Science Road Map

	Cycle A			Cycle B		
	AUTUMN	**SPRING**	**SUMMER**	**AUTUMN**	**SPRING**	**SUMMER**
FS	**Understanding of the World – The World** Changing seasons Exploring the effects of changing seasons on the world around us. Planting and growing – life cycle of plants – plant sensory garden. Talk about why things happen: eg cooking	**Understanding of the World – The World** Talk about why things happen – water-ice experiments. Planting and growing – life cycle of plants – plant sensory garden. Share non-fiction texts that offer an insight into contrasting environments. Talk about things we have observed such as animals and plants Show care for living things (pets) Talk about why things happen: eg cooking Changing seasons	**Understanding of the World – The World** Growth & Change: frog/newt/butterfly life cycle Planting and growing – life cycle of plants – plant sensory garden. Changing seasons Show care and concern for living things in the environment Start to develop an understanding of growth, decay and changes over time Talk about some of the things we have observed such as plants, animals, natural and found objects Talk about why things happen: eg cooking Materials: Floating / Sinking – boat building Metallic / non-metallic objects	**Understanding of the World – The World** Changing seasons Exploring the effects of changing seasons on the world around us. Planting and growing – life cycle of plants – plant sensory garden. Talk about why things happen: eg cooking	**Understanding of the World – The World** Talk about why things happen – water-ice experiments. Planting and growing – life cycle of plants – plant sensory garden. Share non-fiction texts that offer an insight into contrasting environments. Talk about things we have observed such as animals and plants Show care for living things (pets) Talk about why things happen: eg cooking Changing seasons	**Understanding of the World – The World** Growth & Change: frog/newt/butterfly life cycle Planting and growing – life cycle of plants – plant sensory garden. Changing seasons Show care and concern for living things in the environment Start to develop an understanding of growth, decay and changes over time Talk about some of the things we have observed such as plants, animals, natural and found objects Talk about why things happen: eg cooking Materials: Floating / Sinking – boat building Metallic / non-metallic objects
Year 1/2	**Theme: Plants, Structure and classification** **Subject:** Biology (Y1 only part of the DE scheme on trees. Because of autumn tree changing) Key Learning: 1.Identify and name a variety of common and wild garden, including	**Theme: Animals including humans** **Subject:** Biology Y1 All about me Y2 Growth Key Learning: All About Me 1. Discover the basic parts of the human body	**Theme: Plants** (Y1)Y2 **Subject:** Biology Key learning: 1.Observe and describe how seeds and bulbs grow into mature plants 2. Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy	**Theme: Everyday materials (y1 x 2 and Y2)** **Subject:** Chemistry Key learning: 1.Distinguish between an object and the material it is made of. 2.Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.	**Theme: Animals including humans** **Y1 all about animals** **Subject:** Biology Key Learning: 1. Discover animal families 2. Learn about the differences between mammals and birds	**Theme: Living things and their habitats (Y2 x2)** **Subject:** Biology 1.Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals- including pets 2.Identify and name a variety of common animals that are carnivores, herbivores and omnivores.

Science Road Map

	deciduous and evergreen trees 2.Identify and describe the basic structure of a variety of common trees. Know that fruit trees and vegetables are varieties of plants 2x explicit developing science enquiry skills Leaf looking TAPS **Theme: Seasonal changes (Y1)** Subject: Physics Investigate measuring rainfall - Identify the four seasons - Understand the changes that take places in Autumn - Understand the changes that take places in winter - Identify different types of weather - Understand the changes that take places in Spring - Understand the changes that take places in Summer	2. Learn about your eyes and sight 3. Learn about your ears and hearing 4.explore the tongue and taste. 5. explore the sense of touch 6. explore how noses smell Growth 1. describe the needs of humans for survival 2. explore the importance of eating the right food 3. describe what a healthy, balance diet looks like 4. investigate the impact of exercise on our bodies 5.investigate the importance of hygiene	4. Identify and describe the basic structure of a variety of common flowering plants **3x explicit developing science enquiry skills** Understand that seeds grow into plants (y1) Know the difference between seeds and bulbs (y2) Design an experiment to find out what plants need to grow (y2) Describe what plants need to grow and stay healthy(y1) Identify the basic parts of a plant (1) Understand that different plants can grow in the same environment (y1) Understand that plants adapt to suit their environment (y2) Record the growth of a plant (y1) Observe and record the growth of plants over time (y2) Describe the life cycle of a plant (y2)	3 Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. 4 Describe the simple physical properties of a variety of everyday materials. 5. Compare and group together a variety of everyday materials on the basis of their simple physical properties. 6.Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	3. Learn about the differences between amphibians, reptiles and fish 4.Discover the types of food living things eat 5.Explore the differences between wild animals and pets 6. Explain the characteristics of an animal **Animals including humans- lifecycles Y2** Subject: Biology 1. Learn how to order the stages of human life cycle 2. Describe the stages of life from adulthood to old age 3. Learn how to match offspring to their parent 4. Explore the life cycles of a chicken 5. Describe the life cycle of a butterfly 6. Explore the life cycle of a frog	3.Identify and name a variety of plants and animals in their habitats, including micro-habitats 4.Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) 5.Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. 6.Explore and compare the differences between things that are living, dead, and things that have never been alive. 7.Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other 8. Notice that animals including humans have offspring which grow into adults.

