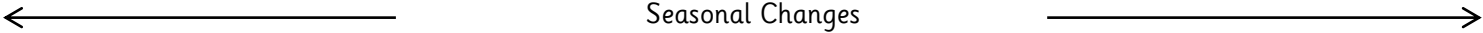


**GUARDIAN ANGELS' RCPS
SCIENCE LONG TERM PLAN**

	Learning Journey 1	Learning Journey 2	Learning Journey 3
Nursery	Humans We want our children to know... We are human. Some of us are boys and some are girls. Name some parts of the body (head, eyes, nose, mouth, ears, neck, shoulder, arms, hands, fingers, chest, tummy/belly, bottom, legs, knees, feet, toes) Know I need to wash my hands and brush my teeth. To Know babies, grow into adults.	Solids, Liquids and Gases Animals We want our children to know... Some solids melt when they get warm (ice and chocolate). If liquid is frozen it becomes solid. To know ice and frost in melts over the day.	Plants We want our children to know... To know plants are living things. Some plants might live with us (house/garden plants). Recognise that plants and grow. That plants generally grow from seeds or bulbs planted in the ground. To grow runner beans.
	 Seasonal Changes		
Reception	Humans We want our children to know... To name skeleton features of the human body. To know how to keep our bodies healthy. To investigate using the five senses.	Solids, Liquids and Gases We want our children to know... To know some solids melt when they get warm (ice, chocolate and cheese) and if you heat water up in a kettle it creates steam. Animals We want our children to know... To name some animals and types of animals (e.g. insects/minibeasts, mammals,	Plants We want our children to know... To name parts of plants including leaves, stem and flower and roots. To observe plants and trees around us. To name a daffodil, tulip and a dandelion.

		birds, fish and reptiles). To know some animals are born live and some come from eggs (link to knowledge of human babies and chicks). To Recognise some animals have three clear stages – e.g. caterpillar-cocoon-butterfly and that animals live in different habitats.	
	← Seasonal Changes →		
Year 1	Animals Including Humans <u>Are all animals part of the same group?</u> We want our children to know... The basic parts if the human body and say which part of the body is used for each sense. To know that there are different animal groups and they can be grouped based on their basic structure and grouped from the food they eat including carnivores, herbivores and omnivores. We will watch closely using equipment, do tests, name and group, use observations and ideas to suggest answers to questions and collect and record data to help answer questions.	Everyday Materials <u>Do all materials have the same properties?</u> We want our children to know... The difference between an object and the material it is made from, how to compare objects based on their material and to be able to describe simple properties of everyday materials. We will ask questions and know they can be answered in different ways, watch closely using equipment, carry out tests, name and group use observations and ideas to suggest answers to questions and collect and record data to help answer questions.	Plants <u>Do plants and trees have the same structure?</u> We want our children to know... The names common flowering plants and plant types, to be able to describe the basic structure of a flowering plant and a tree. To know there are two types of trees including deciduous and evergreen trees and be able to sort these into groups. We will name and group, watch closely using equipment, ask questions and know they can be answered in different ways, use observations and ideas to suggest answers to questions. We will have a trip to the allotment to see what is growing.
	← Seasonal Changes → <u>Do different seasons have different weather?</u>		

	We want our children to know... The names of the four seasons, the months they are in and the different types of weather associated with each season. We will watch closely using equipment, use observations and ideas to suggest answers to questions and collect and record data to help answer questions.		
Year 2	Living Things and their Habitats (Intro to unit - revisited through the year) <u>Do all animals live in the same habitat?</u> We want our children to know... The difference between things that are living, dead and never been alive. To know animals and plants live in habitats suited to their needs, to know the difference between a habitat and a micro-habitat and to know animals obtain their food from plants and other animals. We will ask questions and know they can be answered in different ways, watch closely using equipment, carry out tests and name and group. Plants (Intro to unit - revisited through the year) We will visit the allotment at different times of the year to see which different plants are growing.	Everyday Materials <u>Can all materials be changed the same way?</u> We want our children to know... How to compare everyday materials, know how certain materials have a particular job, be able to change objects by squashing, bending, stretching and classify these into groups based on how they can be changed. We will ask questions and know they can be answered in different ways, watch closely using equipment, carry out tests, use observations and ideas to suggest answers to questions and collect and record data to help answer questions. Animals Including Humans <u>Do all animals have offspring the same way?</u> We want our children to know... To know animals including humans have babies that grow into adults, to know all animals have a life cycle, to know what	Plants <u>Do all plants grow at the same time?</u> We want our children to know... That bulbs have to be planted at different times of the year in order to grow, to know that there are different stages of growth in a plant (seed, germination, roots, stem, leaves, flower, seed dispersal) and to know that plants need water, light and a suitable temperature in order to grow healthy. We will collect and record data to help answer questions, use observations and ideas to suggest answers to questions and ask questions and know they can be answered in different ways. Living Things and their Habitats (Revisit from Learning Journey 1) We will visit forest school at different times of the year to see how animals adapt to their habitats.

