An Daras Trust
Igniting Curiosity Growing Capabilities

Princetown Primary School

Knowledge and Skills Organiser

Knowledge Organisers for the priority subject for each concept to be issued 2-3 weeks before the learning block is taught.
Metacognition: Metacognition can take many forms; it includes knowledge about when and how to use particular strategies for learning or problem-solving. *These will vary depending on the needs of each class.*

EYFS	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Knowledge	What plants are in my local area? What animals are in my local area?	What seasons do we have? How do they affect the clothes I wear? How do they affect the plants that grow?	What positive impact can I have on my environment? What local factors affect my environment?	Which foods are good for me to eat? Which ones should I not eat too much of? How can I keep myself healthy? Why is it important to wash my hands?	Can I name and identify some common plants and trees? Can I draw the plants and animals in my local area accurately?	Can I explain why some plants are weeds? Can I explain why you would find particular plants in certain areas? Which plants are food? Which trees are green all year? Why is important to look after our teeth? How much exercise should I do? How much sleep do I need?
Skills	<u>Understanding the World</u> Explore the natural world around them, making observations and drawing pictures of animals and plants;	<u>Understanding the World</u> Understand the effect of changing seasons on the natural world around them	<u>Understanding the World</u> Recognise some environments that are different to the one in which they live.	<u>PSED</u> Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.	<u>Understanding the World</u> Explore the natural world around them, making observations and drawing pictures of animals and plants;	<u>Understanding the World</u> Explore the natural world around them, making observations and drawing pictures of animals and plants;

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						<u>PSED</u> Manage their own needs <u>Physical Development</u> Know and talk about the different factors that support their overall health and wellbeing: - regular physical activity - healthy eating - toothbrushing - sensible amounts of 'screen time' - having a good sleep routine - being a safe pedestrian
Year A Owls	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Concept	Civilisation and Democracy	Culture	All Around the World	Exploration and Discoveries	Natural Wonder	Community

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NC Objectives	Biology Plants Year 1 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.	Physics Seasonal Changes observe changes across the four seasons observe and describe weather associated with the seasons and how day length varies.	Biology Animals Including Humans Year 1 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.	Biology Animals Including Humans Year 2 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.	Living Things and their Habitats Year 1 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- 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.	Materials (Year 1) 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.
Knowledge	What does deciduous mean? Which trees are evergreen? Which plants are wild?	What is a season? What are features of each season? Which months are in each season?	What are the characteristics of different animal classes? Can you sort animals based on their structure?	What are the characteristics of different animal classes? Can you sort animals based on their structure?	What is a habitat? What is Microhabitat?	What are the names of common materials? Where do we find them? What are the uses of common materials?

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	Which plants grow in our gardens?	What is the weather pattern like in each season? Can I ask questions to gather data?	What is the difference between carnivores, herbivores and omnivores?	What is the difference between carnivores, herbivores and omnivores?		
Skill Progression	WA Identify a range of local plants. Name parts of a range of familiar plants. Compare/contrast a collection of items, sorting into categories 'living', 'dead' and 'things that have never been alive'.	WA Describe seasonal changes. Relate weather patterns and day length to seasons.	WA Name a variety of common animals. Identify and group a range of familiar animals. Identify key features of a range of common animals. Relate each of the human senses to organs.	WA Name a variety of common animals. Identify and group a range of familiar animals. Identify key features of a range of common animals. Relate each of the human senses to organs.	WA Explain how, for a named animal or plant, it gets what it needs from its habitat and other living things that are there. Identify a range of living things in habitats of various sizes. Construct a simple food chain and identify what is eating what.	WA Correctly identify both object and material. Identify and name a range of materials. Describe a range of properties of a variety of materials. Classify a variety of materials into groups based on physical properties.
Meta Cognition	**Pose questions** pose questions to identify and clarify issues, and compare information in their world **Identify and clarify information and ideas** Identify and explore information and ideas from source materials	**Organise and process information** organise information based on similar or relevant ideas from several sources **Imagine possibilities and connect ideas** build on what they know to create ideas and possibilities in ways that are new to them	**Consider alternatives** identify and compare creative ideas to think broadly about a given situation or problem **Seek solutions and put ideas into action** investigate options and predict possible outcomes when putting ideas into action	**Think about thinking (metacognition)** describe the strategies used in given situations and tasks **Reflect on processes** outline the details and sequence in a whole task and separate it into workable parts	**Transfer knowledge into new contexts** use information from a previous experience to inform a new idea **Apply logic and reasoning** identify reasoning used in choices or actions in specific situations	**Draw conclusions and design a course of action** identify alternative courses of action or possible conclusions when presented with information **Evaluate procedures and outcomes** evaluate whether they have accomplished what they set out to achieve

