

St Joseph's Catholic Voluntary Academy, Leicester



Medium Term Planning 2024/25 Science

| Year | Nursery | | Subject | Science | | | Academic Year 2024/25 |
|---|--|--|--|--|---|---|--|
| | <p>Prior Knowledge</p> <p>Beginning to ask simple questions</p> <p>Looks closely at small items and creatures, and can also see items at substantial distance, comfortably changing focus from one to the other</p> <p>Explores objects by linking together different approaches: shaking, hitting, looking, feeling, tasting, mouthing, pulling, turning and poking</p> <p>Notices and becomes interested in the transformative effect of their action on materials and resources</p> | | <p>End Point</p> <p>Use all their senses in hands-on exploration of natural materials. Explore collections of materials with similar and/or different properties.</p> <p>Talk about what they see, using a wide vocabulary.</p> <p>Plant seeds and care for growing plants.</p> <p>Understand the key features of the life cycle of a plant and an animal.</p> <p>Begin to understand the need to respect and care for the natural environment and all living things.</p> <p>Explore and talk about different forces they can feel.</p> <p>Talk about the differences between materials and changes they notice.</p> | | | | <p>Key Vocabulary</p> <p>Head, eyes, nose, mouth, ears, hands, fingers, feet, toes, arm, leg, animal.</p> <p>Tree, leaf, plant, flower, stem, seed soil.</p> <p>Material, wood, glass, paper, hard, soft.</p> <p>Day, night.</p> |
| | <i>I wonder what makes me so special?</i> | <i>I wonder why we celebrate?</i> | <i>I wonder what changes in winter?</i> | <i>I wonder how plants grow?</i> | <i>I wonder who lives there?</i> | <i>I wonder why trees are green?</i> | |
| | Sequence of Learning | Sequence of Learning | Sequence of Learning | Sequence of Learning | Sequence of Learning | Sequence of Learning | |
| 1 | To identify and name different parts of our body | Looking at changes in the seasons - Autumn walk | Winter walk - looking at the changes in our school environment | Observational drawings of flowers - naming parts of a plant. | Finding out about animals - farm visit, minibeast hunt. | Observing floating and sinking | |
| 2 | To develop an understanding of our senses and how we use them | Collect and look at Autumn leaves, conkers, pine cones. Children can make collages with the items. | To explore ice and observe how it changes | Spring time walk - look at changes in the environment - flowers/trees/creatures. | | To make observations of the local environment | |
| 3 | To begin to talk about different stages of human life | Talk about nocturnal animals - why are they different. | Looking at animals from cold climates and talk about why they can live there | Plant seeds, care for them and watch their growth. | | | |
| <p>General learning opportunities throughout the year</p> <p>Daily observations of weather - talk about what they notice</p> <p>Experience different types of weather - e.g. ice and snow, rain, sun - all children spend some time outside in all weathers.</p> <p>Tubes, guttering and stands available for exploration of forces and movement.</p> <p>Water - floating and sinking</p> | | | | | | | |



St Joseph's Catholic Voluntary Academy, Leicester

| Year | Reception | | Subject | Science | | Academic Year 2024/25 |
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| | <p>Prior Knowledge</p> <p>Use all their senses in hands-on exploration of natural materials.</p> <p>Explore collections of materials with similar and/or different properties.</p> <p>Talk about what they see, using a wide vocabulary.</p> <p>Plant seeds and care for growing plants.</p> <p>Understand the key features of the life cycle of a plant and an animal.</p> <p>Begin to understand the need to respect and care for the natural environment and all living things.</p> <p>Explore and talk about different forces they can feel.</p> <p>Talk about the differences between materials and changes they notice.</p> | | <p>End Point</p> <p>Children at the expected level of development will:</p> <ul style="list-style-type: none"> - 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. | <p>Key Vocabulary</p> <p>Human, animal, face, hair, back, shoulder, elbow, wrist, knee, ankle.</p> <p>Trunk, branches, plant, leaves, bulb, seed, petals, roots, water, light, grow, growth.</p> <p>Material, wood, glass, plastic, paper, metal, fabric, rock, soft, hard, shiny, smooth, rough.</p> <p>Seasons, summer, autumn, winter, spring, changes, dark, light, day, night, sun, moon, star.</p> <p>Loud, quiet, sound, volume.</p> <p>Ice, water, freeze, melt.</p> | | |
| | <i>I wonder what makes me so special?</i> | <i>I wonder why we celebrate?</i> | <i>I wonder what changes in winter?</i> | <i>I wonder how plants grow?</i> | <i>I wonder who lives there?</i> | <i>I wonder why trees are green?</i> |
| | Sequence of Learning | Sequence of Learning | Sequence of Learning | Sequence of Learning | Sequence of Learning | Sequence of Learning |
| 1 | To talk about the stages of growth of human life. | Looking at changes in the seasons - Autumn walk | Winter walk - looking at the changes in our school environment | Plant seeds and look at their growth under different conditions e.g. no water, no light | Observational drawings of mini-beasts. | Predicting which items will float and sink |
| 2 | To know that they were formed in their mothers' womb. | | Look at animals from a cold climate. Learn some facts about a penguin and how they live in their cold climate, | Make observational drawings of the stages of growth of a plant. | Building waterproof houses | STEM activity - building a boat that floats |
| 3 | To recognise similarities and differences between themselves and others. | | | Spring time walk - look at changes in the environment - flowers/ trees/creatures. | Animal life cycles | Looking after our local environment |
| General learning opportunities throughout the year | | | | | | |

