Tall Oaks Academy Trust Progression Map for Science

Strand	Knowledge		EYFS	1	2	3	4	5	6
Plants	National Curriculum / ELG		The Natural World: 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. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.	Pupils should be taught to: - identify and name a variety of common wild and garden plants, including deciduous and evergreen trees - identify and describe the basic structure of a variety of common flowering plants, including trees.	Pupils should be taught to: - observe and describe how seeds and bulbs grow into mature plants - find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.	Pupils should be taught to: - 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.			
	Progression in knowledge	Assessed Knowledge		Identify & describe the basic structure of a variety of common flowering plants, including trees	Find out about and describe how plants need water, light and a suitable temperature to grow and stay healthy	Explore the parts that flowers play in the life cycle of flowering plants, including pollination, seed formation & seed dispersal	**N/A**	**N/A**	**N/A**
		Name and Identify	I know that plants grow and are usually green. I know that plants change as they grow. I know that we use plants for food.	identify and name a variety of common wild and garden plants, including deciduous and evergreen trees	*Identify and name a variety of plants and animals in their habitats, including microhabitats.* *Y2 - Living things and their habitats*		*Recognise that living things can be grouped in a variety of ways.* *Y4 - Living things and their habitats* *Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. Y4 - 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 micro-organisms, plants and animals.* *Y6 - Living things and their habitats* *Give reasons for classifying plants and animals based on specific characteristics. Y6 - Living things and their habitats*
		Parts of a Plant		identify and describe the basic structure of a variety of common flowering plants, including trees.		identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. Investigate the way in which water is transported within plants			
		Life Cycle			observe and describe how seeds and bulbs grow into mature plants	Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.		Describe the life process of reproduction in some plants and animals. Y5 - Living things and their habitats	
		What Plants Need			find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.	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	*Recognise that environments can change and that this can sometimes pose dangers to living things.* *Y4 - Living things and their habitats*		
	Vocabulary	Assessed Vocabulary		Plant, Leaf, Root, Stem, Flower, Petal, Seed, Bulb, Germinate, Trunk, Branch, Deciduous, Evergreen	Water, Light, Temperature, Growth, Healthy	Formation, Germination, Nutrients, Dispersal, Pollination, Reproduction, Transportation, Flower	**N/A**	**N/A**	**N/A**
		Key Vocabulary	Plant, green, grow, chnage, food.	Plant, Leaf/Leaves, Root, Stem, Flower, Petal, Seed, Bulb, Germinate, Trunk, Branch, Deciduous, Evergreen	Water, Light, Temperature, Growth, Healthy, Germination, Reproduction	Air, Light, Water, Soil, Nutrients, Dispersal, Pollination, Reproduction, Transportation, Flower			
Living things and their habitats	National Curriculum		The Natural World: 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. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.		Pupils should be taught to: - explore and compare the differences between things that are living, dead, and things that have never been alive - 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 - identify and name a variety of plants and animals in their habitats, including micro-habitats - describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name		Pupils should be taught to: - recognise that living things can be grouped in a variety of ways - explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment - recognise that environments can change and that this can sometimes pose dangers to living things.	Pupils should be taught to: - 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	Pupils should be taught to: 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 Give reasons for classifying plants and animals based on specific characteristics.
	Progression in knowledge	Assessed Knowledge		N/A	Describe how habitats are suited to different animals and how they provide for their basic needs	N/A	Describe environmental changes and how they can pose dangers to living things	Describe the process of reproduction in some plants and animals	Give reasons for classifying plants & animals based on specific characteristics
		Classifying	I know that living things have similarities and differences.	*Identify and name a variety of common animals that are carnivores, herbivores and omnivores.* *Y1 - Animals including humans* *Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). Y1 – Animals, including humans*	Explore and compare the differences between things that are living, dead, and things that have never been alive. Identify and name a variety of plants and animals in their habitats, including micro-habitats.		Recognise that living things can be grouped in a variety of ways Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment		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 Give reasons for classifying plants and animals based on specific characteristics.