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		develop and/or produce spoken or written texts in print or digital forms				
Year B Owls	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Concept	Civilisation and Democracy	Culture	All Around the World	Exploration and Discoveries	Natural Wonder	Community
NC Objectives	Plants (Year 2) Biology 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.	Materials (Year 2) Uses of 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 Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	Animals inc. Humans (Year 2) 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.	Animals inc. Humans (Year 2) 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.	Living Things and their Habitats 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- micro-habitats Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify	Living Things and their Habitats 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- micro-habitats Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify

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					and name different sources of food.	and name different sources of food.
Knowledge	What is a plant? How do they grow? What do they need to live?	Where do materials come from? How are they made? (natural or man-made) What are the properties of different materials? What are they used for?	What is an animal? What do living things need to stay alive? What are the differences between living things? How can we group them? What are their body parts?	What is an animal? What do living things need to stay alive? What are the differences between living things? How can we group them? What are their body parts?	What is a habitat? What is a microhabitat? How do you know if something is alive? Dead? Or never lived? What is a food chain?	What is a habitat? What is a microhabitat? How do you know if something is alive? Dead? Or never lived? What is a food chain?
Skills	Biology <u>WA</u> Explore and identify what plants need to thrive. Describe stages of development of a full-grown plant.	<u>WA</u> Describe changes achieved by applying forces in different directions. Select and justify a material for a particular use.	<u>WA</u> Identify human's basic needs. The human body has a number of systems, each with its own function Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. Describe the importance of a healthy diet and exercise.	<u>WA</u> Describe the relationship between adult animals and their offspring. Identify human's basic needs. Describe the importance of a healthy diet and exercise.	<u>WA</u> Explain how, for a named animal or plant, it gets what it needs from its habitat and other living things that are there. Identify a range of living things in habitats of various sizes. Construct a simple food chain and identify what is eating what.	<u>WA</u> Explain how, for a named animal or plant, it gets what it needs from its habitat and other living things that are there. Identify a range of living things in habitats of various sizes. Construct a simple food chain and identify what is eating what.
Metacognition	**Pose questions** pose questions to identify and clarify issues, and	**Organise and process information** organise information based on	**Consider alternatives** identify and compare creative ideas to think	**Think about thinking (metacognition)** describe the strategies used in given situations and tasks	**Transfer knowledge into new contexts** use information from a	**Draw conclusions and design a course of action** identify alternative courses of action or

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	compare information in their world **Identify and clarify information and ideas** Identify and explore information and ideas from source materials	similar or relevant ideas from several sources **Imagine possibilities and connect ideas** build on what they know to create ideas and possibilities in ways that are new to them develop and/or produce spoken or written texts in print or digital forms	broadly about a given situation or problem **Seek solutions and put ideas into action** investigate options and predict possible outcomes when putting ideas into action	**Reflect on processes** outline the details and sequence in a whole task and separate it into workable parts	previous experience to inform a new idea **Apply logic and reasoning** identify reasoning used in choices or actions in specific situations	possible conclusions when presented with information **Evaluate procedures and outcomes** evaluate whether they have accomplished what they set out to achieve
Year A Buzzards	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Concept	Civilisation and Democracy Year 3/4 – Living things (classification) Year 5/6 – Living things (classification)	Culture Year 3/4 - Animals including humans (nutrition) Year 5/6 – Animals including humans (circulation)	All Around the World Year 3/4 – States of matter Year 5/6 – Properties and changes of materials	Exploration and Discoveries Year 3/4 – Light Year 5/6 – Light	Natural Wonder Year 3/4 – Electricity Year 5/6 – Electricity	Community Year 3/4 – Electricity Year 5/6 – Electricity
NC Objectives	Y3/4 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	Y3/4 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	Y3/4 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)	Y3/4 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	Y3/4 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	Y3/4 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

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	and that this can sometimes pose dangers to living things. Y5/6 Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals Give reasons for classifying plants and animals based on specific characteristics.	muscles for support, protection and movement Y5/6 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	Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature Y5/6 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 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	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 change Y5/6 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	Recognise some common conductors and insulators, and associate metals with being good conductors 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 <u>Y5/6</u> Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in a 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	Recognise some common conductors and insulators, and associate metals with being good conductors 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 <u>Y5/6</u> Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in a 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.

