Science Progression of Skills 2021-2022

	Autumn 1	Autumn 2a (3 WEEKS) Autumn	Autumn 2b (4 WEEKS) Autumn	Spring 1a (4 WEEKS)	Spring 1b (2WEEKS)	Spring 2	Summer 1	Summer 2
Theme	It's all Magic (Fairytale/ Traditional story focus)	Crash! Bang!	Winter Wonderland	Breaking News!	Chinese New Year Festival	Down on the Farm	Climate Change!	When I grow up!

EYFS

Fundamental Outdoor Learning Skills for all children:

- To take risks, engage in new experiences, and learn by trial and error.
- Use senses to explore the world around them.
- To think of ideas, different ways to solve problems and follow instructions.
- To work collaboratively with others, listening to other ideas and demonstrating friendly behaviour.
- To be able to ask adults or peers for help.
- To be aware of the boundaries set, and of behavioural expectations in the setting.

Development Matters (2021) *3 & 4 Year Olds* *Children in Reception*	Talk about what they see, using a wide vocabulary. Explore the natural world around them. Recognise some environments that are different from the one in which they live.	Use all their senses in hands-on exploration of natural materials. Explore collections of materials with similar and/or different properties. Talk about what they see, using a wide vocabulary. Begin to understand the need to respect and care for the natural environment and all living things. Talk about the differences between materials and changes they notice.	Explore collections of materials with similar and/or different properties. Talk about what they see, using a wide vocabulary. Explore how things work. Explore and talk about different forces they can feel. Recognise some environments that are different from the one in which they live.	Talk about what they see, using a wide vocabulary. Plant seeds and care for growing plants. Understand the key features of the life cycle of a plant and an animal. Describe what they see, hear and feel whilst outside. Understand the effect of changing seasons on the natural world around them.	Talk about what they see, using a wide vocabulary. Explore how things work. Begin to understand the need to respect and care for the natural environment and all living things. Explore the natural world around them. Describe what they see, hear and feel whilst outside.	**ELG: The Natural World** Children at the expected level of development will: 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;

Updated 15.06.2021

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						Understand the effect of changing seasons on the natural world around them.	Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.
Outdoor learning	**Health and Safety** ● To know how to travel safely on rough ground. ● To know how to carry sticks and move logs safely. ● To be aware of those around them and maintain a safe distance, especially when moving equipment. ● To be able to understand how to store and move equipment safely. ● To know the sensible clothing and protection they need when outside, i.e. waterproofs, coats, wellies, gloves. ● To understand that they need to wash their hands after touching anything outside and to not put anything close or in their mouths.			**Changes in seasons and environment** *Personal skills:* ● To use their ideas to independently respond to the environment around them. ● To talk about why things happen and how things work. ● To be able to use a range of tools safely to demonstrate their knowledge of outdoor learning ● To be able to communicate clearly in team games. ● To be aware of those around them and maintain a safe distance, especially when moving equipment. ● To be able to talk about how being outside is making them feel. *Building skills:* ● To build a safe tower out of sticks. ● To use material resources to create a piece of art. ● To move logs to create a track or space for animals.		**Being an Independent Outdoor Learner** ● To know how to stay safe outdoors independently. ● To independently use, tidy away and discuss different tools and equipment. ● To know how to look after their environment. ● To describe the benefits of being outside. ● To know how to find mini-beasts and how to safely return them to their habitat. ● To build a collaborative masterpiece using a range of natural materials. ● To understand what a den is and begin to build a den with adult support.	
Key Vocabulary	**Fundamental vocabulary that children should know by the end of the year:** Outside, plant, tree, animals, natural, change, grow, food, live, life, tall, long, weather, season, winter, spring, autumn, summer, wind, rain, sun, cloud, water, air, rainbow, snow, soft, smooth, hard, round, straight, spikey, sharp, colour, pattern, same, different, material, healthy, unhealthy, sleep, diet, exercise, heart, body, move, spin, twist, bend, hot, cold, environment, safety, woods, pond, mini-beast, build, stick, log, waterproof, den, tools.							

Updated 15.06.2021

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	This is not an extensive list of vocabulary and this can be added to based on the children and Teacher judgement. The reason for this is to prevent the narrowing of the curriculum for EYFS.