		Life Processes				*Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.* *Y3 - Plants*		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	*Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.* *Y6 - Evolution and inheritance*

		Habitats			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.		Recognise that environments can change and that this can sometimes pose dangers to living things.		*Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. Y6 - Evolution and inheritance*
		Food Chains		*Identify and name a variety of common animals that are carnivores, herbivores and omnivores.* *Y1 - Animals including humans*	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.		*Construct and interpret a variety of food chains, identifying producers, predators and prey.* *Y4 - Animals, including humans*		
	Vocabulary	Assessed Vocabulary		N/A	Habitat (and examples of each)	N/A	Environment, Habitat, Micro-habitat	Life-cycle, Reproduction, Offspring	Classification, Micro-organism, Vertebrates, Invertebrates, Insect, Amphibian, Reptile, Mammal, Bird
		Key vocabulary	Living things, alive, plants, animals		Alive, Dead, Never Alive, Habitat(+examples of each), Food Chain, Predator, Prey		Fish, Reptile, Mammal, Bird, Amphibian, Vertebrates, Invertebrates, Environment, Habitat, Micro-habitat	.Life-cycle, Reproduction, Mammal, Insect, Amphibian, Bird, Offspring	Classification, Micro-organism, Vertebrates, Invertebrates, Insect, Amphibian, Reptile, Mammal, Bird
Animals including humans	National Curriculum		The Natural World: 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. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.	Pupils should be taught to: Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. Identify and name a variety of common animals that are carnivores, herbivores and omnivores. Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	Pupils should be taught to: - notice that animals, including humans, have offspring which grow into adults - find out about and describe the basic needs of animals, including humans, for survival (water, food and air) - describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	Pupils should be taught to: - 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 other animals have skeletons and muscles for support, protection and movement.	Pupils should be taught to: - 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, identifying producers, predators and prey.	Pupils should be taught to: - describe the changes as humans develop to old age.	Pupils should be taught to: - 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.
	Progression in knowledge	Assessed Knowledge		Identify, name, draw & label the basic parts of the human body & say which part of the body is associated with each sense	Describe the importance for humans of exercise, eating the right amounts of different types of food & hygiene	Identify that humans need the right types and amounts of nutrition and they cannot make their own nutrients; they get nutrition from what they eat	Describe the simple functions of the basic parts of the digestive system	Describe the changes as humans develop to old age	Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function
		Naming and identifying	I know that changes occur when animals grow.	Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. Identify and name a variety of common animals that are carnivores, herbivores and omnivores.					
		Life Processes		Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).	Find out about and describe the basic needs of animals, including humans, for survival (water, food and air).		Construct and interpret a variety of food chains, identifying producers, predators and prey.	Describe the changes as humans develop to old age.	
		Reproduction			Notice that animals, including humans, have offspring which grow into adults.			*Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.* *Y5 - Living things and their habitats* *Describe the life process of reproduction in some plants and animals.* *Y5 - Living things and their habitats*	
		The Human Body		Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.		Identify that humans and some other animals have skeletons and muscles for support, protection and movement.	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		Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood
		Health			Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	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.			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.
	Vocabulary	Assessed Vocabulary		Head, Nose, Ear, Eye, Leg, Back, Arms, Touch, Smell, Taste, Sight, Hear	Survival, Water, Air, Food, Grow, Nutrition Exercise, Hygiene	Nutrition, Diet, Vitamins, Minerals, Fat, Protein, Dairy, Sugar, Carbohydrates, Fibre, Water	Mouth, Tongue, Teeth, Oesophagus, Stomach, Small Intestine, Large Intestine, Digestive System	Growth, Development, Puberty, Baby, Toddler, Teenager, Elderly	Exercise, Alcohol, Drugs, Lifestyle
		Key vocabulary	Change, grow, animals.	Fish, Reptile, Mammal, Bird, Amphibian (+examples of each), Herbivore, Omnivore, Carnivore, Plants, Meat, Head, Nose, Ear, Eye, Leg, Back, Arms, Wing, Beak	Survival, Water, Air, Food, Adult, Baby, Offspring, Grow, Nutrition, Kitten, Calf, Puppy, Exercise, Hygiene	Skeleton, Skull, Ribs, Bones, Joints, Muscles, Movement, Nutrition, Diet, Vitamins, Minerals, Fat, Protein, Carbohydrates, Fibre, Water	Mouth, Tongue, Teeth, Incisor, Canine, Molar, Oesophagus, Stomach, Small Intestine, Large Intestine, Digestive System, Food Chain, Herbivore, Carnivore	Foetus, Embryo, Womb, Growth, Gestation, Development, Puberty, Baby, Toddler, Teenager, Elderly,	Heart, Lungs, Liver, Blood, Circulatory, Vessel, Vain, Artery, Exercise, Respiration, Oxygenated, Deoxygenated
Evolution	National Curriculum		The Natural World: 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. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.						Pupils should be taught to: - 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.