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			kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda. Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic			Use recognised symbols when representing a simple circuit in a diagram
Knowledge	Why do we group things? What different categories are there to group animals/plants? What is classification?	What is nutrition? What does each type of nutrition do for the human body? What is the purpose of a skeleton? How does blood get around the body? What substances can affect our health? How does water travel through the body?	How can we group materials? What is evaporation and condensation? How does this work in the water cycle? How does temperature effect evaporation? What changes happen at different temperatures? What are physical properties of materials? What is dissolving? How can we retrieve these? What is separation? What is an irreversible change?	How do we see things? What is dark? Which surfaces reflect light? How does a mirror work? Why is the sun dangerous? How can we protect our eyes? How is shadow formed? How does light travel? How does light enable us to see? What is reflection? What is refraction? What is the visible spectrum? Who was Isaac Newton and what did he discover? What is a shadow? What is a prism?	Which appliances run on electricity? Which materials are insulators or conductors? How do number and voltage of cells affect lamps or buzzers? How are switches used in a circuit? How can I represent a circuit with symbols?	Which appliances run on electricity? Which materials are insulators or conductors? How do number and voltage of cells affect lamps or buzzers? How are switches used in a circuit? How can I represent a circuit with symbols?

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				How do we see colours?		
Skill Progression	Y3/4 Suggest different ways of sorting the same group of living things, e.g. grouping birds according to where they live, what they eat and size of adults. Use classification keys to group and identify members from a range of familiar and less familiar living things. Describe examples of living things that are threatened by changes to environments, e.g. owls and habitat loss. Y5/6 Use similarities and differences in observable features to decide how living things should be grouped, e.g. a cat is a mammal because it is warm blooded and gives birth to live young.	Y3/4 Describe why animals depend on the correct nutrition. Explain which parts of the skeleton provide support and protection, and how they allow for movement Y5/6 Describe what heart, blood vessels and blood do, e.g. carry oxygen to all parts of the body. Suggest how their bodies are affected by substances and actions, e.g. that a high fat diet coupled with little exercise is likely to lead to obesity Describe with aid of diagrams the route that water takes within animals, e.g. through the human body	Y3/4 Group materials according to their state of matter. Describe how evaporation and condensation happen in the water cycle, and how temperature affects evaporation. Identify changes of state and research values of degrees celsius at which changes happen. Y5/6 Compare and group together everyday materials on the basis of their appearance and feel. Know that some materials will dissolve in liquid to form a solution. Suggest how mixtures might be separated.	Y3/4 Relate being able to see to the presence of light. Describe how some objects reflect light Describe how and why our eyes should be protected from sunlight. Explain how shadows are made. Describe how to change the size of a shadow. Y5/6 Represent light using straight line ray diagrams. Draw diagrams using straight lines showing light travelling to the eye. Explain how we can see an object by referring to light travelling into the eye.	Y3/4 List examples of appliances that run on electricity. Construct a simple circuit and name its components Sort materials into conductors and insulators, identifying metals as conductors Predict whether a particular arrangement of components will result in a bulb lighting. Predict how the operation of a switch will affect bulbs lighting. Y5/6 Explain how number and voltage of cells affects the lamp or buzzer. Explain the use of switches, how bulbs can be made brighter and buzzers made louder.	Y3/4 List examples of appliances that run on electricity. Construct a simple circuit and name its components Sort materials into conductors and insulators, identifying metals as conductors Predict whether a particular arrangement of components will result in a bulb lighting. Predict how the operation of a switch will affect bulbs lighting. Y5/6 Explain how number and voltage of cells affects the lamp or buzzer. Explain the use of switches, how bulbs can be made brighter and buzzers made louder.

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	Explain why certain features are useful in classifying living things, e.g. backbones in animals and flowers in plants		Understand that some processes are reversible. Understand that burning is irreversible. Give reasons for the particular uses of everyday materials, including metals, wood and plastic.	Draw a diagram showing an object, shadow and light to relate object shape to shadow shape.	Represent a circuit that has been constructed using symbols.	Represent a circuit that has been constructed using symbols.
Meta Cognition	**LKS2** **Pose questions** pose questions to expand their knowledge about the world **Identify and clarify information and ideas** identify main ideas and select and clarify information from a range of sources **UKS2** **Pose questions** pose questions to clarify and	**LKS2** **Organise and process information** collect, compare, and categorise facts and opinions found in a wide range of sources **Imagine possibilities and connect ideas** expand on known ideas to create new and imaginative combinations **UKS2** **Organise and process information** analyse,	**LKS2** **Consider alternatives** explore situations using creative thinking strategies to propose a range of alternatives **Seek solutions and put ideas into action** experiment with a range of options when seeking solutions and putting ideas into action **UKS2** **Consider alternatives** identify situations where current approaches do not	LKS2 **Think about thinking (metacognition)** reflect on, explain and check the processes used to come to conclusions **Reflect on processes** identify pertinent information in an investigation and separate into smaller parts or ideas UKS2 **Think about thinking (metacognition)** reflect on assumptions made, consider reasonable	LKS2 **Transfer knowledge into new contexts** transfer and apply information in one setting to enrich another **Apply logic and reasoning** identify and apply appropriate reasoning and thinking strategies for outcomes UKS2 **Transfer knowledge into new contexts** apply knowledge gained from one context to another	LKS2 **Draw conclusions and design a course of action** draw on prior knowledge and use evidence when choosing a course of action or drawing a conclusion **Evaluate procedures and outcomes** explain and justify ideas and outcomes UKS2 **Draw conclusions and design a course of action**