Updated 15.06.2021

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Year 1

Science days and weeks						National Science Week 7th-11th March 2022	In School Science Week- Whole school climate change exhibition (on playground)	
Area of Science		**Everyday materials** Identify up to 6 materials and describe some physical properties. Sort a range of materials into groups and make the distinction between the object and the material it is made from. **Key vocabulary:** absorbent/not absorbent, bending, bendy/not bendy, gas, glass, hard/soft, liquid, metal, plastic, property, rock, rough/smooth, shiny/dull, solid, squashing, stretching,	**Seasonal change** Name and identify general seasonal change. Identify general characteristics of the seasons. Describe the changing seasons with a number of indicators and relate the weather typically associated with each season across a year. **Key Vocabulary** autumn, dark, day length, days, hours, light, months, moon, movement, shadow, spring, summer, sun, winter	**Everyday materials** Identify the suitability of materials and why the properties are important. To understand what recycling is and its importance. **Key vocabulary:** absorbent/not absorbent, bending, bendy/not bendy, gas, glass, hard/soft, liquid, metal, plastic, property, rock, rough/smooth, shiny/dull, solid, squashing, stretching, stretchy/stiff, twisting, water, waterproof/not		**Plants** Name up to 10 common plants and /or trees and name most plant/tree plants by selecting correct labels Gather and record data. Relate parts of plants to food stuff **Key vocabulary:** branches, bud, bulb, deciduous tree, evergreen tree, flowers, fruit, garden/flowering plants, leaves, petals, roots, seed, stem, trunk, wild plants, twig **Local plants/flowers**:	**Seasonal change** Associate the changing seasons with indicators to animal and plant behaviour. Discuss the temperature of the seasons. Explain how the daylight hours vary. Identify and understand what pollution is. Understand what energy is used for. **Key Vocabulary** autumn, dark, day length, days, hours, light, months, moon, movement, shadow, spring, summer, sun, winter	**Animals, including humans** Identify most body parts by selecting correct labels to pictures. Identify why it is important to keep healthy. **Key Vocabulary:** **Body** - head, neck, shoulders, arms, elbows, wrist, fingers, chest, abdomen, legs, thighs, knees, shins, feet, toes. **Senses** - tongue-taste, nose-smell, ears hearing, eyes-sight, skin-touch.

Updated 15.06.2021

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		stretchy/stiff, twisting, water, waterproof/not waterproof, wood. opaque/see-through		waterproof, wood. opaque/see-through		daffodils, poppies, dandelions, sunflowers, snowdrops, beans, carrots, tomatoes, strawberries, mint. **Identify trees:** oak, ash, horse chestnut, sycamore, pine, conifer, holly.	**Animals, including humans** Describe the characteristics of mammals, birds, fish, reptiles and amphibians. **Key vocabulary:** Food fish (cod, trout, tuna) clownfish, shark; fish: goldfish, koi. **Amphibians:** frog, toad, newt. **Birds**: blackbird, robin, starling, sparrow, tit, pigeon, duck, penguin, ostrich, swan, chicken. **Mammals**: Humans, wild animals such as primates, (ape, gorilla, orangutan, chimpanzee) monkey, lion, tiger, elephant, zebra, giraffe etc. **Carnivores**- meat eaters- tiger, wolf,	

Updated 15.06.2021

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							orca, owl, eagle, hawk. **Herbivores**-plant eaters- rabbit, zebra, sheep, horse, cow: **Omnivores**-plant and meat eaters- Human, bear, badger, ape. **Farm animals:** cow, horse, sheep, goat, donkey. **Pet animals**: cat, dog, hamster, mouse, guinea pig: Woodland animals: badger, fox, deer, squirrel	
Emerging **Use in conjunction to Assessment tracker grids**		I can identify a limited number of materials with prompting. I can describe at least one physical property of a limited number of materials with prompting. I can group together similar materials.	I can identify general characteristics of the seasons. I can name the four seasons.	I can say why a material has been used, linking to the properties. I can identify simple objects made of one material.		I can name a limited number of plants with prompting. I can name some plant/tree parts with prompting	I can identify why there is changing seasons. I know what temperature is. I can describe all common chordate animals as having an internal skeleton of bones covered by flesh with visible sense organs, eyes,	I can identify body parts with prompting. I know the 5 senses.