Science Road Map

Year 3/4	**Theme: Forces and magnets** **Subject: Physics** Compare how things move on different surfaces Group everyday materials on the basis of whether they are attracted or repel each other and attract some materials and not others Understand magnetic poles. notice that some forces need contact between two objects, but magnetic forces can act at a distance Describe magnetics as having two poles. predict whether two magnets will attract or repel each other, depending on which poles are facing **Theme: Electricity** **Subject: Physics** Identify common appliances that run on electricity Construct a simple series electrical circuit, identifying and naming its basic parts Recognise that a closed circuit is required for lamp to light in a simple series circuit Recognise common conductors and insulators recognise that a switch opens and closes a circuit and associate this with lamps	**Theme: Animals, including humans** **Subject: Biology** Identify how animals get nutrition from what they eat. Describe the simple functions of the basic parts of the digestive system in humans Identify the different types of teeth in humans and their simple functions Construct and interpret a variety of food chains Identify how animals get nutrition from what they eat **Theme: Animals including humans** **Subject: Biology** Identify that humans and other animals have skeletons and muscles	**Theme: Sound** **Subject: Physics** Identify how we hear sounds Explore patterns in pitch and volume of sounds Recognise that vibration of sound travel through a medium to the ear. Find patterns between the volume of a sound and the strength of the vibrations that produced it. Recognise that sounds get fainter as the distance from the sound source increases. **Theme: Plants** **Subject: Biology** Identify and describe the functions of different parts of flowering plants Explore the requirements of specific plants for life and growth Investigate how water is transported within plants Explore the part that flowers play in plant life cycles	**Theme: Living things and their habitats** **Subject: Biology** Recognise that living things can be grouped in a variety of ways Group, identify and name a variety of living things in their local and wider environment **Theme: Light** **Subject: Physics** Recognise that we need light in order to see things and that dark is the absence of light Recognise that light from the sun can be dangerous and how to protect eyes Understand, and find patterns, in shadow formation recognise that shadows are formed when a light source is blocked by an opaque object Notice that light is reflected from surfaces.	**Theme: States of matter** **Subject: Chemistry** Compare and group materials as solids, liquids or gases Understand the water cycle Observe that changes in temperature cause some materials to change state **Theme: Rocks** **Subject: Chemisty** Compare and group together different kinds of rocks Describe how fossils are formed when things that have lived are trapped in rock Recognise that soils are made from rocks and organic matter	**Theme : Living things and their habitat -Conservation** **Subject :Biology** • Understand that ecosystems are affected by changes in the seasons • Understand that habitats around the world experience different seasons which changes their ecosystem • Understand that it is not just the seasons which cause ecosystems to change Understand human impact on the environment through deforestation • Use scientific evidence to present your findings about deforestation • Explore the measures humans can take to protect the rainforests **Scientific Enquiry unit** ask relevant questions and use different types of scientific enquiries to answer them set up simple practical enquiries, comparative and fair tests make systematic and careful observations and, where appropriate, take accurate measurements using standard units, and use a range of equipment, including thermometers and data loggers gather, record, classify and present data in a variety of ways to help in answering questions record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables displays or presentations of results and conclusions

Science Road Map

Year 5/6	**Theme: Earth and Space (Y5)** **Subject:** Physics Describe the movement of the Earth, and other planets, relative to the Sun in the solar system Describe the movement of the Moon relative to the Earth Describe the Sun, Earth and Moon as approximately spherical bodies Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky. **Animals including humans (Y6)** **Subject:** Biology 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 functions Describe the ways in which nutrients and water are transported within animals, including humans.	**Animals including humans (Y5)** **Subject:** Biology Describe the changes as humans develop to old age Identify the key stages of a mammal's life cycle Explore the gestation period of mammals. Learn about foetal development Investigate the hand span of differently aged children Learn about the changes in puberty Describe the changes experienced in old age Forces (Y5) **Subject:** Physics Identify the effects of forces that act between moving surfaces Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object Identify the effects of air resistance, water resistance and friction, that act between moving surfaces Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	**Electricity (Y6)** **Subject:** Physics Use recognised symbols when representing a simple circuit in a diagram 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 variation in how components function, including the brightness of bulbs, the loudness of buzzer and the on/Off position of switches Note: safety when working with electricity. Only taught about series circuits not parallel. **State of matter (changes in material) Y5** **Subject:** Chemistry describe how to recover a substance from a solution; demonstrate that dissolving, mixing and changes of state are reversible changes; and finally, they learn how to explain that some changes result in the formation of new materials and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda. Only for 2024 we will also be teaching **Properties of materials** **Subject:** Chemistry compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets; know that	**Light (Y6)** **Subject:** Physics Recognise that light to 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 eyes or from light sources to objects and then the eyes Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. **Properties of materials Y5** **Subject:** Chemistry Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets; know that some materials will dissolve in liquid to form a solution, use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating; and finally, they learn how to give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic	**Evolution and Inheritance (Y6)** **Subject:** Biology 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.	**Living things and their habitats (Y5)** **Subject:** Biology Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird Describe the life process of reproduction in some plants and animals **Living things and their habitats (Y6)** **Subject:** Biology Describe how and why living things are classified into broad groups according to common observable characteristics and based on similarities and difference, including microorganism, plants and animals Give reasons for classifying plants and animals based on specific characteristics.

Science Road Map

			some materials will dissolve in liquid to form a solution, use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating; and finally, they learn how to give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.			

	Plants	Animals including human	Living things and their habitat	Evolutions and inheritance	Rocks	Material and their properties	States of matter	Forces and magnets	Seasonal changes	Electricity	Light	Earth and space	Sound
Reception													
Y1/2 A	X3	X2											
Y1/2 B		X2	X2			X2							
Y3/4 A		X2											
Y3/4 B			X2										
Y5/6 A		X2											
Y5/6 B			X2										