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	interpret information and probe further to discover causes and consequences **Identify and clarify information and ideas** identify and clarify relevant information and prioritise ideas	condense, and combine relevant information from multiple sources **Imagine possibilities and connect ideas** combine ideas in a variety of ways and from a range of sources to create new possibilities	work, challenge existing ideas, and generate alternative solutions **Seek solutions and put ideas into action** assess and test options to identify the most effective solution and put ideas into action	criticism, and adjust their thinking if necessary **Reflect on processes** identify and justify the thinking behind choices they have made	unrelated context and identify new meaning **Apply logic and reasoning** assess whether there is adequate reasoning and evidence to justify a claim, conclusion, or outcome	scrutinise ideas or concepts, test conclusions and modify actions when designing a course of action **Evaluate procedures and outcomes** evaluate the effectiveness of ideas, products, performances, methods, and courses of action against given criteria
Year B Buzzards	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Concept	Civilisation and Democracy Year 3/4 – Plants Year 5/6 – Living things (Life cycles)	Culture Year 3/4 – Animals including humans (digestion)Year 5/6 – Animals including humans (human changes)	Al l Around the World Year 3/4 – Rocks Year 5/6 – Evolution and Inheritance	Exploration and Discoveries Year 3/4 – Sound Year 5/6 – Earth and Space	Natural Wonder Year 3/4 – Forces and Magnets Year 5/6 – Forces	Community Year 3/4 – Forces and Magnets Year 5/6 – Forces

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NC Objectives	Y3/4 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 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 Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal allow a smaller force to have a greater effect. Y5/6 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.	Y3/4 Animals and 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 Y5/6	Y3/4 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 Y5/6 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.	Y3/4 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. Y5/6 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	Y3/4 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 Y5/6 Explain that unsupported objects fall towards the Earth because of the force of gravity acting between	Y3/4 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 Y5/6 Explain that unsupported objects fall towards the Earth because of the force of gravity acting

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				Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky 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	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.	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.
Knowledge	What is a living thing? What do plants need to grow successfully? What do the different parts of a plant do? What is pollination? What is seed dispersal? How do plants reproduce? What do different life cycles look like in different types of animals?	What is the digestive system? Which organs do which jobs? What are our teeth for? What is a food chain? What is a predator? How do humans change? What is reproduction?	What are fossils? How are they formed? How is soil made? What different types of rocks are there? What are fossils? What do they tell us? What is offspring? What is variation?	How are sounds made? How does sound travel? How does the ear detect sound? Why are some sounds louder than others? What is pitch? What is gravity? How does the moon orbit Earth? How does Earth orbit the sun?	How do objects move on different surfaces? How do magnets attract and repel? Which materials are magnetic? What are the poles of a magnet? What is gravity? What is air resistance?	What is nutrition? What does each type of nutrition do for the human body? What is the purpose of a skeleton?

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			What is evolution? What is adaptation?	What is a sphere? What causes day and night?		
Skill Progression	Y3/4 Explain what all plants need to flourish and recognise how these requirements vary in amount. Describe what each part of a flowering plant does. Explain, with the aid of a diagram or plant, how water is carried up from the soil Explain how pollination, seed formation and seed dispersal play a role in the reproduction of flowering plants. Y5/6 Identify similarities and differences in two different life cycles, e.g. sparrow and butterfly, with reference to eggs and intermediate stages.	Y3/4 Identify what each of the principal organs in the digestive system do Describe the function of each type of tooth in the human skull Use a food chain to represent predator-prey relationships. Y5/6 Describe the changes as humans develop to old age, e.g. trends in changes to size, weight, mobility etc.	Y3/4 Understand that fossils indicate the shape of previous life forms. Describe the appearance of soil, recognising that it is a mixture of materials. Identify that rocks vary in terms of appearance and physical properties. Y5/6 Recognise that fossils provide information about living things from millions of years ago, e.g. understand that they are preserved remains of extinct living things. Recognise that living things produce offspring of the same kind, but normally offspring vary, e.g. that puppies have common features but are not identical.	Y3/4 Explain, with reference to vibrations, how an object makes a sound. Describe the role of a medium in the transmission of sound. Describe the effect of moving further from the source of a sound. Explain with reference to a particular object how the pitch of the sound can be changed. Explain with reference to a particular object how the volume of the sound can be changed. Y5/6 Explain that gravity causes objects to fall towards Earth.	Y3/4 Compare how an object, such as a toy car, will move on different surfaces. Recognise the difference between contact and contact forces. Describe how magnets attract or repel each other and attract magnetic materials. Group materials on the basis of testing for being magnetic. Describe and identify the poles of a magnet. Predict outcomes of a particular arrangement of magnets Y5/6	Y3/4 Compare how an object, such as a toy car, will move on different surfaces. Recognise the difference between contact and contact forces. Describe how magnets attract or repel each other and attract magnetic materials. Group materials on the basis of testing for being magnetic. Describe and identify the poles of a magnet. Predict outcomes of a particular arrangement of magnets Y5/6