Updated 15.06.2021

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							ears, nose, tongue etc.	
Expected **Use in conjunction to Assessment tracker grids**		I can identify up to 6 materials with prompting questions. I can describe some physical properties of some materials. I can sort a range of materials into groups with prompting questions.	I can relate the weather typically associated with each season across a year.	I can make the distinction between the object and the material it is made from. I can give reasons, using Scientific vocabulary, as to why a material is suitable. I know what recycling is and can sort materials into groups.		I can name up to 10 common plants and /or trees with little prompting I can name most plant/tree plants by selecting correct labels to pictures answering simple questions.	I can describe the changing seasons with a number of indicators. I can link changing seasons to animal behaviour. I can give a numerical equivalence to the temperature of the seasons. I can correctly describe mammals and birds as warm blooded covered with fur and feathers, and fish, reptiles and amphibians as cold blooded; fish as having scales, reptiles and amphibian as having rough or smooth skin.	I can identify most body parts by selecting correct labels to pictures etc. I can use the 5 senses correctly. I can identify how people stay healthy.
Exceeding **Use in conjunction to**		I can identify over 6 materials with confidence and certainty.	I can explain how the daylight hours vary between	I can identify combination materials with		.I can name over 10 common plants/trees with confidence.	I can associate the changing seasons with a number of indicators to animal	I can identify all body parts accurately drawing and pictures and/or

Updated 15.06.2021

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Theme	It's all Magic (Fairytale/ Traditional story focus)	Crash! Bang!	Winter Wonderland	Breaking News!	Chinese New Year Festival	Down on the Farm	Climate Change!	When I grow up!
Assessment tracker grids		I can identify the physical properties of a wide range of materials with confidence and certainty, gathering and recording data to help in answering questions. I can sort a range of materials accurately and consistently into groups explaining their reasoning.	mid-winter and mid-summer.	confidence and certainty. I can explain what recycling is and why it is important. I can sort materials and objects into recycling groups and give reasons for my choices.		I can gather and record data to help. I can name all common plants and trees written labelling of pictures and diagrams: asking simple questions. I can use my observations and ideas to relate parts of plants to food stuffs	and plant behaviour and give reasons as to why. I can give a numerical equivalence to the temperature of the seasons. e.g. using the rhyme "5, 10, 21- winter, spring and summer sun" and compare the temperatures in different environments. I can use my observations to describe most mammals, reptiles and amphibian as having four limbs (arms and) legs or flippers) and suggest examples of those that do not obviously show these	diagrams associating the correct parts with one (or more) of the five senses. I can explain why 5 senses are important. I can explain why it is important to stay healthy and what people can do to stay healthy.
Outdoor Learning	**Key skills:** - To work in a team to build a shelter and animal home.	**Key skills:** - To create a natural picture frame and discuss the	**Key skills:** - To discuss the weather and how it has an impact on			**Key skills:** -To observe and describe how seeds and bulbs grow. -To identify and	**Key skills:** -To discuss the weather and how it has an impact on the environment.	**Key skills:** -To know what humans and animals need to

Updated 15.06.2021

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	- To make a miniature shelter using natural materials.	properties of the natural materials that they have used (flexible or non-flexible) - To use natural materials to create artwork that they can talk about. (mud painting) - To make a miniature shelter using natural materials.	the environment.			name a variety of wild and garden plants. -To describe the plant structure (including trees)-To identify deciduous and evergreen trees. -To name and identify some trees in our grounds by using a simple ID guide. -To look after the animals, plants and creatures in their environment.		survive (water, food, air).
Working Scientifically ***These statements link explicitly to the ideas for depth cards.***	**Asking Questions and Carrying Out Fair and Comparative Tests** Children can: ● explore the world around them, leading them to ask some simple scientific questions about how and why things happen. ● begin to recognise ways in which they might answer scientific questions. ● carry out simple practical tests, using simple equipment. ● experience different types of scientific enquiries, including practical activities.							
				Observing and Measuring Changes Children can: ● observe the natural and humanly constructed world around them.			**Drawing Conclusions, Noticing Patterns and Presenting Findings** Children can: ● notice links between cause and effect with support.	