St Joseph's Catholic Voluntary Academy, Leicester



Daily observations of weather - talk about what they notice

Experience different types of weather - e.g. ice and snow, rain, sun - all children spend some time outside in all weathers.

Tubes, guttering and stands available for exploration of forces and movement.

Water - floating and sinking

St Joseph's Catholic Voluntary Academy, Leicester



| Year | Year 1 | Subject | Science | Academic Year 2024/25 |
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| Prior Knowledge | | End Point | | Key Vocabulary |
| Children at the expected level of development will: - Explore the natural world around them, making observations and drawing pictures of animals and plants. - Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. - Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. | | <p>Plants 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 (at least: flower, leaf, root, stem, trunk, seed, branch and petal).</p> <p>Animals - Humans Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</p> <p>Animals - Other Identify and name a variety of common animals including some fish, some amphibians, some reptiles, some birds and some mammals. Identify and name a variety of common animals that are carnivores, herbivores and omnivores (i.e. according to what they eat). Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, and including pets). Find out and describe how animals look different to one another. Group together animals according to their different features. Recognise similarities between animals: Structure: head, body, way of moving, senses, body covering, tail.</p> <p>Materials 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, rock, brick, paper and cardboard. Describe the simple physical properties of a variety of everyday materials.</p> | | <p>fish, reptiles, mammals, birds, amphibians (+ examples of each) herbivore, omnivore, carnivore, leg, arm, elbow, head, ear, nose, back, face, ankle, waist wrist, chest, eye, mouth, knee, foot, fingers, thumb, wings, beak, scales, fur, hair, fins, gills, warm blooded, cold blooded, eggs, deciduous, evergreen trees, leaves, flowers (blossom), petals, fruit, roots, bulb, seed, trunk, branches, stem, wood, plastic, glass, paper, water, metal, rock, hard, soft, bendy, rough, smooth summer, spring, autumn, winter, sun, day, moon, night, light, dark, weather, wind, rain, cloudy, snow, hail, fog, similarities, differences, group</p> |
| | | | | Assessment Questions |
| | | | | See Knowledge Organisers |

St Joseph's Catholic Voluntary Academy, Leicester



Compare and group together a variety of everyday materials on the basis of their simple physical properties.
Seasonal Changes
 Observe and describe changes across the four seasons.
 Observe and describe weather associated with the seasons and how day length and temperature vary.