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	Describe in sequence the stages of reproduction in some plants and animals, e.g. dog and a thistle		Identify ways in which certain animals and plants are adapted to suit their environment in different ways.	Describe how motion may be resisted by air resistance, water resistance or friction. Describe how some devices may turn a smaller force into a larger one Draw a diagram or use a model to describe planetary orbits. Draw a diagram or use a model to describe the Moon's orbit around the Earth. Describe the Sun, Earth & Moon as spheres. Use a diagram or model to explain why the Sun seems to travel across the sky, and what causes day and night.	Explain that gravity causes objects to fall towards Earth. Describe how motion may be resisted by air resistance, water resistance or friction. Describe how some devices may turn a smaller force into a larger one.	Explain that gravity causes objects to fall towards Earth. Describe how motion may be resisted by air resistance, water resistance or friction. Describe how some devices may turn a smaller force into a larger one.
Meta Cognition	**LKS2**	**LKS2**	**LKS2**	LKS2	LKS2	LKS2

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	Pose questions pose questions to expand their knowledge about the world **Identify and clarify information and ideas** identify main ideas and select and clarify information from a range of sources **UKS2** **Pose questions** pose questions to clarify and interpret information and probe further to discover causes and consequences **Identify and clarify information and ideas** identify and clarify relevant information and prioritise ideas	**Organise and process information** collect, compare, and categorise facts and opinions found in a wide range of sources **Imagine possibilities and connect ideas** expand on known ideas to create new and imaginative combinations **UKS2** **Organise and process information** analyse, condense, and combine relevant information from multiple sources **Imagine possibilities and connect ideas** combine ideas in a variety of ways and from a range of sources to create new possibilities	**Consider alternatives** explore situations using creative thinking strategies to propose a range of alternatives **Seek solutions and put ideas into action** experiment with a range of options when seeking solutions and putting ideas into action **UKS2** **Consider alternatives** identify situations where current approaches do not work, challenge existing ideas, and generate alternative solutions **Seek solutions and put ideas into action** assess and test options to identify the most effective solution and put ideas into action	**Think about thinking (metacognition)** reflect on, explain and check the processes used to come to conclusions **Reflect on processes** identify pertinent information in an investigation and separate into smaller parts or ideas UKS2 **Think about thinking (metacognition)** reflect on assumptions made, consider reasonable criticism, and adjust their thinking if necessary **Reflect on processes** identify and justify the thinking behind choices they have made	**Transfer knowledge into new contexts** transfer and apply information in one setting to enrich another **Apply logic and reasoning** identify and apply appropriate reasoning and thinking strategies for outcomes UKS2 **Transfer knowledge into new contexts** apply knowledge gained from one context to another unrelated context and identify new meaning **Apply logic and reasoning** assess whether there is adequate reasoning and evidence to justify a claim, conclusion, or outcome	**Draw conclusions and design a course of action** draw on prior knowledge and use evidence when choosing a course of action or drawing a conclusion **Evaluate procedures and outcomes** explain and justify ideas and outcomes UKS2 **Draw conclusions and design a course of action** scrutinise ideas or concepts, test conclusions and modify actions when designing a course of action **Evaluate procedures and outcomes** evaluate the effectiveness of ideas, products, performances, methods, and courses of action against given criteria

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Year C Buzzards	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Concept	Civilisation and Democracy Year 3/4 – Living things (classification) Year 5/6 – Living things (classification)	Culture Year 3/4 - Animals including humans (nutrition) Year 5/6 – Animals including humans (circulation)	All Around the World Year 3/4 – States of matter Year 5/6 – Properties and changes of materials	Exploration and Discoveries Year 3/4 – Light Year 5/6 – Light	Natural Wonder Year 3/4 – Electricity Year 5/6 – Electricity	Community Year 3/4 – Electricity Year 5/6 – Electricity
NC Objectives	Y3/4 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. Y5/6 Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including	Y3/4 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 Y5/6 Identify and name the main parts of the human circulatory system, and describe the functions of the	Y3/4 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 Y5/6 Compare and group together everyday materials on the basis of their	Y3/4 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 a solid object Find patterns in the way that the size of shadows change Y5/6 Recognise that light appears to travel in straight lines	Y3/4 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 Recognise some common conductors and insulators, and associate metals with being good conductors 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	Y3/4 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 Recognise some common conductors and insulators, and associate metals with being good conductors 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

	microorganisms, plants and animals Give reasons for classifying plants and animals based on specific characteristics.	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	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 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. Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic	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	whether or not a lamp lights in a simple series circuit <u>Y5/6</u> Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in a 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	and associate this with whether or not a lamp lights in a simple series circuit <u>Y5/6</u> Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in a 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

