



Science Overview

Chadsmead Primary Academy – Science Curriculum Overview

		Autumn 1	Spring 1	Summer 1
EYFS	Cycle A (2022/23)	Stories and Rhymes / Let's Explore it!	Puppets and Pop Ups / Long Ago	Creep, Crawl and Wiggle / Animal Safari
		<u>Stories and Rhymes</u> Development Matters: <ul style="list-style-type: none"> UTW (Materials) We will talk about the differences between materials and changes they notice. We will investigate materials that could protect Humpty Dumpty.	<u>Puppets and Pop Ups</u> Development Matters: <ul style="list-style-type: none"> UTW (Explore the Natural World) We will explore how we block the light to form shadows. We will explore how the shape of the shadow is the same as the object.	<u>Creep, Crawl and Wiggle</u> Development Matters: <ul style="list-style-type: none"> UTW (Explore the natural world around them) We will explore and talk about different habitats. We will investigate which food different mini beasts prefer. We will group animals based on common body parts. We will observe snails and explain what we see. We will describe how living things change and grow over time.
		<u>Let's Explore It!</u> Development Matters: <ul style="list-style-type: none"> UTW (The Natural World) We will begin to observe and talk about living things in the local environment. We will learn about force (push and pull) and use magnets to investigate magnetism.	<u>Long Ago</u> Development Matters: <ul style="list-style-type: none"> UTW (Changing States) We will describe the weather and different seasons.	<u>Animal Safari</u> Development Matters: <ul style="list-style-type: none"> UTW (Explore the natural world around them) We will go on a hunt to find which animals are carnivore, omnivore or herbivore. We will group animals based on their different body parts (scales, feathers etc)
		Potential Education Visits/Visitors: Twycross or Dudley Zoo		
		Autumn 2	Spring 2	Summer 2
		Build it up! / Marvellous Machines	Signs of Spring / Ready, Steady, Grow	On the Beach
		<u>Build it up!</u> Development Matters: <ul style="list-style-type: none"> UTW (Materials) We are investigating which materials are best suited for a specific purpose. We will sort materials and make simple comparisons. We will choose different suitable materials to build a house.	<u>Signs of Spring</u> Development Matters: <ul style="list-style-type: none"> UTW (Explore the Natural World) We will explore how the local environment changes during different seasons and how the weather changes. We will learn that eggs are laid by female birds, reptiles, fish and invertebrates. We will learn how tadpoles grow and change into frogs. We will observe different flowers and ask and answer questions about them.	<u>On the Beach</u> Development Matters: <ul style="list-style-type: none"> UTW (Know some similarities and differences between the natural world) UTW (Recognise some environments are different) UTW (Explore the natural world around them) We will explore and talk about the ways the weather, plants, animals and places can be different through pictures and stories. We will observe crabs and identify different body parts. We will learn about seas and oceans and talk about the marine animals that live there. We will learn about different carnivores, herbivores and omnivores.
		<u>Marvellous Machines</u> Development Matters: <ul style="list-style-type: none"> UTW (Develop scientific knowledge) UTW (Explore how things work) We will talk about objects that have an on and off switch. We will build and talk about the simple circuits we have built. We will explore how toys work.	<u>Ready, Steady, Grow</u> Development Matters: <ul style="list-style-type: none"> UTW (Explore the Natural World) We will learn that animals are living things. We will name a variety of domestic and wild animals. We will talk about and draw plants and describe the basic features of plants and trees.	
		Potential Education Visits/Visitors: Visit to the farm		