| | Sequence of Learning: Robots | Sequence of Learning: Fire! Fire! | Sequence of Learning: Family Album | Sequence of Learning: Penguins, Possums and Pigs | Sequence of Learning: The Great Outdoors |
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| | To observe changes that happen during the seasons. (ongoing) To recognise seasonal and daily weather patterns in the UK. (ongoing) | To observe changes that happen during the seasons. (ongoing) To recognise seasonal and daily weather patterns in the UK. (ongoing) | To observe changes that happen during the seasons. (ongoing) To recognise seasonal and daily weather patterns in the UK. (ongoing) | To observe changes that happen during the seasons. (ongoing) To recognise seasonal and daily weather patterns in the UK. (ongoing) | To observe changes that happen during the seasons. (ongoing) To recognise seasonal and daily weather patterns in the UK. (ongoing) |
| 1 | To recognise and name parts of the body. | To identify and name the different parts of a plant (trees). | To recognise that humans are animals. To compare and describe differences in their own features. | To identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. | To identify and name a variety of everyday materials. |
| 2 | To say which part of the body is associated with each sense. To ask simple questions. To perform simple tests. To use observations and ideas to suggest answers to questions. (sense of sight). | To describe the similarities and differences between leaves. | To be able to recognise that humans have many similarities. | To be able to describe and compare a variety of common animals. To be able to group together animals according to their different features. | To distinguish between an object and the material from which it is made. |
| 3 | To say which part of the body is associated with each sense. To ask simple questions. To perform simple tests. To use observations and ideas to suggest answers to questions. (sense of touch and hearing). | To recognise and talk about the difference between deciduous and evergreen trees. | To identify and name a variety of common garden plants. | To identify a variety of common animals that are carnivores, omnivores or herbivores. | To describe the simple physical properties of a variety of everyday materials. |

St Joseph's Catholic Voluntary Academy, Leicester



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| 4 | To say which part of the body is associated with each sense. To ask simple questions. To perform simple tests. To use observations and ideas to suggest answers to questions. (sense of smell and taste) | | To identify and name a variety of common wild plants. | | To observe closely. To perform simple tests. To use their observations and ideas to suggest answers to questions. |
| 5 | | | To identify and describe the basic structure of a variety of common flowering plants. | | To compare and group everyday materials based on their simple physical properties. |
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St Joseph's Catholic Voluntary Academy, Leicester



| Year | Year 2 | Subject | Science | Academic Year 2024/25 |
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| Prior Knowledge | | End Point | | Key Vocabulary |
| <p>Plants 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 (at least: flower, leaf, root, stem, trunk, seed, branch and petal).</p> <p>Animals - Humans Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</p> <p>Animals - Other Identify and name a variety of common animals including some fish, some amphibians, some reptiles, some birds and some mammals. Identify and name a variety of common animals that are carnivores, herbivores and omnivores (i.e. according to what they eat). Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, and including pets). Find out and describe how animals look different to one another. Group together animals according to their different features. Recognise similarities between animals: Structure: head, body, way of moving, senses, body covering, tail.</p> <p>Materials 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, rock, brick, paper and cardboard. Describe the simple physical properties of a variety of everyday materials.</p> | <p>Living things and their Habitat 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 different sources of food.</p> <p>Animals Notice that animals have offspring which grow into adults. Find out about and describe the basic needs of animals for survival.</p> <p>Animals Including Humans Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</p> <p>Plants 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 (and how changing these affects the plant).</p> <p>Materials Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, water, 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 (applying a force).</p> | <p>Survival, Water, Air, Food, Adult, Baby, Offspring, Kitten, Calf, Puppy, Exercise, Hygiene Seeds, Bulbs, Water, Light, Temperature, Growth Living, Dead, Habitat, Energy, Food chain, Predator, Prey, Woodland, Pond, Desert Hard, Soft, Stretchy, Stiff, Shiny, Dull, Rough, Smooth, Bendy, Waterproof, Absorbent, Opaque, Transparent Brick, Paper, Fabrics, Squashing, Bending, Twisting, Stretching Elastic, Foil</p> | | |
| | | | | Assessment Questions |
| | | | | See Knowledge Organisers |



St Joseph's Catholic Voluntary Academy, Leicester

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| <p>Compare and group together a variety of everyday materials on the basis of their simple physical properties.</p> <p>Seasonal Changes Observe and describe changes across the four seasons. Observe and describe weather associated with the seasons and how day length and temperature varies.</p> | | | | | |
| | Sequence of Learning : The Place Where I Live | Sequence of Learning : Fighting Fit | Sequence of Learning: Explorers | Sequence of Learning: Farm Shop | Sequence of Learning: The Wind in the Willows |
| 1 | Nature and field journals - observations of plants and animals in their local environment throughout the year. | To know that humans have offspring that grow into adults. | To know that Some materials can be found naturally; others have to be made. | To look closely at plants and trees and record what I see. | To explore and compare the differences between things that are living, dead, and things that have never been alive. |
| 2 | Nature and field journals - observations of plants and animals in their local environment throughout the year. | To know that animals, including humans, have offspring that grow into adults. | To identify the uses of everyday materials. | To compare whether all seeds are the same | To 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. |
| 3 | Nature and field journals - observations of plants and animals in their local environment throughout the year. | To compare the stages of the human life cycle. | To group the uses of everyday materials and record observations. | To set up a test and make a prediction. | To identify and name a variety of plants and animals in their habitats, including micro-habitats. |
| 4 | Nature and field journals - observations of plants and animals in their local environment throughout the year. | To find out about and describe the basic needs of humans, for survival (water, food and air). | To compare the suitability of different everyday materials. | To explain that plants are living things. | To know that different kinds of plants and animals live in different kinds of places. |