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Knowledge	Why do we group things? What different categories are there to group animals/plants? What is classification?	What is nutrition? What does each type of nutrition do for the human body? What is the purpose of a skeleton? How does blood get around the body? What substances can affect our health? How does water travel through the body?	How can we group materials? What is evaporation and condensation? How does this work in the water cycle? How does temperature effect evaporation? What changes happen at different temperatures? What are physical properties of materials? What is dissolving? How can we retrieve these? What is separation? What is an irreversible change?	How do we see things? What is dark? Which surfaces reflect light? How does a mirror work? Why is the sun dangerous? How can we protect our eyes? How is shadow formed? How does light travel? How does light enable us to see? What is reflection? What is refraction? What is the visible spectrum? Who was Isaac Newton and what did he discover? What is a shadow? What is a prism? How do we see colours?	Which appliances run on electricity? Which materials are insulators or conductors? How do number and voltage of cells affect lamps or buzzers? How are switches used in a circuit? How can I represent a circuit with symbols?	Which appliances run on electricity? Which materials are insulators or conductors? How do number and voltage of cells affect lamps or buzzers? How are switches used in a circuit? How can I represent a circuit with symbols?
Skill Progression	Y3/4 Suggest different ways of sorting the same group of living things, e.g. grouping birds according to where they live, what they eat and size of adults. Use classification keys to group and identify	Y3/4 Describe why animals depend on the correct nutrition. Explain which parts of the skeleton provide support and protection, and how they allow for movement	Y3/4 Group materials according to their state of matter. Describe how evaporation and condensation happen in the water cycle, and how temperature affects evaporation.	Y3/4 Relate being able to see to the presence of light. Describe how some objects reflect light Describe how and why our eyes should be protected from sunlight.	Y3/4 List examples of appliances that run on electricity. Construct a simple circuit and name its components Sort materials into conductors and insulators,	Y3/4 List examples of appliances that run on electricity. Construct a simple circuit and name its components Sort materials into conductors and

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	members from a range of familiar and less familiar living things. Describe examples of living things that are threatened by changes to environments, e.g. owls and habitat loss. Y5/6 Use similarities and differences in observable features to decide how living things should be grouped, e.g. a cat is a mammal because it is warm blooded and gives birth to live young. Explain why certain features are useful in classifying living things, e.g. backbones in animals and flowers in plants	Y5/6 Describe what heart, blood vessels and blood do, e.g. carry oxygen to all parts of the body. Suggest how their bodies are affected by substances and actions, e.g. that a high fat diet coupled with little exercise is likely to lead to obesity Describe with aid of diagrams the route that water takes within animals, e.g. through the human body	Identify changes of state and research values of degrees celsius at which changes happen. Y5/6 Compare and group together everyday materials on the basis of their appearance and feel. Know that some materials will dissolve in liquid to form a solution. Suggest how mixtures might be separated. Understand that some processes are reversible. Understand that burning is irreversible. Give reasons for the particular uses of everyday materials, including metals, wood and plastic.	Explain how shadows are made. Describe how to change the size of a shadow. Y5/6 Represent light using straight line ray diagrams. Draw diagrams using straight lines showing light travelling to the eye. Explain how we can see an object by referring to light travelling into the eye. Draw a diagram showing an object, shadow and light to relate object shape to shadow shape.	identifying metals as conductors Predict whether a particular arrangement of components will result in a bulb lighting. Predict how the operation of a switch will affect bulbs lighting. Y5/6 Explain how number and voltage of cells affects the lamp or buzzer. Explain the use of switches, how bulbs can be made brighter and buzzers made louder. Represent a circuit that has been constructed using symbols.	insulators, identifying metals as conductors Predict whether a particular arrangement of components will result in a bulb lighting. Predict how the operation of a switch will affect bulbs lighting. Y5/6 Explain how number and voltage of cells affects the lamp or buzzer. Explain the use of switches, how bulbs can be made brighter and buzzers made louder. Represent a circuit that has been constructed using symbols.