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		Autumn 1	Spring 1	Summer 1
EYFS	Cycle B (2023/24)	Me and My Community / Exploring Autumn	Winter Wonderland / Starry Night	Sunshine and Sunflowers / Shadows and Reflections
		<u>Me and My Community Development Matters:</u> No Science Taught	<u>Winter Wonderland Development Matters:</u> <ul style="list-style-type: none"> • UTW (Understand the effect of changing seasons) • UTW (Recognise some environments that are different) We will describe the changing weather and compare with other seasons. We will explore which animals survive in polar habitats and the way they have adapted to suit their environments. We will learn about climate change.	<u>Sunshine and Sunflowers Development Matters:</u> <ul style="list-style-type: none"> • UTW (Understand the effect of changing seasons) We will describe the changing weather and compare with other seasons. We will grow plants and describe what we observe as they grow. We will sequence life cycles of plants and animals
		<u>Exploring Autumn Development Matters:</u> <ul style="list-style-type: none"> • UTW (Explore the World Around Them) We will go on a woodland walk to investigate how some plants and trees change with the seasons. We will also observe animals in the school grounds and notice their similar and different body parts. We will explore hibernation and discuss difficulties animals face during winter. We will use our senses to investigate different fruit and vegetables.	<u>Starry Night Development Matters:</u> <ul style="list-style-type: none"> • UTW (Recognise some environments that are different) • UTW (Explore the World Around Them) <u>ELG: Manage basic health care.</u> We will learn about gravity and begin to learn about planets. We will learn about day and night and make comparisons. We will investigate nocturnal animals and discover some facts about these animals. We will use magnets to explore materials that are attracted and repelled. We will learn the importance of good dental hygiene.	<u>Shadows and Reflections Development Matters:</u> <ul style="list-style-type: none"> • UTW (Explore the World Around Them) We will investigate different materials and learn what a reflection is. We will investigate our reflections in mirrors and describe what we see. We will compare objects according to their shape, size, material and use. We will learn about objects that are opaque and transparent.
		Potential Education Visits/Visitors: Snowdome		
		Autumn 2	Spring 2	Summer 2
		Once Upon a Time / Can we Explore?	Dangerous Dinosaurs / Puddles and Rainbows	Big Wide World / Splash
		<u>Once Upon a Time Development Matters:</u> <ul style="list-style-type: none"> • UTW (Explore the World Around Them) We are planting beans to grow our own beanstalk and learning about the life cycle of different plants. We are revisiting the different parts of plants and what they need to grow healthily.	<u>Dangerous Dinosaurs Development Matters:</u> <ul style="list-style-type: none"> • UTW (understand important processes and changes in the natural world) We will revisit fossils and will make our own fossil shortbread biscuits. We will observe different dinosaur teeth and identify which are carnivore, herbivore or omnivore. We will create volcanoes and describe what happens when they erupt.	<u>Big Wide World Development Matters:</u> <ul style="list-style-type: none"> • UTW (Explore the World Around Them) • UTW (Sort and group materials) We will revisit habitats and explain where they think animals live and why. We will learn why it is important to recycle and sort everyday materials into different recycling groups. We will learn about the harmful effects of litter and plastic waste on wildlife. We will investigate objects that float or sink.
		<u>Can we Explore Development Matters:</u> <ul style="list-style-type: none"> • UTW (Explore collections of materials) • UTW (understand important processes and changes in the natural world) We will go a 'bear hunt' and set up a barefoot walk using different materials with different textures. We will talk about different animals and learn about deforestation.	<u>Puddles and Rainbows Development Matters:</u> <ul style="list-style-type: none"> • UTW (Explore the World Around Them) We will revisit seasonal changes and investigate weather patterns. We will create 'clouds in a jar' and explain how clouds are formed. We will learn how rainbows are formed.	<u>Splash Development Matters:</u> <ul style="list-style-type: none"> • UTW (Explore the World Around Them) We will revisit objects that float or sink. We will learn about freezing and melting. We will learn why it is important to stay hydrated, especially on hot days.