St Joseph's Catholic Voluntary Academy, Leicester

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| 5 | Nature and field journals - observations of plants and animals in their local environment throughout the year. | To describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. | To explain how the shapes of objects made from some materials can be changed. | To use observations to explain what plants need. | To 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 | Nature and field journals - observations of plants and animals in their local environment throughout the year. | To know that medicines can be useful when we are ill. | To investigate the most suitable materials for a purpose. | To describe how and what plants need to grow and stay healthy. | To know that habitats provide the preferred conditions for the animals/plants that live there. |
| 7 | | To know that medicines can be harmful if not used properly. | To learn about the inventor John McAdam. | To describe the importance for humans of eating the right amounts of different types of food. | To observe living things in their habitats during different seasonal changes. |
| 8 | | To know where different fruits and vegetables come from and how they are produced. | | | To understand there are different kinds of habitat near school which need to be cared for. |
| 9 | | To discuss what is meant by a balanced meal and food types. | | | |

St Joseph's Catholic Voluntary Academy, Leicester



| Year | Year 3 | Subject | Science | Academic Year 2024/25 |
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| Prior Knowledge | | End Point | | Key Vocabulary |
| <p>Living things and their Habitat 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 different sources of food.</p> <p>Animals Notice that animals have offspring which grow into adults. Find out about and describe the basic needs of animals for survival.</p> <p>Animals Including Humans Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</p> <p>Plants 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 (and how changing these affects the plant).</p> <p>Materials Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, water, rock, paper and cardboard for particular uses.</p> | <p>Plants Identify, locate 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.</p> <p>Animals Including Humans An adequate and varied diet is beneficial to health (along with a good supply of air and clean water). Regular and varied exercise from a variety of different activities is beneficial to health Identify that humans and some other animals have skeletons and muscles for support, protection and movement. Identify animals (vertebrates) which have a skeleton which supports their body, aids movement & protects vital organs (e.g. name and locate skull, backbone, ribs, bones for movement/limbs, pelvis and be able to name some of the vital organs protected).</p> <p>Rocks and Soils 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.</p> | <p>Movement, Muscles, Bones, Skull, Nutrition, Skeletons Air, Light, Water, Nutrients, Soil, Reproduction, Transportation, Dispersal, Pollination, Flower Fossils, Soils, Sandstone, Granite, Marble, Pumice, Crystals, Absorbent Light, Shadows, Mirror, Reflective, Dark, Reflection Magnetic, Force, Contact, Attract, Repel, Friction, Poles, Push, Pull</p> | <p>Assessment Questions</p> <p>See Knowledge Organisers</p> | |

St Joseph's Catholic Voluntary Academy, Leicester



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| <p>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching (applying a force).</p> | <p>Recognise that soils are made from rocks and organic matter</p> <p>Light Notice that light is reflected from surfaces. Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. Recognise that shadows are formed when the light from a light source is blocked by a solid object. Find patterns in the way that the size of shadows can change.</p> <p>Forces and Magnets 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 (like and unlike poles). Predict whether two magnets will attract or repel each other, depending on which poles are facing.</p> | | | | |
| | <p>Sequence of Learning : <i>There's No place Like Home Light and Shadows</i></p> | <p>Sequence of Learning : Healthy Humans <i>Animals including Humans.</i></p> | <p>Sequence of Learning: Rock and Roll <i>Rocks</i></p> | <p>Sequence of Learning : The Iron Man <i>Forces and Magnets</i></p> | <p>Sequence of Learning : What the Romans did for Us <i>Plants</i></p> |
| <p>1</p> | <p>LO: To recognise that we need light in order to see things and that dark is the absence of light.</p> | <p>LO: To sort foods into food groups and find out about the nutrients that different foods provide.</p> | <p>LO: To compare different kinds of rocks based on their appearance</p> | <p>LO: To identify the forces acting on objects.</p> | <p>LO: To name the different parts of flowering plants and explain their jobs.</p> |