Updated 15.06.2021

Science Progression of Skills 2021-2022

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		• observe changes over time. use simple measurements and equipment. • make careful observations, sometimes using equipment to help them observe carefully.	• begin to notice patterns and relationships with support. • begin to draw simple conclusions. • identify and discuss differences between their results. • use simple and scientific language. • read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge.
		Identifying, Classifying, Recording and Presenting Data Children can: • use simple features to compare objects, materials and living things. • decide how to sort and classify objects into simple groups with some help. • record and communicate findings in a range of ways with support. • sort, group, gather and record data in a variety of ways to help in answering questions such as in simple sorting diagrams, tally charts and simple tables.	

Year 2

Science days and weeks	.					National Science Week 7th-11th March 2022	In School Science Week- Whole school climate change exhibition (on playground)	

Updated 15.06.2021

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Theme	It's all Magic (Fairytale/ Traditional story focus)	Crash! Bang!	Winter Wonderland	Breaking News!	Chinese New Year Festival	Down on the Farm	Climate Change!	When I grow up!

Area of Science								
	Uses of everyday materials Identify objects which can be made from a number of different materials. Describe and record observations of how some objects are changed by bending, twisting or stretching. **Key Vocabulary** **As per Year 1 plus,** Characteristic classification, manmade, natural, properties.	**Uses of everyday materials** Identify and explore materials that are unsuitable to make objects and explain their properties in relation to their suitability. To understand why recycling is important and know how we can have an impact on the environment. **Key Vocabulary** **As per Year 1 plus,** characteristics classification, manmade, natural, properties.	**Seasonal change** Consolidate learning of general seasonal change. Compare characteristics of the seasons. Describe the changing seasons with a number of indicators and relate the weather typically associated with each season across a year. **Key Vocabulary** autumn, dark, day length, days, hours, light, months, moon, movement, shadow, spring, summer, sun, winter.	**Animals, including humans** Draw and label a diagram of a simple food chain. Sort pictures of humans at key stages of development and can identify some changes in capabilities at the different stages. Discuss how to stay healthy, what we need to survive and what happens when we exercise. **Key Vocabulary** Adult, baby, bacteria, balanced diet, carbohydrates, child, circulation, dairy, exercise, fats, fibre, fitness, food groups, germs, growth, healthy, heart rate, infection, life cycle, minerals, nutrition,		**Plants** Draw and label diagrams to record their observations and record simple measurements of how seeds and bulbs grow. Discuss why the plants in different conditions grow differently **Key Vocabulary** **As per Year 1 plus,** germination, insect pollination, nutrients, pollination, seed dispersal, wind pollination. **Identify trees**: oak, ash, horse chestnut, sycamore, fruit tree, spruce, pine, conifer, holly, blackberry, or hawthorn		**Living things and their habitats** Identify and classify some things that are living, dead and have never been alive. Identify the animals and plants which live in a range of contrasting habitats and explain the features of the habitats which meet the needs of those animals and plants. **Key Vocabulary** adaptation, alive, carnivore, characteristics, conditions, consumer, dead, excrete, feed, food chain, grow, habitat, heat, herbivore, life processes, light, living/non-living, micro-habitat,

Updated 15.06.2021

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				protein, teenager, toddler, vitamins.		**Refer to Year 2 Outdoor learning activities document**		move, ocean, omnivore, pond, producer, rainforest, reproduce, respire, respond to stimuli, seashore, sound, touch, woodland **Refer to Year 2 Outdoor learning activities document**
Emerging **Use in conjunction to Assessment tracker grids**	I can identify that materials can be used to make a number of different things. I can describe how the shapes of some objects can be changed by squashing and know that some objects are too hard to be squashed by hand.	I can give suggestions as to why a material would be unsuitable for an object. I can explain what recycling is and why it is important. I can sort materials and objects into recycling groups and give reasons for my choices.	I can relate the weather typically associated with each season across a year.	I can match some parents and offspring, including human babies and adults and animals where parents and offspring look similar. I can identify that animals need water, food and air for survival. I know that humans need exercise to keep healthy. I can select from a range of foods some which make up a balanced meal. I know that I should wash my hands before eating.		I can record my observations of how seeds and bulbs grow through drawings or photographs I can match simple labels to the correct stage of a plant's growth. I can observe and record through drawings or photographs how different conditions of water, light and temperature affect the growth and health of plants.		I can identify and classify some things that are living, dead and have never been alive and can identify one of the processes used to inform my sorting with prompting questions. I can match some animals and plants to their habitats and give some reasons for my matching with prompting questions. I can sort animals and plants into two