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Y1/2	Cycle A (2022/23)	Seasonal Changes & Uses of Everyday Materials	Seasonal Changes & Plants	Seasonal Changes & Animals
		<u>National Curriculum Links:</u> <ul style="list-style-type: none"> Y1: Seasonal Changes Y2: Uses of Everyday Materials <p>During this unit of work, we are learning about how the weather changes across the four seasons. We will record the rain fall and temperature observed in autumn.</p> <p>We are investigating and comparing the suitability of everyday materials and finding out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p>	<u>National Curriculum Links:</u> <ul style="list-style-type: none"> Y1: Seasonal Changes Y2: Plants <p>During this unit of work, we are learning about how the weather changes across the four seasons. We will record the rain fall and temperature observed in spring.</p> <p>We are observing and describing how seeds and bulbs grow into mature plants. We are investigating how plants need water, light and a suitable temperature to grow and stay healthy.</p>	<u>National Curriculum Links:</u> <ul style="list-style-type: none"> Y1: Seasonal Changes Y2: Animals including Humans <p>During this unit of work, we are learning about how the weather changes across the four seasons. We will record the rain fall and temperature observed in summer.</p> <p>We are learning about how animals grow into adults and finding out and describing the basic needs of animals for survival (water, food an air)</p>
		Autumn 2	Spring 2	Summer 2
		Forces and Movement	Living Things (Outdoor Learning)	Humans
		<u>National Curriculum Links:</u> <ul style="list-style-type: none"> N/A Discretely Taught <p>During this unit, we are learning about different types of forces (friction, wind and water).</p> <p>We will investigate the effects of wind on objects and learning why some objects sink and why some float.</p>	<u>National Curriculum Links:</u> <ul style="list-style-type: none"> Y2: Living Things and Their Habitats <p>We are exploring and comparing things that are alive, never alive and dead. We will find and identify different animals and plants and will describe their habitats. We are describing how animals obtain their food from plants and other animals using food chains.</p>	<u>National Curriculum Links:</u> <ul style="list-style-type: none"> Y2: Animals including Humans <p>During this unit of work, we are learning about how the weather changes across the four seasons. We will record the rain fall and temperature observed in summer.</p> <p>We are learning about how humans grow into adults and finding out and describing the basic needs of humans for survival (water, food an air)</p>
		Potential Education Visits/Visitors: Beacon Park		

		Autumn 1	Spring 1	Summer 1
Y1/2	Cycle B (2023/24)	Seasonal Changes & Everyday Materials	Seasonal Changes & Plants	Seasonal Changes & Animals
		<u>National Curriculum Links:</u> <ul style="list-style-type: none"> Y1: Seasonal Changes Y1: Everyday Materials <p>During this unit of work, we are learning about how the weather changes across the four seasons. We will record the rain fall and temperature observed in autumn.</p> <p>We are investigating and comparing different material and their uses. We are grouping together a variety of everyday materials on the basis of their simple physical properties.</p>	<u>National Curriculum Links:</u> <ul style="list-style-type: none"> Y1: Seasonal Changes Y1: Plants <p>During this unit of work, we are learning about how the weather changes across the four seasons. We will record the rain fall and temperature observed in spring.</p> <p>We are identifying and naming a variety of common wild and garden plants, including deciduous and evergreen trees. We are identifying and describing the basic structure of a variety of common flowering plants, including trees.</p>	<u>National Curriculum Links:</u> <ul style="list-style-type: none"> Y1: Seasonal Changes Y1: Animals including Humans <p>During this unit of work, we are learning about how the weather changes across the four seasons. We will record the rain fall and temperature observed in summer.</p> <p>We are learning about how animals grow into adults and finding out and describing the basic needs of animals for survival (water, food an air)</p>
		Autumn 2	Spring 2	Summer 2
		Pushes and Pulls (Forces)	Living Things(Outdoor Learning)	Humans
		<u>National Curriculum Links:</u> <ul style="list-style-type: none"> N/A Discretely Taught <p>During this unit, we are learning about different types of forces (friction, wind and water).</p> <p>We will investigate different kinds of movement and will explain how our bodies move using pushes and pulls. We are beginning to understand gravity and will explain how objects fall to the ground because of a force called gravity.</p>	<u>National Curriculum Links:</u> <ul style="list-style-type: none"> N/A Discretely Taught <p>During this unit, we are identifying whether something is a plant or an animal. We will group animals and name their parts. We will be pond dipping on the school grounds to investigate the animals and plants that live there.</p>	<u>National Curriculum Links:</u> <ul style="list-style-type: none"> Y1: Animals including Humans <p>We are identifying, naming, drawing and labelling the basic parts of the human body and say which part of the body is associated with each sense.</p>