St Joseph's Catholic Voluntary Academy, Leicester

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| 2 | LO: To notice that light is reflected from surfaces. 2 Sessions | LO: To explore the nutritional values of different foods by gathering information from food labels. | LO: To make systematic and careful observations and group rocks based on their properties. | LO: To investigate how a toy car moves over different surfaces. | LO: To set up an investigation to find out what plants need to grow well. |
| 3 | LO: To notice that light is reflected from surfaces. 2 Sessions | LO: To sort animal skeletons into groups, discussing patterns and similarities and differences. | LO: To explain how fossils are formed. | LO: To sort magnetic and non-magnetic materials. | LO: To record observations and present the results of an investigation using scientific language. |
| 4 | LO: To recognise that light from the sun can be dangerous and that there are ways to protect our eyes. | LO: To investigate an idea about how the human skeleton supports movement. | LO: To explain Mary Anning's contribution to palaeontology. | LO: To investigate the strength of magnets. | LO: To investigate how water is transported in plants. |
| 5 | LO: To recognise that shadows are formed when the light from a light source is blocked by a solid object. | LO: To explain how bones and muscles work together to create movement | LO: To explain how soil is formed | LO: To explore magnetic poles. | LO: To name the different parts of a flower and explain their role in pollination and fertilisation. |
| 6 | LO: To find patterns in the way that the size of shadows change | LO: To design and carry out my own investigation- Does the length of femur effect the distance someone can jump? | LO: T observe carefully and systematically and present findings using scientific vocabulary. | LO: To observe how magnets attract some materials. | LO: To understand and order the stages of the life cycle of a flowering plant. |

St Joseph's Catholic Voluntary Academy, Leicester



| Year | Year 4 | Subject | Science | Academic Year 2024/25 |
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| | | Prior Knowledge | End Point | Vocabulary |
| | | <p>Living things and their Habitat 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 different sources of food.</p> <p>Animals Notice that animals have offspring which grow into adults. Find out about and describe the basic needs of animals for survival.</p> | <p>Living Things and their 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. Recognise that environments can change and that this can sometimes pose dangers to living things.</p> <p>Animals Including Humans 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</p> <p>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.</p> <p>Sound 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 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. Find patterns between the pitch of a sound and features of the object that produced it.</p> | <p>Mouth, Tongue, Teeth, Oesophagus, Stomach, Small Intestine, Large Intestine, Herbivore, Carnivore, Canine, Incisor, Molar Vertebrates, Fish, Amphibians, Reptiles, Birds, Mammals, Invertebrates, Snails, Slugs, Worms, Spiders, Insects, Environment, Habitats Solid, Liquid, Gas, Evaporation, Condensation, Particles, Temperature, Freezing, Heating Volume, Vibration, Wave, Pitch, Tone, Speaker Cells, Wires, Bulbs, Switches, Buzzers, Battery, Circuit, Series, Conductors, Insulators</p> <p>Assessment Questions See Knowledge Organisers</p> |



St Joseph's Catholic Voluntary Academy, Leicester

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| <p>Animals Including Humans Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</p> <p>Plants 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 (and how changing these affects the plant).</p> <p>Materials Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, water, 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 (applying a force).</p> | <p>Recognise that vibrations from sounds travel through a medium to the ear.</p> <p>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.</p> | | | | |
| | Sequence of Learning: Sparks Might Fly | Sequence of Learning: The Great Plague | Sequence of Learning: Hunted | Sequence of Learning: Water, Water Everywhere | Sequence of Learning: Passport to Europe |
| | Electricity | Animals including Humans | Living things and their Habitats | States of Matter | Sound |
| 1 | To know electricity can be dangerous and about conductors and insulators. | To recognise and name the parts of the digestive system. | To group living things | To sort and describe materials - solid, liquid, gas | To describe and explain sound sources. |



