestation periods are for different animals, including humans. - Human fertilisation to birth. - How babies grow and develop into children. - Changes that occur during puberty. - Changes that take place in late adulthood. - The stages of human development.	

Substantive Concepts **Chemistry**		**A Toy Story** **Uses of everyday materials** - Identify and name everyday materials. - Identify what everyday objects are made from. - Describe the properties of materials. - Describe simple physical properties of everyday materials. - Compare and group materials.	**Fire, Fire!** **Everyday materials** -Identify materials and their uses. - Describe properties. - Test materials and explain how materials can be changed. - Compare suitability of materials. - Group materials based on where they come from. - Use knowledge of properties to reuse materials.	**Jewel In the Nile** **Rocks** -Describe, compare and group rocks. - How rocks change over time. - How fossils are formed. - Different types of soil and explain how they are formed. - Test and compare soils based on their permeability. **2/3 Of the Earth** **States of matter** - -Identify, compare and group states of matter. - The melting rate of ice. - The melting rates of different types of chocolate. - The melting points of different metals. - The relationship between temperature and evaporation rate. - Evaporation and condensation in the water cycle.	**Our Wondrous World** **Forces and magnets** -Identify push and pull. - How things move on different surfaces. - The effects of surface friction. - How magnets attract and repel. - Magnets have 2 poles. - Magnetic and non-magnet materials.	**Crime and Punishment** **Properties of materials and their uses** -Classify and group materials by their properties including hardness, transparency and magnetism. - Give reasons, based on evidence from comparative and fair tests by investigating the following - - thermal conductors and insulators. - electrical conductors and insulators. - a magnet's responses to different materials.	**Our Changing World** **Changes of materials** - - Some materials dissolve. - How to separate mixtures and solutions into their components. - How to recover a substance from a solution. - Dissolving, mixing and changes of state are reversible changes. - The difference between irreversible and reversible changes.
Substantive Concepts **Physics**			**Beside the Seaside** **Seasonal changes** -What weather and nature changes happen between summer and autumn. - Seasonal changes in autumn. - How things change between autumn and winter. - How to use simple equipment to find out what the weather is like in winter.	**Jewel In the Nile** **Light** - -Light is needed to see, and dark is the absence of light. - Light is reflected from some surfaces. - How mirrors work. - Danger of direct sunlight and how to keep protected - How shadows are formed. - Change the size of shadows and find patterns.	**I am a Warrior!** **Sound** -How is sound made. - How different sounds travel to the ear. - The relationship between pitch and the features of its source. - How sounds change over distance. - Investigate the best material for absorbing sound. - Make a musical instrument and explain how it works.	**Extreme Earth** **Light** - Light travels in straight lines. - Investigate the angles of incidence and reflection by creating a periscope. -Refraction changes the direction in which light travels. - How a prism changes a ray of light. - How light enables us to see colours.	**The Ship of Dreams** **Forces - water resistance** - Friction and water resistance. - The effects of simple forces that involve contact, including air and water resistance. - What an iceberg is and why they float. - Investigate the conditions which affect how an iceberg melts.

Substantive Concepts **Physics**			- How to make observations about the weather and record this, answering a question. - Differences between the four seasons. **<u>Wonderful Weather</u>** **Seasonal changes** **-H**ow things change from Spring to Summer. - What happens in summer and how to stay safe in the sun. - Observe and describe the weather. - Seasonal changes through a Spring Walk. - How daylight hours vary. - Compare the four seasons.	**<u>Revolution</u>** **Electricity** -Identify common appliances that run on electricity. - Identify circuit components and build working circuits. **- Predict** what will happen when changes are made. - Investigate whether circuits are complete or incomplete. - If materials are electrical conductors or insulators. - How a switch works in a circuit, build switches and report findings.		- Why shadows have the same shape as the object that casts them. **<u>Through The Decades</u>** **Electricity** -The necessary precautions to take when working with electricity. - Draw scientific diagrams of electrical circuits. - The effects of changes in voltage in a circuit. (Number & voltage of cells) - Give reasons for variations in how components function within a circuit by making systematic observations. - The importance of major discoveries in electricity. - Design a torch based on understanding of electrical circuits.	**<u>World at War</u>** **Forces – gravity, drag forces, levers, pulleys and gears** - Effect of forces on varying objects. - The effect that gravity on an object. - Some forces act at a distance. - Difference between weight and mass. - Simple mechanisms that increase the effect of a force. **<u>Magnificent Maya</u>** **Earth and space** - Key events of the Space Age. - The geocentric and heliocentric models of the Solar System. - How Earth rotating on its axis causes night and day. - How Earth's tilt and orbit round the Sun causes the seasons. - Natural and artificial satellites & phases of the Moon. - Present information about the planets of the Solar System.
Disciplinary Knowledge **Planning**		- ask simple scientific questions		- ask relevant questions and decide which different types of scientific enquiries could be used to answer them	- know how to set up simple practical enquiries, comparative and fair tests	- plan different types of scientific enquiries to answer questions	- recognise and control variables where necessary