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		Autumn 1	Spring 1	Summer 1
Y3/4	Cycle A (2022/23)	States of Matter	Electricity	Sound
		<u>National Curriculum Links:</u> <ul style="list-style-type: none"> Y4: States of Matter <p>During this unit, we will compare and group materials together, according to whether they are solids, liquids or gases We will also 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). We will identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p>	<u>National Curriculum Links:</u> <ul style="list-style-type: none"> Y4: Electricity <p>During this unit, we will identify common appliances that run on electricity. We will construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. We are recognising that a switch opens and closes a circuit and use these to light a bulb. Finally, we will be investigating common conductors and insulators.</p>	<u>National Curriculum Links:</u> <ul style="list-style-type: none"> Y4: Sound <p>During this unit, we will identify how different sounds are made and recognise that vibrations from sounds travel through a medium to the ear. We will find patterns between the pitch of a sound and features of the object that produced it and will find patterns between the volume of a sound and the strength of the vibrations that produced it.</p>
		Autumn 2	Spring 2	Summer 2
		Springs and Friction	Living Things (Outdoor Learning)	Animals including Humans
		<u>National Curriculum Links:</u> <ul style="list-style-type: none"> N/A Discretely Taught <p>During this unit, we will investigate forces of different kinds (surface friction and water resistance). We will learn how forces can affect movement and how forces can be measured and compared using force meters.</p>	<u>National Curriculum Links:</u> <ul style="list-style-type: none"> Y4: Living Things and Their Habitats <p>We will group living things in a variety of ways. We will explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment We are recognising that environments can change and that this can sometimes pose dangers to living things.</p>	<u>National Curriculum Links:</u> <ul style="list-style-type: none"> Y4: Animals including Humans <p>During this unit, we will describe the simple functions of the basic parts of the digestive system in humans. We will 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>
		Potential Education Visits/Visitors: Beacon Park		

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		Autumn 1	Spring 1	Summer 1
Y3/4	Cycle B (2023/24)	Rocks	Plants	Light
		<u>National Curriculum Links:</u> <ul style="list-style-type: none">Y3: Rocks <p>We are comparing and grouping different kinds of rocks. We will describe how fossils are formed when things are trapped within rock. We will recognise that soils are made from rocks and organic matter.</p>	<u>National Curriculum Links:</u> <ul style="list-style-type: none">Y3: Plants <p>During this unit, we are identifying and describing the functions of different parts of flowering plants (roots, stem/trunk, leaves and flowers). We will investigate the requirements of plants for life and growth. We will investigate the way in which water is transported within plants. We will explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p>	<u>National Curriculum Links:</u> <ul style="list-style-type: none">Y3: Light <p>During this unit, we will recognise that they need light in order to see things and that dark is the absence of light. We will notice that light is reflected from surfaces. We will recognise that light from the sun can be dangerous. We will recognise that shadows are formed when the light from a light source is blocked by a solid object We will find patterns in the way that the size of shadows change.</p>
		Autumn 2	Spring 2	Summer 2
		Forces and Magnets	Living Things (Outdoor Learning)	Animals including Humans
		<u>National Curriculum Links:</u> <ul style="list-style-type: none">Y3: Forces and Magnets <p>During this unit, we will compare how things move on different surfaces. We will compare and group together a variety of everyday materials. We will use magnets to investigate how magnetic forces can act at a distance. We will observe how magnets attract or repel each other and describe them as having two poles.</p>	<u>National Curriculum Links:</u> <ul style="list-style-type: none">N/A: Taught Discretely <p>During this unit, we will focus on life processes. We will research and classify different plants, animals, fish, birds, reptiles.</p>	<u>National Curriculum Links:</u> <ul style="list-style-type: none">Y3: Animals, Including Humans <p>During this unit, we will identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat. We will identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p>
		Potential Education Visits/Visitors: Beacon Park		