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Meta Cognition	**LKS2** **Pose questions** pose questions to expand their knowledge about the world **Identify and clarify information and ideas** identify main ideas and select and clarify information from a range of sources **UKS2** **Pose questions** pose questions to clarify and interpret information and probe further to discover causes and consequences **Identify and clarify information and ideas** identify and clarify relevant information and prioritise ideas	**LKS2** **Organise and process information** collect, compare, and categorise facts and opinions found in a wide range of sources **Imagine possibilities and connect ideas** expand on known ideas to create new and imaginative combinations **UKS2** **Organise and process information** analyse, condense, and combine relevant information from multiple sources **Imagine possibilities and connect ideas** combine ideas in a variety of ways and from a range of sources to create new possibilities	**LKS2** **Consider alternatives** explore situations using creative thinking strategies to propose a range of alternatives **Seek solutions and put ideas into action** experiment with a range of options when seeking solutions and putting ideas into action **UKS2** **Consider alternatives** identify situations where current approaches do not work, challenge existing ideas, and generate alternative solutions **Seek solutions and put ideas into action** assess and test options to identify the most effective solution and put ideas into action	LKS2 **Think about thinking (metacognition)** reflect on, explain and check the processes used to come to conclusions **Reflect on processes** identify pertinent information in an investigation and separate into smaller parts or ideas UKS2 **Think about thinking (metacognition)** reflect on assumptions made, consider reasonable criticism, and adjust their thinking if necessary **Reflect on processes** identify and justify the thinking behind choices they have made	LKS2 **Transfer knowledge into new contexts** transfer and apply information in one setting to enrich another **Apply logic and reasoning** identify and apply appropriate reasoning and thinking strategies for outcomes UKS2 **Transfer knowledge into new contexts** apply knowledge gained from one context to another unrelated context and identify new meaning **Apply logic and reasoning** assess whether there is adequate reasoning and evidence to justify a claim, conclusion, or outcome	LKS2 **Draw conclusions and design a course of action** draw on prior knowledge and use evidence when choosing a course of action or drawing a conclusion **Evaluate procedures and outcomes** explain and justify ideas and outcomes UKS2 **Draw conclusions and design a course of action** scrutinise ideas or concepts, test conclusions and modify actions when designing a course of action **Evaluate procedures and outcomes** evaluate the effectiveness of ideas, products, performances, methods, and courses of

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						action against given criteria
Year D Buzzards	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Concept	Civilisation and Democracy Year 3/4 - Plants Year 5/6 – Living things (Life cycles)	Culture Year 3/4 – Animals including humans (digestion) Year 5/6 – Animals including humans (human changes)	All Around the World Year 3/4 - Rocks Year 5/6 – Evolution and Inheritance	Exploration and Discoveries STEM/Being Scientific Year 3/4 - Sound Year 5/6 – Earth and Space	Natural Wonder Year 3/4 – Forces and Magnets Year 5/6 – Forces	Community Year 3/4 – Forces and Magnets Year 5/6 – Forces
NC Objectives	Y3/4 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 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 Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed	Y3/4 Animals and 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	Y3/4 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 Y5/6 Evolution and Inheritance Recognise that living things have changed over time and that fossils provide	Y3/4 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.	Y3/4 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	Y3/4 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

	formation and seed dispersal allow a smaller force to have a greater effect. Y5/6 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.		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.	Y5/6 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 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	Describe magnets as having two poles Predict whether two magnets will attract or repel each other, depending on which poles are facing <u>Y5/6</u> 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.	Describe magnets as having two poles Predict whether two magnets will attract or repel each other, depending on which poles are facing <u>Y5/6</u> 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.

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Knowledge	What is a living thing? What do plants need to grow successfully? What do the different parts of a plant do? What is pollination? What is seed dispersal? How do plants reproduce? What do different life cycles look like in different types of animals?	What is the digestive system? Which organs do which jobs? What are our teeth for? What is a food chain? What is a predator? How do humans change? What is reproduction?	What are fossils? How are they formed? How is soil made? What different types of rocks are there? What are fossils? What do they tell us? What is offspring? What is variation? What is evolution? What is adaptation?	How are sounds made? How does sound travel? How does the ear detect sound? Why are some sounds louder than others? What is pitch? What is gravity? How does the moon orbit Earth? How does Earth orbit the sun? What is a sphere? What causes day and night?	How do objects move on different surfaces? How do magnets attract and repel? Which materials are magnetic? What are the poles of a magnet? What is gravity? What is air resistance?	How do objects move on different surfaces? How do magnets attract and repel? Which materials are magnetic? What are the poles of a magnet? What is gravity? What is air resistance?
Skill Progression	Y3/4 Explain what all plants need to flourish and recognise how these requirements vary in amount. Describe what each part of a flowering plant does. Explain, with the aid of a diagram or plant, how water is carried up from the soil Explain how pollination, seed formation and seed	Y3/4 Identify what each of the principal organs in the digestive system do Describe the function of each type of tooth in the human skull Use a food chain to represent predator-prey relationships. Y5/6 Describe the changes as	Y3/4 Understand that fossils indicate the shape of previous life forms. Describe the appearance of soil, recognising that it is a mixture of materials. Identify that rocks vary in terms of appearance and physical properties. Y5/6	Y3/4 Explain, with reference to vibrations, how an object makes a sound. Describe the role of a medium in the transmission of sound. Describe the effect of moving further from the source of a sound. Explain with reference to a particular object how the pitch of the sound can be changed.	Y3/4 Compare how an object, such as a toy car, will move on different surfaces. Recognise the difference between contact and contact forces. Describe how magnets attract or repel each other and attract magnetic materials.	Y3/4 Compare how an object, such as a toy car, will move on different surfaces. Recognise the difference between contact and contact forces. Describe how magnets attract or repel each other and attract magnetic materials.