Updated 15.06.2021

Science Progression of Skills 2021-2022

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								contrasting habitats.
Expected **Use in conjunction to Assessment tracker grids**	I can identify three objects which can be made from a number of different materials. I can describe and record my observations of how some objects are changed by bending, twisting or stretching. I know that the properties of some objects mean that they cannot be bent, twisted, or stretched by hand.	I can give examples of other materials that are unsuitable to make those objects and are able to say why they are unsuitable in terms of their properties. I can explain what recycling is and why it is important. I can explore how we are affecting the environment and suggest ways to improve this.	I can explain how the daylight hours vary between mid-winter and mid-summer.	I can match a wider range of parents and offspring, including examples where parents and offspring look dissimilar. I can sort pictures of humans at key stages of development and can identify some changes in capabilities at the different stages. I can give a suggestion as to the health implications of lack of food, water or air. I know that my heart pumps faster when I exercise and that I can feel this as a pulse. I can identify the main food groups and can plan my own balanced meal.		I can draw and label diagrams to record their observations and record simple measurements of how seeds and bulbs grow. I can give simple explanations why the plants in different conditions grow differently.		I can identify and classify some things that are living, dead and have never been alive and can identify two or three of the processes used to inform my sorting with prompting questions. I can match a range of animals and plants to the most suitable habitats and give reasons for my matching with prompting questions. I can identify the animals and plants which live in two contrasting habitats.

Updated 15.06.2021

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				I can explain why I should wash my hands.				
Exceeding **Use in conjunction to Assessment tracker grids**	I can give more than three examples to show my understanding that a range of materials can be used to make many different objects, clearly explaining the relationship between the properties of the materials and the function of the objects in scientific terms.	I can invent a new material which has a number of useful properties. I can relate my knowledge of the properties of objects to their functions. I can describe and explain why a material would not be suitable for specific objects and use scientific vocabulary to give reasons. I can explain what recycling is and why it is important, using scientific vocabulary. I can explore how we are affecting the environment and suggest ways to improve this, giving reasons for my choices.	I can compare the weather typically associated with each season across a year and explain why they change. I can explain how the daylight hours vary between mid-winter and mid-summer . I can describe how the change of season may affect the environment using scientific vocabulary.	I can draw and label diagrams of food chains using appropriate scientific vocabulary for a human meal and at least two carnivorous animals. I can demonstrate awareness of the life cycles of a wider range of animals. I can describe why humans eat different types and amounts of food at different stages of development. I can identify how exercise impacts the body in relation to heart and circulation of blood and oxygen. I can explain the consequences of not eating a balanced diet and can name all of the main food	.	I can take and record using standard measures to show my understanding of how seeds and bulbs grow. I can explain the lifecycle of a plant I have studied, including the replanting of harvested seeds to grow a new plant. I can predict, test, and record, through drawings or photographs, and talk about my observations to show an understanding of the conditions that plants need to grow and stay healthy. I can use my understanding from this investigation to make predictions		I can sort things that are living, dead and have never been alive accurately and consistently into groups explaining their reasoning by referring to more than three of the processes used to inform my sorting. I can explain the relationship between animals and plants living in habitats, giving examples from more than two contrasting habitats. I can identify the animals and plants which live in a range of contrasting habitats and explain the features of the habitats which meet the needs of