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		Autumn 1 and Autumn 2	Spring 1	Summer 1
Y5/6	Cycle A (2022/23)	Evolution and Inheritance	Electricity	Light
		<u>National Curriculum Links:</u> <ul style="list-style-type: none"> Y6: Evolution and Inheritance <p>During this unit of work, we will recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.</p> <p>We will recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.</p> <p>We will investigate inherited traits and collect data on these traits.</p> <p>We will identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p>	<u>National Curriculum Links:</u> <ul style="list-style-type: none"> Y6: Electricity <p>During this unit, we will associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.</p> <p>We will 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.</p> <p>We will use recognised symbols when representing a simple circuit in a diagram.</p>	<u>National Curriculum Links:</u> <ul style="list-style-type: none"> Y6: Light <p>We will recognise that light appears to travel in straight lines and use the idea that light travels in straight lines to explain how objects are seen.</p> <p>We will 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</p> <p>We will use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</p>
			Spring 2	Summer 2
			Living Things (Outdoor Learning)	Animals including Humans
			<u>National Curriculum Links:</u> <ul style="list-style-type: none"> Y6: <u>Living Things and Their Habitats</u> <p>During this unit, we will describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals.</p> <p>We will give reasons for classifying plants and animals based on specific characteristics.</p>	<u>National Curriculum Links:</u> <ul style="list-style-type: none"> Y6: <u>Animals, including Humans</u> <p>We will identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. We will dissect and examine a real heart.</p> <p>We will recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</p> <p>We will describe the ways in which nutrients and water are transported within animals, including humans.</p>

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		Autumn 1	Spring 1	Summer 1
Y5/6	Cycle B (2023/24)	Properties and Changes	Plants	Earth and Space
		<u>National Curriculum Links:</u> <ul style="list-style-type: none"> Y5: Properties and Changes <p>During this unit, we will compare and group together materials based on their properties (hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets) We will dissolve materials in liquid and recover a substance from a solution. We will filter, sieve and evaporate solids, liquids and gases. We will investigate reversible and irreversible changes in materials.</p>	<u>National Curriculum Links:</u> <ul style="list-style-type: none"> N/A: Discretely Taught <p>During this unit, we will explore the part that flowers play in fertilisation and germination. We will investigate fertilisation and germination by observing flowering plants and dissecting them.</p>	<u>National Curriculum Links:</u> <ul style="list-style-type: none"> Y5: Earth and Space <p>During this unit, we will describe the movement of the Earth, and other planets, relative to the Sun in the solar system. We will describe the movement of the Moon relative to the Earth. We will describe the Sun, Earth and Moon as approximately spherical bodies. We will use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.</p>
		Potential Education Visits/Visitors: National Space Centre		
		Autumn 2	Spring 2	Summer 2
		Forces	Living Things (Outdoor Learning)	Animals including Humans
		<u>National Curriculum Links:</u> <ul style="list-style-type: none"> Y5: Forces <p>During this unit, we will explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. We will identify the effects of air resistance, water resistance and friction, that act between moving surfaces. We will recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</p>	<u>National Curriculum Links:</u> <ul style="list-style-type: none"> Y5: Living Things and Their Habitats <p>During this unit, we will describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. We will describe the life process of reproduction in some plants and animals.</p>	<u>National Curriculum Links:</u> <ul style="list-style-type: none"> Y5: Animals, including Humans <p>During this unit, we will describe the changes as humans develop to old age.</p>
		Education Visits/Visitors: Beacon Park		