		Assessed Knowledge		**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	Explain how inheritance and adaptation link to evolution

and inheritance	**Progression in knowledge**	**Adaptation**	I know that changes occur when animals grow.		*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.* *Y2 - Living things and their habitats*		*Recognise that environments can change and that this can sometimes pose dangers to living things.* *Y4 - Living things and their habitats*		Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.
		Evolution				*Describe in simple terms how fossils are formed when things that have lived are trapped within rock.* *Y3 - Rock)*			Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.
		Inheritance			*Notice that animals, including humans, have offspring which grow into adults.* *Y2 - Animals, including humans*	*Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. Y3 - Plants*		*Describe the life process of reproduction in some plants and animals.* *Living things and their habitats - Y5*	recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents
	Assessed Vocabulary			**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	Change, Fossils, Adaptation, Evolution, Inheritance, Variation, Characteristics, Reproduction, Genetics
	Key vocabulary		Change, grow, animals.						Change, Fossils, Adaptation, Evolution, Inheritance, Variation, Characteristics, Reproduction, Genetics
Seasonal changes	**National Curriculum**		The Natural World: 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. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.	Pupils should be taught to: - observe changes across the four seasons - observe and describe weather associated with the seasons and how day length varies.					
	Progression in knowledge	**Assessed Knowledge**		Observe and describe weather associated with the seasons and how day length varies	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
		Weather	I am beginning to know that the weather in my immediate environment might change from one season to another.	Observe and describe weather associated with the seasons and how day length varies.		*Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.* *Y3 - Light*			
		Seasons		Observe changes across the four seasons.				*Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky.* *Y5 - Earth and space*	
	Assessed Vocabulary			Summer, Spring, Autumn, Winter, Light, Dark, Sun, Moon, Day, Night	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
	Key vocabulary		Weather, season, change, sun, rain, snow, warm, cold, wind.	Summer, Spring, Autumn, Winter, Light, Dark, Sun, Moon, Day, Night					
	National Curriculum		The Natural World: 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. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.	Pupils should be taught to: - distinguish between an object and the material from which it is made - identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock - describe the simple physical properties of a variety of everyday materials - compare and group together a variety of everyday materials on the basis of their simple physical properties.	Pupils should be taught 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 - find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.		Pupils should be taught to: - compare and group materials together, according to whether they are solids, liquids or gases - observe that some materials change state when they are heated or cooled, and 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.	Pupils should be taught to: - 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, and describe how to recover a substance from a solution - use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating - give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic - 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, including changes associated with burning and the	
		Assessed Knowledge		Describe the physical properties of a variety of materials	Identify & compare the suitability of a variety of materials	N/A	Explain the properties of a solid, liquid or gas	Compare and group together everyday materials on the basis of their properties	N/A

Materials	**Progression in knowledge**	**Name materials**	I know that there are similarities and differences in relation to materials and objects. I know that water turns to ice when it's cold. I know that ice melts when it's hot. I know that ice can be slippery.	Distinguish between an object and the material from which it is made. Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.					
		Properties of materials		Describe the simple physical properties of a variety of everyday materials. Compare and group together a variety of everyday materials on the basis of their simple physical properties.	Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	*Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.* *Y3 - Rocks* *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.* *Y3 - Forces and magnets*	*Recognise some common conductors and insulators, and associate metals with being good conductors.* *Y4 - Electricity*	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.	
		Suitability of materials			Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses			Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.	
		States of matter					compare and group materials together, according to whether they are solids, liquids or gases. observe that some materials change state when they are heated or cooled, and 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.	know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. 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, including changes associated with burning and the action of acid on bicarbonate of soda.	