		animals and humans need to survive and to know the importance of exercise and keeping clean. We will ask questions and know they can be answered in different ways, watch closely using equipment, use my observations and ideas to suggest answers to questions and collect and record data to help answer questions.	
Year 3	Animals Including Humans <u>Do all animals have the same diet?</u> We want our children to know... To know that animals need the right type of nutrition, to be able to compare animals based on their diets, name the main food groups knowing the importance of each if the different nutrients, know what a balanced diet is and to be able to compare animals and human skeletons.	Rocks <u>Do all rocks have the same physical properties?</u> We want our children to know... The names of different types of rocks sedimentary, metamorphic and igneous, be able to classify them based on their properties, know how rocks change over time and know that fossils are formed when things that live are trapped in rock. Forces and Magnets <u>Are magnets magnetic on all materials?</u> We want our children to know... That a force is a push or a pull, that some forces need contact between two objects, that magnetic forces can act at a distance, that magnets attract and repel and know that magnets have two poles and that these determine whether a magnet will attract or repel.	Plants <u>Do all plants grow the same amount of roots?</u> We want our children to know... The name and the functions of roots (anchor & nutrition), stem/trunk (support and water transportation), leaves (photosynthesis), flower and petals. How to Identify examples of plants which have different requirements (cactus less need for water, orchids don't really need soil, air plants grow on other plants and not in the ground). To know Plants are limited by the amount of room they have and how to repot plants to allow larger growth and know Water is taken into plants by the root. Light <u>Do all surfaces reflect the light?</u> We want our children to know...

			That humans and animals need light to see things. That certain surfaces reflect light better. That the light from the sun can be dangerous and how we can protect our eyes. That shadows are formed when the light source is blocked and look at patterns and how the sizes of shadows change.
Year 4	Animals Including Humans <u>Do all teeth have the same function?</u> We want our children to know... The different types of teeth in humans and their simple functions. To compare the teeth of carnivores and herbivores and explain the differences between them. To identify the main organs in the human body and digestive system and describe the function of each organ. Be able to describe the journey of food from mouth to anus. Identify producers, predators and prey and be able to draw simple food chains.	Sound <u>Does sound always come from the same source?</u> We want our children to know... That sound comes from a source and that sound is made when something vibrates. To know that sound travels through a medium to the ear. To find patterns between pitch and sound and recognise that sound gets fainter as the distance from the source increases. States of Matter <u>Do all solids, liquids and gases evaporate?</u> We want our children to know... The different states of matter (solids, liquids and gases). To compare and group materials together according to whether they are solids, liquids or gases. Know that some materials change state when they are heated or cooled. Know that water has 3 states of matter and	Living Things and their Habitats <u>Do all living things have the same characteristics?</u> We want our children to know... That living things can be grouped by their characteristics, to be able to name the main types of living things, to know that the environment can change and affect plants and living things and can become dangerous. Electricity <u>Do all common appliances run on the same electricity?</u> We want our children to know... To know that electricity is a form of energy and I can identify common appliances that run on electricity. Know the importance of electrical safety. Be able to make a simple series electrical circuit and name its components, including cells, wires, bulbs, switches and buzzers, draw a simple circuit, identify whether or not a lamp will light in a