St Joseph's Catholic Voluntary Academy, Leicester

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| 2 | To identify common electrical appliances | To describe the functions of the parts of the digestive system | To classify vertebrates | To investigate gasses and describe their properties | To explain how sound travels. |
| 3 | To understand how batteries work in a circuit | To recognise the types and functions of teeth. | To use evidence to identify an invertebrate | To investigate materials as they change state | To explore ways to change the pitch of a sound. |
| 4 | To name the parts and construct a series circuit | To carry out an enquiry on 'tooth decay'. Part 1. | To create a classification key | To explore how water changes state | To identify how sound changes over distance. |
| 5 | LO: To understand electrical conductors and insulators. | To carry out an enquiry on 'tooth decay'. Part 2. | To complete a local habitat survey | To investigate how water evaporates | To investigate ways to absorb sound |
| 6 | To understand more about different sources of electricity | To understand food chains. | Sound | To identify and describe the different stages in the water cycle. | To make a musical instrument to play different sounds. |

St Joseph's Catholic Voluntary Academy, Leicester



| Year | Year 5 | Subject | Science | Academic Year 2024/25 |
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| Prior Knowledge | End Point | Key Vocabulary | | |
| <p>Year 4</p> <p>Living Things and their 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. Recognise that environments can change and that this can sometimes pose dangers to living things.</p> <p>Animals Including Humans 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</p> <p>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.</p> <p>Sound</p> | <p>Year 5</p> <p>Living Things and their Habitats 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. Name, locate and describe the functions of the main parts of reproductive system of plants</p> <p>Material Properties 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. Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic (advantages and disadvantages).</p> <p>Animals Including Humans Describe the changes as humans develop to old age.</p> <p>Forces 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 (causing things to slow down) Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. There are different types of forces (push, pull, friction, air resistance, water resistance, magnetic forces, gravity) which have different effects on objects Gravity can act without direct contact between the Earth and an object.</p> <p>Earth and Space Describe the movement of the Earth, and other planets, relative to the Sun and each other in the solar system. Describe the movement of the Moon relative to the Earth. Describe Sun/Earth/Moon as approximately spherical bodies. Use the idea of the Earth's rotation to explain day and night. Use the Earth's movement in space to explain the apparent movement of the sun across the sky.</p> | <p>Year 5</p> <p>Foetus, Embryo, Womb, Gestation, Baby, Toddler, Teenager, Elderly, Growth, Development, Puberty Mammal, Reproduction, Insect, Amphibian, Bird, Offspring Hardness, Solubility, Transparency, Conductivity, Magnetic, Filter, Evaporation, Dissolving, Mixing Earth, Sun, Moon, Axis, Rotation, Day, Night, Phases of the Moon, star, constellation Air resistance, Water resistance, Friction, Gravity, Newton, Gears, Pulleys</p> | | |

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| <p>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 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. Find patterns between the pitch of a sound and features of the object that produced it. Recognise that vibrations from sounds travel through a medium to the ear.</p> <p>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.</p> | <p>Materials 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 Recognise that dissolving is a reversible change and recognise everyday situations where dissolving occurs.</p> | | | |
| <p>Sequence of Learning: Faster, Higher, Stronger Animals Including Humans</p> | <p>Sequence of Learning : Food Glorious Food</p> | <p>Sequence of Learning: Earthlings Space</p> | <p>Sequence of Learning : Inventors and Inventions Forces</p> | <p>Sequence of Learning : A kingdom United</p> |

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| | | Materials: Reversible and Irreversible changes | | | Living Things and their Habitats |
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| 1 | How do humans change throughout their life? | Compare and group materials together, according to their properties. Compare and group materials together, according to whether they are solids, liquids or gases. | What are the names of the planets in the solar system? | To explain that unsupported objects fall towards the earth because of the force of gravity. | To understand how living things can be grouped into micro-organisms, plants and animals. |
| 2 | How do we develop in the womb? | 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 ($^{\circ}\text{C}$). | How do we know the earth is a sphere? | To identify the effects of air resistance, water resistance and friction, that act on moving surfaces. | To give reasons for classifying plants and animals based on specific characteristics. |
| 3 | How do we change through puberty? | Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. | How long does it take the earth, and other planets, to orbit the sun? | To recognise that some levers, pulleys and gears, allow a smaller force to have a greater effect. | To describe how living things are classified into broad groups according to their similarities and differences. |
| 4 | How do we change when we are senior? | 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. To give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic | Movement of the moon. | | |
| 5 | | To know that some materials will dissolve in liquid to form a | Why is there day and night? | | |

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| | | solution, and describe how to recover a substance from a solution | | | |
| 6 | | To use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating | Does the moon change shape? | | |
| 7 | | To demonstrate that dissolving, mixing and changes of state are reversible changes. 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. | | | |