Updated 15.06.2021

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				groups and their role. I know that germs can make humans unwell and can identify how the spread of germs can be reduced.		about what will happen when a different type of plant is studied through different conditions		those animals and plants.
Outdoor learning **Focus on den building and constructing Survival skills**	**Confident constructors** ● To make constructions for different purposes: e.g. rafts; animal bridges; stick towers; outdoor orchestra; sundials; water traps. ● To build a waterproof shelter using tarpaulins. ● To group materials according to their own criteria. **Refer to Year 2 Outdoor learning activities document**			**Outdoor explorers** ● To know that soils are made from rocks and organic matter. ● To name some common garden birds and talk about their features. ● To name the common trees in our grounds- using a tree identification chart ● To talk about how to encourage wildlife into an area. ● To match tracks and other signs to animals. **Refer to Year 2 Outdoor learning activities document**			**Survival skills** ● To explain what humans and animals need to survive. ● To work with others to research and obtain survival essentials. ● To find and identify safe wild food. ● To understand the rules for safe foraging. ● To collect, store and purify water. ● To carry out fieldwork – classifying and surveying animals and their habitats. **Refer to Year 2 Outdoor learning activities document**	
Working Scientifically ***These statements link explicitly to the ideas for depth cards.***	**Asking Questions and Carrying Out Fair and Comparative Tests** Children can: ● explore the world around them, leading them to ask simple scientific questions about how and why ● things happen, using key scientific vocabulary; ● recognise ways in which they might answer scientific questions; ● ask people questions and use simple secondary sources to find answers; ● carry out simple practical tests, using simple equipment; ● experience different types of scientific enquiries, including practical activities; ● talk about the aim of scientific tests they are working on; ● with support, start to recognise a fair test.							

Updated 15.06.2021

Science Progression of Skills 2021-2022

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	Observing and Measuring Changes Children can: ● observe the natural and humanly constructed world around them; ● observe changes over time; ● use simple measurements and equipment; ● make careful observations, choosing and using appropriate equipment to help them observe carefully.	**Identifying, Classifying, Recording and Presenting Data** Children can: ● use simple features to compare objects, materials and living things; ● decide how to sort and classify objects into groups, giving scientific reasoning as to why; ● record and communicate findings in a range of ways; ● sort, group, gather and record data in a variety of ways to help in answering questions such as in simple sorting diagrams, pictograms, tally charts, block diagrams and simple tables.	**Drawing Conclusions, Noticing Patterns and Presenting Findings** Children can: ● notice links between cause and effect; ● notice patterns and relationships; ● begin to draw simple conclusions; ● identify and discuss differences between their results; ● use simple and scientific language and understanding the meaning of this vocabulary; ● read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage 1; talk about their findings to a variety of audiences in a variety of ways.
Year 3			
Area of Science	**Forces and magnets** ● 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	**Light** ● 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 changes. **Rocks**	**Animals including humans** ● 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 animals have skeletons and muscles for support, protection and movement.

Updated 15.06.2021

Science Progression of Skills 2021-2022

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<tr><td></td><td colspan="2">

- Predict whether two magnets will attract or repel each other, depending on which poles are facing.

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- Compare and group together different kinds of rocks (including those in the locality) on the basis of 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.

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Plants

- 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
- 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.
- Know that plants make their own food.

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<tr><td rowspan="2">Working Scientifically</td><td colspan="4">

Asking Questions and Carrying Out Fair and Comparative Tests

Children can:

- start to raise their own relevant questions about the world around them in response to a range of
- scientific experiences;
- start to make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions;
- recognise when a fair test is necessary;
- help decide how to set up a fair test, making decisions about what observations to make, how long to make them for and the type of simple equipment that might be used;
- set up and carry out simple comparative and fair tests.

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Observing and Measuring Changes

Children can:

- make systematic and careful observations;
- observe changes over time;
- use a range of equipment, including thermometers and data loggers;

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Identifying, Classifying, Recording and Presenting Data

Children can:

- talk about criteria for grouping, sorting and classifying;
- group and classify things;
- collect data from their own observations and measurements;

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Drawing Conclusions, Noticing Patterns and Presenting Findings

Children can:

- draw simple conclusions from their results;
- make predictions;

