Science Intent Map

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year R	**Weather and Seasons** Children will learn about the different seasons here in the UK and the weather that comes with them! **Our body** This unit will enable learning about our different body parts and what they are useful for, as well as encouraging children to consider how our bodies change from when we are a baby.	**The senses** Children will look at the different senses and how they interact with one another, and what our senses enable us to do. **Food** Children will begin to think about where the food they eat comes from, as well as what forms a healthy diet.	**Animals** Children discover different types of animals from mammals to birds to insects. **Plants** In this unit, they can learn about how plants are made, where they come from and how to look after them!	**Materials** This unit encourages children to discover, with their senses, the materials around them every day. **Space** Children will be encouraged to star-gaze and understand more about what is in Space, and what happens in Space! They will also find out a little more about how Space travel is conducted by learning about rockets!	**Machines** Machines are all around us, mechanical and hand-held. In this unit, children can begin by learning about non-living things before moving on to learn about machinery and how it makes it easier for humans to complete certain jobs. **Forces** How we can apply force to an object but also how the nature and materials of an object can dictate how it responds to forces and conditions.	**Insects and invertebrates** Children can learn about insects and invertebrates and their habitats. **Health and Safety** It is important for children to learn how to be safe - around the home and when using equipment. In this unit, there is an emphasis on safety - including how to take precautions and how to react if you are unsafe.
Year 1	**Seasonal changes** This unit on 'Seasonal Changes' teaches children how to observe changes across the 4 seasons and observe and describe weather associated with the seasons and how day length varies.	**Animals, including humans 1 – All about me** Children will learn how to identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	**Everyday Materials 1 – Exploring Everyday Materials** Children will learn how to distinguish between an object and the material from which it is made. They also learn how to identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock. They describe the simple physical properties of a variety of everyday materials.	**Everyday Materials 2** Children will learn how to distinguish between an object and the material from which it is made. They also learn how to identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock. They describe the simple physical properties of a variety of everyday materials. And finally, they learn how to compare and group together a variety of everyday materials on the basis of their simple physical properties.	**Plants** Children will learn how to identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. They also learn how to identify and describe the basic structure of a variety of common flowering plants, including trees.	**Animals, including humans 2 – All about animals** Children will learn how to identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. They learn how to identify and name a variety of common animals that are carnivores, herbivores and omnivores. And finally, they learn how to describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets).
Year 2	**Uses of Materials** Children will have the opportunity to identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses Explore with practical investigations how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching	**Living things and their habitats** **Living things and their habitats - Habitats around the world** Comparing and exploring the differences between things that are living, dead, and things that have never been alive. During the unit children will investigate how most things live in habitats to which they are suited. Children will be able to identify and name a variety of plants and animals in their habitats, including microhabitats		**Animals, including humans 1 - Growth** **Animals, including humans 2 - Life cycles** Children will discover that animals, including humans, have offspring which grow into adults. They will create experiments to investigate the importance of exercise, eating the right amounts of different types of food, and hygiene, linking this to real life contexts. Children will compare and describe the basic needs of animals, including humans, for survival.		**Plants** By conducting experiments over time children will grow and observe how seeds and bulbs develop into mature plants. Through discussion and investigations children will learn to describe how plants need water, light and a suitable temperature to grow and stay healthy.
Year 3	**Scientific enquiry** Children will learn the scientific skills they will need to apply during each unit of learning during key stage 2	**.Forces and magnets** Throughout the unit children will have the opportunity to compare how things move on different surfaces. Children will get to investigate how magnets attract or repel each other and attract some materials and not others. Compare and group together a variety of everyday materials. Create experiments to predict whether two magnets will attract or repel each other, depending on which poles are facing	**Rocks** By comparing and grouping together different kinds of rocks children will learn to identify rocky types on the basis of their appearance and simple physical properties. Children will explore how fossils are formed and compare different living things that are trapped within rock.	**Animals, including humans** Children will have the opportunity to investigate why humans and some other animals have skeletons and muscles for support, protection and movement. Through careful fact finding activities children will 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.	**Plants** By growing and exploring different flowering plants children will be able to identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers They will investigate the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow). Children will have the opportunity to 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	**Light** By utilising a range of real life experiences and experiments children will learn to recognise that they need light in order to see things and that dark is the absence of light. Investigate how shadows are formed when the light from a light source is blocked by an opaque object Find patterns in the way that the size of shadows change Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.

Year 4	**Living things and their habitats** To begin the unit children will investigate how living things can be grouped in a variety of ways. They will have the chance to explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. Explore the impact humans can have on habitats.	**Animals, including humans** Through practical investigation children will explore the simple functions of the basic parts of the digestive system in humans. With the support of local experts children will identify the different types of teeth in humans and their simple functions. By constructing and interpreting a variety of food chains children will be able to identify producers, predators and prey.	**Living things and their habitats - conservation** Children learn how to recognise that environments can change and that this can sometimes pose dangers to living things. Children learn about ecosystems, human impact through deforestation, air pollution, water pollution and how humans can have a positive impact on nature.	**States of matter** Develop their knowledge of materials by comparing and grouping materials together, according to whether they are solids, liquids or gases. By using observational skills, investigate that some materials change state when they are heated or cooled. Have the opportunity to 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	**Sound** By exploring and investigating children will 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. Design an investigation to explore if sounds get fainter as the distance from the sound source increases.	**Electricity** Children will have the opportunity to investigate how lamps and buzzers work in a circuit. Comparing how the brightness of a lamp or the volume of a buzzer changes with the number and voltage of cells used in the circuit. They will learn how to use recognised symbols when representing a simple circuit in a diagram.
Year 5	**Properties of Materials** Children will have the opportunity to identify and compare everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal). After investigation children will know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.	**Changes of Materials** Children will apply their prior knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. They can then design experiments to test and prove their ideas. They will be able to give reasons, based on evidence from and fair tests, for the particular uses of everyday materials. 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.	**Living things and their habitats** Children will apply their previous knowledge of living things and their habitats to further develop their understanding of the differences in the life cycles of a mammal, an amphibian, an insect and a bird. Then extending their learning to describe the life process of reproduction in some plants and animals	**Forces** Through practical investigation children will explore that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. After discussion they will be able to identify the effects of air resistance, water resistance and friction. Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect	**Animals, including humans** Through discussion and fact finding activities children will learn to describe the changes as humans develop to old age.	**Earth and Space** Children will have the opportunity to investigate the movement of the Earth and other planets relative to the sun in the solar system. They will apply this knowledge to then describe the movement of the moon relative to the Earth. Through practical investigations children will be able to explain the Earth's rotation and how this creates day and night. comparative
Year 6	**Electricity** Through practical investigation children will Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. Applying their prior knowledge they will be able to 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. When creating scientific diagrams children will use recognised symbols when representing a simple circuit in a diagram.	**Animals including humans** Throughout the unit children will have the opportunity to identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. Drawing on prior knowledge they will recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.	**Light** To begin the unit children will investigate that light appears to travel in straight lines. They will 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. After exploration children will be able to 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.	**Living things and their habitats** By exploring and investigating children will 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. They will further develop their knowledge to give reasons for classifying plants and animals based on specific characteristics	**Evolution and Inheritance** During this topic children will make links to the world around them to help recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. Children will explore that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. Through investigation children will identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution	**Looking after the environment** Children explore: the core concepts – 'what the climate is, how it changes, the difference between a man-made and natural environment and where different types of animals live'.