Disciplinary Knowledge	Observations and measuring		- know how to use simple equipment safely with appropriate support - identify and classify findings	- know how to **gather and record** data to help in answering questions - know how to perform simple tests (not fair tests)	- know how to make systematic and careful observations and, take measurements using standard units, a range of equipment safely, including **thermometers** - know how to **classify** data in a variety of ways to help in answering questions	- know how to make systematic and careful observations and take measurements, using standard units, a range of equipment safely, including **data loggers** - know how to **present** data in a variety of ways to help in answering questions	- know how to take measurements, using a range of scientific equipment safely, **with increasing accuracy and precision**, taking repeat readings where appropriate - know how to record data and results of increasing complexity using scientific diagrams and labels, scatter graphs, bar	- measurements, using a range of scientific equipment safely, **with accuracy and precision**, taking repeat readings where appropriate - record data and results of increasing complexity using classification keys, tables, line graphs
	Analysing and reporting (data)		- use their observations and ideas to suggest answers to questions - explain what they have found	- know what they could do next - know how they found it	- report on findings from enquiries, including **oral and written explanations** - draw simple conclusions, and make predictions, suggest improvements - use straightforward scientific evidence to answer questions or to support their findings - record findings using simple scientific language, drawings, labelled diagrams and tables	- report on findings from enquiries, including **displays or presentations of results and conclusions** - draw simple conclusions, make predictions, suggest improvements and **raise further questions** - record findings using simple scientific language, drawings, labelled diagrams, **keys, bar charts,** and tables	- report and present findings from enquiries, including **conclusions**, in oral and written forms - know how to present data using a variety of scatter graphs and line graphs - know how to support or refute ideas or arguments using scientific evidence	- report and present findings from enquiries, including conclusions and **explanations of and degree of trust in results**, in oral and written forms.
	Evaluating				- use results to suggest improvements	- use results and raise further questions	- use test results to make predictions to set up further comparative and fair tests - know how to discuss the degree of trust in results	
Specific Vocabulary	Biology		**Abbee's Adventure!** Fish, amphibians, reptiles, birds, mammals, carnivores, herbivores, omnivores, ears, eyes, mouth, hand, nose **A Bird's Eye View**	**Fire, Fire!** offspring, survival, air, exercise, hygiene, nutrition, growth, pupa, spawn, tadpole, baby, toddler, child, teenager, adult	**Anglo Saxons and the Scots** carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, skeleton, bones, muscles, joints, skull, ribs, spine	**The Living World** vertebrates, amphibians, reptiles, invertebrates, environment, energy, food web **The Roman Empire**	**Ancient Greece** fossils, adaptation, evolution, characteristics, reproduction, genetic **World Ticket** circulatory, heart, blood vessels, pulse,	**The Rainforest** reproduction, offspring, classification, micro-organisms, sexual and asexual reproduction, naturalist, behaviourist

		minibeasts, habitat, woodland, pond, desert, ocean **Up, Up and Away** living, dead, food chain, predator, prey, herbivore, omnivore, carnivore	**The Tales of Nottingham** seeds, bulbs, water, light, suitable temperature, grow, healthy, germinate, decompose **Exploring the UK** deciduous, evergreen, blossom, petals, fruit, roots, bulb, seed, trunk, branches, stem, oak, holly, willow, birch, daisy, buttercup, rose, daffodil,	**Mi Casa es tu Casa** nutrients, soil, reproduction, transportation, seed formation, seed dispersal, pollination, fertilisation	warm-blooded, cold-blooded, endangered species, extinct, metamorphosis, classification key, arachnid, annelid, mollusc, arthropod, crustacean, myriapod, **Tribal Tales** digestive system, incisor, canine, molar, premolar, decay, incisor, canine, premolar, molar, oesophagus, small and large intestine	carbon dioxide, veins, arteries, oxygenated, deoxygenated, valve, exercise, respiration, drugs **Through The Decades** foetus, embryo, womb, gestation, baby, toddler, teenager, elderly, puberty, reproduce, sperm, fertilises, egg	
Specific Vocabulary Chemistry		**A Toy Story** wood, plastic, plastic, glass, paper, water, metal, rock, hard, soft, stretchy, stiff, shiny, dull, rough, smooth, bendy	**Fire, Fire!** waterproof, absorbent, opaque, transparent man-made, natural rigid, flexible, strong, weak, reflective	**Jewel In the Nile** fossils, soils, sandstone, granite, marble, pumice, crystals, sedimentary, metamorphic, igneous, durable, permeable, impermeable, erosion **2/3 Of the Earth** solid, liquid, gas, evaporation, condensation, particles, temperature, freezing, heating, precipitation	**Our Wondrous World** force, contact, attract, repel, friction, poles, push, pull, magnetic, non-magnetic	**Crime and Punishment** hardness, translucent, thermal conductor, thermal insulator, electrical conductor, electrical insulator	**Our Changing World** solubility, filter, evaporation, dissolving, mixing, reversible, irreversible
Specific Vocabulary Physics			**Beside the Seaside & Wonderful Weather** Summer, Spring, Autumn, Winter, sun, day, moon, night, light, dark,	**Jewel In the Nile** shadows, mirror, reflective, reflection, light source, **Revolution** cells, wires, bulbs, switches, buzzers, battery, circuit, series, conductors, insulators, brightness, degrees Celsius (°C)	**I am a Warrior!** volume, vibration, wave, pitch, tone, speaker	**Extreme Earth** reflection, refraction, light source, cast **Through The Decades** voltage, components, systematic	**The Ship of Dreams** air resistance, water resistance, friction, gravity, **World at War** Newton, gears, pulleys, lever, force, pivot **Magnificent Maya** Earth, sun, moon, axis, rotation, phases of the moon, star, constellation, waxing, waning, year, month

Specific Vocabulary Working Scientifically							
		What…? How ….? Why …? similar different best and worst change plan look biggest and smallest compare sort and group	observe change slowly quickly describe name identify label record measure bigger and smaller pattern notice cycle predict	gradually identify observe recognise investigate record units table fair evidence research length observations prediction	similarities differences research and source scientists discovery process cycle measurements conclude evaluate rank plan vary keep constant bar graph table tally	classify interpret pattern relationship prediction analyse interpret conclude evaluate rank variable constants control repeat key relationship line graph	hypothesis variable constants evaluate plan conclude interpret classify categorise database enquiry control repeat support refute degree of trust scatter graph