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Updated 15.06.2021

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	• ask their own questions about what they observe; • where appropriate, take accurate measurements using standard units using a range of equipment.	• present data in a variety of ways to help in answering questions; • use, read and spell scientific vocabulary correctly and with confidence, using their growing word reading and • spelling knowledge; • record findings using scientific language, drawings, labelled diagrams, keys, bar charts and tables.	• suggest improvements to investigations; • raise further questions which could be investigated; • first talk about, and then go on to write about, what they have found out; • report and present their results and conclusions to others in written and oral forms with increasing confidence. **Using Scientific Evidence and Secondary Sources of Information** Children can: • make links between their own science results and other scientific evidence; • use straightforward scientific evidence to answer questions or support their findings; • identify similarities, differences, patterns and changes relating to simple scientific ideas and processes; recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations.
Year 6			
Area of Science	**Electricity**	**Evolution and inheritance**	**Animals, including Humans**

Updated 15.06.2021

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	• 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. • Learn how to represent a simple circuit in a diagram using recognised symbols. **Light** • 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. • 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. • Look at a range of phenomena including rainbows, colours on soap bubbles, objects looking bent in water and	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. • Be introduced to the idea that characteristics are passed from parents to their offspring, i.e. different breeds of dogs, and what happens when, for example, Labradors are crossed with poodles. • Appreciate that variation in offspring over time can make animals able to survive in particular environments, for example, by exploring how giraffes' necks got longer. • Find out about the work of palaeontologists such as Mary Anning and about how Charles Darwin and Alfred Wallace developed their ideas on evolution.	• 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. • Explore questions to understand how the circulatory system enables the body to function. • 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. • Explore the work of scientists. **Living things and their habitats** • 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.

Updated 15.06.2021

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<table>
<tr><td></td><td colspan="3">coloured filters (they do not need to explain why these phenomena occur).</td><td colspan="3">● Know that broad groupings, such as microorganisms, plants and animals can be subdivided.
● Should classify animals into commonly found invertebrates (such as insects, spiders, snails, worms) and vertebrates (fish, amphibians, reptiles, birds and mammals).
● Find out about the significance of the work of scientists such as Carl Linnaeus, a pioneer of classification.</td></tr>
<tr><td rowspan="2">Working Scientifically</td><td colspan="6">Asking Questions and Carrying Out Fair and Comparative Tests
Children can:
● with growing independence, raise their own relevant questions about the world around them in response to a range of scientific experiences;
● with increasing independence, make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions;
● explore and talk about their ideas, raising different kinds of scientific questions;
● ask their own questions about scientific phenomena;
● select and plan the most appropriate type of scientific enquiry to use to answer scientific questions;
● make their own decisions about what observations to make, what measurements to use and how long to make them for, and whether to repeat them;
● plan, set up and carry out comparative and fair tests to answer questions, including recognising and controlling variables where necessary;
● use their test results to identify when further tests and observations may be needed;
● use test results to make predictions for further tests.</td></tr>
<tr><td colspan="2">Observing and Measuring Changes
Children can:
● choose the most appropriate equipment to make measurements and explain how to use it accurately;
● take measurements using a range of scientific equipment with increasing accuracy and precision;
● take repeat readings when appropriate;
● understand why we take an average in repeat readings.</td><td colspan="2">Drawing Conclusions, Noticing Patterns and Presenting Findings
Children can:
● notice patterns;
● draw conclusions based in their data and observations;</td><td colspan="2">Using Scientific Evidence and Secondary Sources of Information
Children can:
● use primary and secondary sources evidence to justify ideas;
● identify evidence that refutes or supports their ideas;</td></tr>
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	Identifying, Classifying, Recording and Presenting Data Children can: ● independently group, classify and describe living things and materials; ● use and develop keys and other information records to identify, classify and describe living things and materials; ● decide how to record data from a choice of familiar approaches; ● record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar graphs and line graphs.	● use their scientific knowledge and understanding to explain their findings; ● read, spell and pronounce scientific vocabulary correctly; ● identify patterns that might be found in the natural environment; ● look for different causal relationships in their data; ● discuss the degree of trust they can have in a set of results; ● independently report and present their conclusions to others in oral and written forms.	● recognise where secondary sources will be most useful to research ideas and begin to separate opinion from fact; ● use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas; talk about how scientific ideas have developed over time.

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