		explain the relationship between temperature and evaporation.	simple series circuit and to recognise that a switch opens and closes a circuit and describe the effect it has.
Year 5	Forces <u>Do all objects need the same amount of force to move?</u> We want our children to know... That forces make objects start moving, stop moving, speed up, slow down or change direction. To explain that objects fall towards the Earth because of the force of gravity. To know that Air Resistance is the force that slows down objects that move through air. To know that Water Resistance is a force that slows down objects moving through water and know that Friction is a force against motion caused by two surfaces rubbing against each other Earth and Space <u>Are all the planets made out of the same rock?</u> We want our children to know... To know the names and order of the planets (Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, Pluto-note "dwarf planet") To know the relative sizes of the planets and to know the different types of planets (rock, gas giants, dwarf planets)	Properties and Changes of Materials <u>Do all materials dissolve in liquid?</u> We want our children to know... To know that materials can be grouped together based on their properties: hardness; solubility; transparency; thermal conductivity; electrical conductivity; response to magnets, know that some materials will dissolve in liquid to form a solution. To know that mixtures can be separated through filtering, sieving and evaporating and I can use my knowledge of solids, liquids and gases to decide how to do this. To know that dissolving, mixing, melting, freezing, evaporating and condensing are reversible changes and I can demonstrate this.	Living Things and their Habitats <u>Do all animal types have the same life cycle?</u> We want our children to know... To know the life cycles of mammals, amphibians, birds and insects. To know Asexual reproduction is where the parent reproduces completely on its own. This is most common in plants but can also happen in animals. To know the difference between internal fertilisation (e.g. mammals, reptiles, birds) and external fertilisation (e.g. fish). Animals Including Humans <u>Do all animals have the same gestation period?</u> We want our children to know... To know the gestation period is the length of time a mammal carries her offspring inside her body before giving birth. To research the gestation periods of other animals and draw conclusions. To know about the changes that occur in humans during puberty. To know humans go through a variety of changes as we grow and develop from birth through to old age and can describe these changes.

Year 6	Animals Including Humans <u>Does the circulatory system provide our body with what we need to stay healthy?</u> We want our children to know... To know the circulatory system consists of the heart, blood and blood vessels. To know that the circulatory system transports nutrients and water in the blood to all the parts of the body that need them and these nutrients provide us with energy, know and can describe the functions of the heart, blood vessels and blood. To know the effects of diet and lifestyle on the body and know how to keep my body healthy. To know drugs can be harmful. Evolution and Inheritance <u>Do all living things end up as a fossil?</u> We want our children to know... To know many species are extinct. We only know what we have learned from fossils or written/art sources. To know most living things have changed over time – they may have become bigger, smaller, or changed their diet to survive, know fossils provide information about many extinct species, but particularly dinosaurs and we can tell how old fossils are using carbon dating. To know offspring generally share similarities with their parents.	Electricity <u>Do all bulbs need the same voltage?</u> We want our children to know... To know a circuit is a complete path that an electric current can flow around and if the circuit is not complete the electric current cannot flow. To use symbols when drawing a simple circuit in a diagram. To understand how the brightness of a lamp or the volume of a buzzer is affected by the number and voltage of cells and explain how and why the brightness of bulbs and the loudness of buzzers may vary and how switches work.	Living Things and their Habitats <u>Do all living things have the same characteristics?</u> We want our children to know... To know Living things have different characteristics (nocturnal, plant, animal, herbivore, winged, predators etc.). To Know plants and animals are two main groups but there are other living things that do not fit into these groups e.g. micro-organisms such as bacteria and yeast, and toadstools and mushrooms. To know animals can be divided into two main groups: those that have backbones (vertebrates); and those that do not (invertebrates). Vertebrates can be divided into eight small groups: fish; amphibians; reptiles; birds; insects; arachnids; crustaceans and mammals. Each group has common characteristics. Invertebrates can be divided into a number of groups, including insects, spiders, snails and worms. Light <u>Does all light travel in straight lines?</u> We want our children to know... To know light travels in straight lines from a light source. To explain that objects are seen because they give out or reflect light into the eye. To know that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. To use my knowledge of light travelling in

	Most offspring have differences to their parents.		straight lines to explain why shadows have the same shape as the objects that cast them.
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