St Joseph's Catholic Voluntary Academy, Leicester



| Year | Year 6 | Subject | Science | Academic Year 2024/25 |
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| Prior Knowledge | End Point | | | Key Vocabulary |
| <p>Living Things and their Habitats 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. Name, locate and describe the functions of the main parts of reproductive system of plants</p> <p>Material Properties 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. Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic (advantages and disadvantages).</p> <p>Animals Including Humans Describe the changes as humans develop to old age.</p> <p>Forces</p> | <p>Year 6 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.</p> <p>Evolution and Inheritance 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.</p> <p>Animals Including Humans Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.</p> | | | <p>Circulatory, Heart, Blood Vessels, Veins, Arteries, Oxygenated, Deoxygenated, Valve, Exercise, Respiration Classification, Vertebrates, Invertebrates, Micro-organisms, Amphibians, Reptiles, Mammals, Insects Fossils, Adaptation, Evolution, Characteristics, Reproduction, Genetics Refraction, Reflection, Light, Spectrum, Rainbow, Colour, Cells, Wires, Bulbs, Switches, Buzzers, Battery, Circuit, Series, Conductors, Insulators, Amps, Volts, Cell</p> <p>Assessment Questions</p> |

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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 (causing things to slow down)
Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.

There are different types of forces (push, pull, friction, air resistance, water resistance, magnetic forces, gravity) which have different effects on objects

Gravity can act without direct contact between the Earth and an object.

Earth and Space

Describe the movement of the Earth, and other planets, relative to the Sun and each other in the solar system.

Describe the movement of the Moon relative to the Earth.

Describe Sun/Earth/Moon as approximately spherical bodies.

Use the idea of the Earth's rotation to explain day and night.

Use the Earth's movement in space to explain the apparent movement of the sun across the sky.

Materials

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.

Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function (in the long term and short term).

Describe the ways in which nutrients and water are transported within animals, including humans.

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 the light that travels from light sources to our eyes or from light sources to objects and then to our eyes (and represent this in simple diagrammatic form).

Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.

Electricity

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 (at least: cells, wires, switches, bulbs, buzzers and motors) when representing a simple circuit in a diagram.



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| Demonstrate that dissolving, mixing and changes of state are reversible changes Recognise that dissolving is a reversible change and recognise everyday situations where dissolving occurs. | | | | | |
| | Sequence of Learning : Survival | Sequence of Learning : Britten's got talent | Sequence of Learning: Heroes and Villains | Sequence of Learning : Super Sleuth | Sequence of Learning : Oh I do like to be beside the seaside |
| 1 | To understand how animals have adapted to suit their environment. | To show how light travels in straight lines. | To Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. | To give reasons for classifying animals and plants based on specific characteristics. | To use and recognised symbols when representing a simple circuit in a diagram. |
| 2 | To identify how animals and plants have adapted to suit their environments. | To demonstrate how light enables us to see objects. | Recognise the impact of diet, exercise, drugs and lifestyle on the way their body's function. | To describe how plants, animals and micro-organisms are classified into board groups according to common observable characteristics and based on similarities and differences. | To investigate the effects of differing voltages in a circuit. |
| 3 | | To demonstrate and explain how light is reflected from surfaces. | Recognise the impact of diet, exercise, drugs and lifestyle on the way their body's function. | To describe how plants, animals and micro-organisms are classified into board groups according to common observable characteristics and based on similarities and differences. | To investigate the effects of differing voltages in a circuit. |
| 4 | To identify inherited characteristics and how they are passed from parents to offspring. | To use mirrors to reflect light to enable us to see objects. | Describe the ways in which nutrients and water are transported within animals, including humans. | To use primary and secondary sources to conduct research. | To compare and give reasons for variations in how components function in a circuit. |
| 5 | To identify inherited characteristics and how they are passed from parents to offspring. | To demonstrate that light travels in straight lines to show why shadows have the same shape as the object that casts them. | Describe the ways in which nutrients and water are transported within animals, including humans. | To conduct research and plan a presentation of my findings. | To use equipment and make systematic observations. |

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| 6 | To recognise that living things have changed over time and that fossils provide information about living things that inhabited the earth. | To explain refraction. | To use secondary sources to research a 'Health Hero' | To report and present findings from research. | To design a functional product using an electrical circuit. |
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