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	dispersal play a role in the reproduction of flowering plants. Y5/6 Identify similarities and differences in two different life cycles, e.g. sparrow and butterfly, with reference to eggs and intermediate stages. Describe in sequence the stages of reproduction in some plants and animals, e.g. dog and a thistle	humans develop to old age, e.g. trends in changes to size, weight, mobility etc.	Recognise that fossils provide information about living things from millions of years ago, e.g. understand that they are preserved remains of extinct living things. Recognise that living things produce offspring of the same kind, but normally offspring vary, e.g. that puppies have common features but are not identical. Identify ways in which certain animals and plants are adapted to suit their environment in different ways.	Explain with reference to a particular object how the volume of the sound can be changed. Y5/6 Explain that gravity causes objects to fall towards Earth. Describe how motion may be resisted by air resistance, water resistance or friction. Describe how some devices may turn a smaller force into a larger one Draw a diagram or use a model to describe planetary orbits. Draw a diagram or use a model to describe the Moon's orbit around the Earth. Describe the Sun, Earth & Moon as spheres.	Group materials on the basis of testing for being magnetic. Describe and identify the poles of a magnet. Predict outcomes of a particular arrangement of magnets Y5/6 Explain that gravity causes objects to fall towards Earth. Describe how motion may be resisted by air resistance, water resistance or friction. Describe how some devices may turn a smaller force into a larger one.	Group materials on the basis of testing for being magnetic. Describe and identify the poles of a magnet. Predict outcomes of a particular arrangement of magnets Y5/6 Explain that gravity causes objects to fall towards Earth. Describe how motion may be resisted by air resistance, water resistance or friction. Describe how some devices may turn a smaller force into a larger one.

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				Use a diagram or model to explain why the Sun seems to travel across the sky, and what causes day and night.		
Meta Cognition	**LKS2** **Pose questions** pose questions to expand their knowledge about the world **Identify and clarify information and ideas** identify main ideas and select and clarify information from a range of sources **UKS2** **Pose questions** pose questions to clarify and interpret information and probe further to discover causes and consequences	**LKS2** **Organise and process information** collect, compare, and categorise facts and opinions found in a wide range of sources **Imagine possibilities and connect ideas** expand on known ideas to create new and imaginative combinations **UKS2** **Organise and process information** analyse, condense, and combine relevant information from multiple sources	**LKS2** **Consider alternatives** explore situations using creative thinking strategies to propose a range of alternatives **Seek solutions and put ideas into action** experiment with a range of options when seeking solutions and putting ideas into action **UKS2** **Consider alternatives** identify situations where current approaches do not work, challenge existing ideas, and generate alternative solutions	LKS2 **Think about thinking (metacognition)** reflect on, explain and check the processes used to come to conclusions **Reflect on processes** identify pertinent information in an investigation and separate into smaller parts or ideas UKS2 **Think about thinking (metacognition)** reflect on assumptions made, consider reasonable criticism, and adjust their thinking if necessary	LKS2 **Transfer knowledge into new contexts** transfer and apply information in one setting to enrich another **Apply logic and reasoning** identify and apply appropriate reasoning and thinking strategies for outcomes UKS2 **Transfer knowledge into new contexts** apply knowledge gained from one context to another unrelated context and identify new meaning **Apply logic and reasoning** assess whether there is	LKS2 **Draw conclusions and design a course of action** draw on prior knowledge and use evidence when choosing a course of action or drawing a conclusion **Evaluate procedures and outcomes** explain and justify ideas and outcomes UKS2 **Draw conclusions and design a course of action** scrutinise ideas or concepts, test conclusions and modify actions when

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	Identify and clarify information and ideas identify and clarify relevant information and prioritise ideas	**Imagine possibilities and connect ideas** combine ideas in a variety of ways and from a range of sources to create new possibilities	**Seek solutions and put ideas into action** assess and test options to identify the most effective solution and put ideas into action	**Reflect on processes** identify and justify the thinking behind choices they have made	adequate reasoning and evidence to justify a claim, conclusion, or outcome	designing a course of action **Evaluate procedures and outcomes** evaluate the effectiveness of ideas, products, performances, methods, and courses of action against given criteria