	Vocabulary	**Assessed Vocabulary**		Properties, Hard/Soft, Rough/Smooth, Stretchy/Stiff, Waterproof/Not Waterproof	Material, Properties, Absorbent/Non Absorbent, Opaque/Transparent		Solid, Liquid, Gas, Particles	Hardness, Solubility, Transparency, Conductivity, Dissolve, Filter, Magnetic, Evaporation, Mix	N/A
		Key vocabulary	Water, ice, cold, hot, melt, slippery.	Material, Wood, Plastic, Glass, Paper, Water, Metal, Rock, Properties, Hard/Soft, Rough/Smooth, Stretchy/Stiff, Waterproof/Not Waterproof, Absorbent/Non Absorbent	Material, Wood, Plastic, Glass, Paper, Metal, Rock (+examples of items made of these), Properties, Hard/Soft, Rough/Smooth, Stretchy/Stiff, Waterproof/Not Waterproof, Absorbent/Non Absorbent, Opaque/Transparent		States of matter - Solid, Liquid, Gas, Evaporate/Evaporation, Condensate/Condensation, Temperature, Heat, Freeze, Thermometer	Hardness, Solubility, Transparency, Conductivity, Dissolve, Filter, Magnetic, Evaporation, Mix, Reversible, Irreversible	
Rocks	**National Curriculum**		The Natural World: 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. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.			Pupils should be taught to: - compare and group together different kinds of rocks on the basis of their 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.			
	Progression in knowledge	**Assessed Knowledge**		**N/A**	**N/A**	Compare & group different types of rocks based on appearance and physical properties	**N/A**	**N/A**	**N/A**
		Compare and group rocks	I know that there are similarities and differences in relation to materials and objects.	*Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.* *Y1 - Everyday materials* *Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.* *Y1 - Everyday materials*	*Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.* *Y2 - Uses of everyday materials*	Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.			
		Fossils				Describe in simple terms how fossils are formed when things that have lived are trapped within rock.			*Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.* *Y6 - Evolution and inheritance*
		Soil				Recognise that soils are made from rocks and organic matter.			
	Vocabulary	**Assessed Vocabulary**		**N/A**	**N/A**	Appearance, Physical Properties, Rock, Fossils, Soils, Crystals, Igneous, Metamorphic, Sedimentary	**N/A**	**N/A**	**N/A**
		Key vocabulary	Same, different, rock.			Appearance, Physical Properties, Hard/Soft, Shiny/Dull, Rough/Smooth, Absorbent/Not absorbent, Rock, Fossils, Soils, Crystals, Igneous, Metamorphic, Sedimentary			

Light	National Curriculum		The Natural World: 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. Understand some important processes and changes in the natural world around them, including the seasons and changing states of			Pupils should be taught to: - 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 an opaque object - find patterns in the way that the size of shadows change.			Pupils should be taught to: - 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.
	Progression in knowledge	Assessed Knowledge		**N/A**	**N/A**	Demonstrate an understanding of how shadows are formed	**N/A**	**N/A**	Explain that we see things because light travels from light sources to our eye or from light sources to objects then our eyes
		Seeing	I know that a light can be turned on and off. I know that it is light in the day and dark at night.	*Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.* *Y1 - Animals, including humans*		Recognise that they need light in order to see things and that dark is the absence of 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.
		Reflection				Notice that light is reflected from surfaces.			
		Sources of light				Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.			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
		Shadows				Recognise that 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.			Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.
	Vocabulary	Assessed Vocabulary		**N/A**	**N/A**	Light, Dark, Natural, Artificial, Sunlight, Shadow, Reflect	**N/A**	**N/A**	Travel, Rainbow, Filters, Spectrum
		Key vocabulary	Light, day, night, dark.			Light, Dark, Natural, Artificial, Sun/Sunlight, Shadow, Reflect/Reflective/Reflection,			Light, Dark, Natural, Artificial, Sun/Sunlight, Shadow, Reflect/Reflective/Reflection, Travel, Rainbow, Filters, Spectrum
Forces	National Curriculum		The Natural World: 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. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.			Pupils should be taught to: - 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 - predict whether two magnets will attract or repel each other, depending on which poles are facing.		Pupils should be taught to: - 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.	
	Progression in knowledge	Assessed Knowledge		**N/A**	**N/A**	Explain that magnets attract or repel each other & identify magnetic & non-magnetic materials	**N/A**	Explain the effects of forces acting on an object	**N/A**
		Types of Forces	I know that distance and speed can be related.			Magnetism.		Gravity, air resistance, water resistance, friction.	
		Effects of forces	I know that the speed of an object can be changed.		*Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.* *Y2 - Uses of everyday materials*	Compare how things move on different surfaces. Notice that some forces need contact between two objects, but magnetic forces can act at a distance.		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	
		Magnets				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. Predict whether two magnets will attract or repel each other, depending on which poles are facing.			
		Assessed Vocabulary		**N/A**	**N/A**		**N/A**	Air Resistance, Water Resistance, Gravity, Friction, Surface, Accelerate, Decelerate	**N/A**

	Vocabulary	Key vocabulary	Distance, speed, change.			Force, Magnetic, Push, Pull, Attract, Repel, Poles		Air Resistance, Water Resistance, Gravity, Friction, Surface, Accelerate, Decelerate, Mechanism, Gear, Pulley, Gear, Spring, Move, Break	
Sound	National Curriculum		The Natural World: 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. Understand some important processes and				Pupils should be taught to: - 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 - recognise that sounds get fainter as the distance from the sound source increases.		
	Progression in knowledge	Assessed Knowledge		N/A	N/A	N/A	Explain how humans hear a sound	N/A	N/A
		Hearing	I know that sound can be made by using musical instruments. I know that we use out ears to hear sounds. I know that you need to listen carefully in order to hear certain sounds.	*Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.* *Y1 - Animals, including humans*			Recognise that vibrations from sounds travel through a medium to the ear.		
		How sounds are made					Identify how sounds are made, associating some of them with something vibrating		
		Pitch and volume					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. Recognise that sounds get fainter as the distance from the sound source increases.		
	Vocabulary	Assessed Vocabulary		N/A	N/A	N/A	Vibration, Wave, Pitch, Hear, Sound, Faint, Loud	N/A	N/A
		Key vocabulary	Music, instrument, sound, hear, ear.				Volume, Vibrate/Vibrating/Vibration, Wave, Pitch, Hear, Sound, Faint, Loud		
Electricity	National Curriculum		The Natural World: 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. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.				Pupils should be taught to: - identify common appliances that run on electricity - construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers - identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery - recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit - recognise some common conductors and insulators, and associate metals with being good conductors.		Pupils should be taught to: - 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.
	Progression in knowledge	Assessed Knowledge		N/A	N/A	N/A	Explain why a circuit would work or not work, including the use of conductive or insulating materials, giving reasons why	N/A	Give reasons for variations in how circuit components function
		Uses of Electricity	I know that you need to be careful when using electrical equipment. I know that you need to listen to an adult and be safe when using electrical equipment. I know that some electrical equipment can be turned on and off.				Identify common appliances that run on electricity		
		Circuits					Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.		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
		Components					Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery. Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series 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.
		Conductors and Insulators					Recognise some common conductors and insulators, and associate metals with being good conductors.		
	Vocabulary	Assessed Vocabulary		N/A	N/A	N/A	Cell, Wire, Bulb, Switch or Buzzer, Battery, Circuit, Conductor, Insulator	N/A	Battery, Circuit/Series Circuit, Brightness, Volume, Volts/Voltage, Symbol
		Key vocabulary	Electricity, safe.				Cell, Wire, Bulb, Switch, Buzzer, Battery, Circuit, Conductor, Insulator		Cell, Wire, Bulb, Switch, Buzzer, Battery, Circuit/Series Circuit Conductor, Insulator, Brightness, Volume, Volts/Voltage, Symbol

Earth and Space	**National Curriculum**		The Natural World: 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. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.					Pupils should be taught to: - 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.	
	Progression in knowledge	**Assessed Knowledge**		**N/A**	**N/A**	**N/A**	**N/A**	Describe how the relationship between Earth & Sun creates day & night	**N/A**
		The Earth	I know that there is a sun and a moon. I know that we live on Earth.	*Observe changes across the four seasons.* *Y1 – Seasonal changes* *Observe and describe weather associated with the seasons and how day length varies.* *Y1 – Seasonal changes*				Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.	
		The Moon						Describe the movement of the Moon relative to the Earth.	
		The Solar System						Describe the movement of the Earth, and other planets, relative to the Sun in the solar system. Describe the Sun, Earth and Moon as	
	Vocabulary	**Assessed Vocabulary**		**N/A**	**N/A**	**N/A**	**N/A**	Earth, Sun, Star, Moon, Planet, Sphere, Axis, Rotate/Rotation	**N/A**
		Key vocabulary	Sun, moon, Earth					Earth, Sun, Star, Moon, Planet, Sphere, Axis, Rotate/Rotation, Orbit, Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune	
Working Scientifically	**National Curriculum**		The Natural World: 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. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.	During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: - asking simple questions and recognising that they can be answered in different ways - observing closely, using simple equipment - performing simple tests - identifying and classifying - using their observations and ideas to suggest answers to questions - gathering and recording data to help in answering questions	During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: - asking simple questions and recognising that they can be answered in different ways - observing closely, using simple equipment - performing simple tests - identifying and classifying - using their observations and ideas to suggest answers to questions - gathering and recording data to help in answering questions	During years 3 and 4, pupils should be taught: - asking relevant questions and using different types of scientific enquiries to answer them - setting up simple practical enquiries, comparative and fair tests - making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers - gathering, recording, classifying and presenting data in a variety of ways to help in answering questions - recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables - reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions - using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions - identifying differences, similarities or changes related to simple scientific ideas and processes - using straightforward scientific evidence to answer questions or to support their findings	During years 3 and 4, pupils should be taught: - asking relevant questions and using different types of scientific enquiries to answer them - setting up simple practical enquiries, comparative and fair tests - making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers - gathering, recording, classifying and presenting data in a variety of ways to help in answering questions - recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables - reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions - using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions - identifying differences, similarities or changes related to simple scientific ideas and processes - using straightforward scientific evidence to answer questions or to support their findings	During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: - planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary - taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate - recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs - using test results to make predictions to set up further comparative and fair tests - reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations - identifying scientific evidence that has been used to support or refute ideas or arguments.	During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: - planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary - taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate - recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs - using test results to make predictions to set up further comparative and fair tests - reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations - identifying scientific evidence that has been used to support or refute ideas or arguments.
	Assessed Skill	**Comparative and Fair Testing**	I know that we can investigate different areas of science practically. I know that objects, materials and living things can be explored scientifically. I know that simple predictions can be made.		Perform simple tests		Set up simple practical enquiries, comparative & fair tests I know what a variable is.	Use test results to make predictions to set up further comparative & fair tests I Know what a independent, dependent and controlled variable is.	Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.
		Observing over Time	I know that observation is a key skill of a scientist. I know that comparisons can be made through observation.	Observe closely, using simple equipment	Use observations & ideas to suggest answers to questions	Make systematic & careful observations &, taking accurate measurements using standard units, using a range of equipment, including thermometers & data loggers		Take measurements, using a range of scientific equipment, with increasing accuracy & precision, taking repeat readings when appropriate	
		Pattern Seeking			Gather & record data to help answer questions	Gather, record, classify & present data in a variety of ways to help in answering questions	Use straightforward scientific evidence to answer questions or support their findings		Identify scientific evidence that has been used to support or refute ideas or arguments
		Research	I know that questions can be asked to find answers.	Ask simple questions & recognise that they can be answered in different ways		Ask relevant questions & use different types of scientific enquiries to answer them			
		Identifying, classifying and grouping	I know that living and non-living things can be classified.	Identify & classify		Gather, record, classify & present data in a variety of ways to help in answering questions	Present findings using simple scientific language, drawings, labelled diagrams, keys, bar charts & tables & identify differences, similarities or changes	Record data & results of increasing complexity using scientific diagrams & labels	Report & present findings from enquiries, including conclusions, causal relationships & explanations
	Key vocabulary		Science, question, living, non-living.	Question, Answer, Observe, Equipment, Identify, Sort	Question, Answer, Observe, Equipment, Identify, Sort, Classify, Group, Record, Data, Describe	Research, Enquire, Question, Fair, Systematic, Accurate, Measure, Equipment, Data, Record, Predict, Explain	Research, Enquire, Question, Fair, Systematic, Accurate, Measure, Equipment, Data, Record, Predict, Explain, Gather, Record, Classify, Present, Conclude/Conclusion, Evidence, Improve	Plan, Variables, Measurements, Accuracy, Precision, Repeat, Readings, Evidence, Conclude/Conclusion, Explanation, Compare/Comparative	Plan, Variables, Measurements, Accuracy, Precision, Repeat, Readings, Evidence, Conclude/Conclusion, Explanation, Compare/Comparative, Identify, Classify, Pattern, Systematic, Quantitative