

Science Policy

Why is Science important?

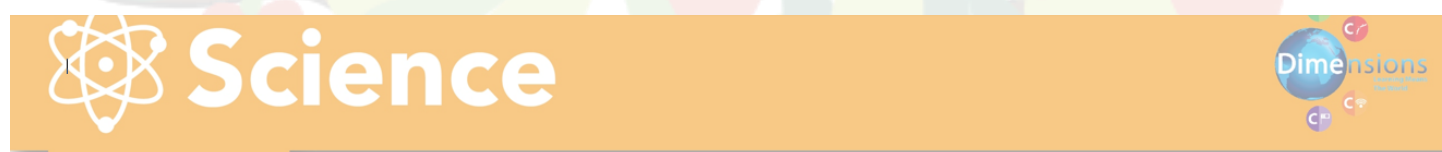
Science is an important and valued subject because it is highly relevant; an integral part of daily life, from cooking and checking the weather, to recycling and nature walks.

Through science, our lives are changed for the better. We believe all pupils should be taught about the role that science plays in positive advancements, as well as scientific knowledge, methods and processes.

Advances in science are continuing to transform our world at lightning speed and we need to do our best to prepare our pupils for a future we can only imagine.

When is Science taught?

Science is taught through thematic units. The Satellite View maps out which thematic units feature this subject and clearly shows the objectives taught.



Subject Overview

	Autumn			Spring			Summer			
Learning Pathway	Culture	Conflict	Christmas Theme Week	Communication	Children's Mental Health Week	NC Essentials	Competency	Competency	Conservation	
Pathfinders 1 (Year 1)	Zero to Hero Light and Electricity	Unity in the Community Life Processes/ Growing		Happily Ever After New Life/ Habitats		Never Eat Shredded Wheat	Jurassic Hunter The Story of Mary Anning	Royal Patrons	Light Up the World The Sun/ Light and Heat	
Learning Pathway	Culture	Conflict	Christmas Theme Week	Communication	Children's Mental Health Week	NC Essentials	Competency	Competency	Conservation	
Pathfinders2 (Year 2)	Come Fly with me Arctic Circle Seasons / Materials	Land Ahoy Speed, Sound and Motion		Inter-Nation Media Station		Paddington's Passport	The Visionary	Record Breaker	Going Wild Living Things	
Learning Pathway	Culture	Conflict	Christmas Theme Week	Communication	Children's Mental Health Week	Competency	NC Essentials	NC Essentials	Conservation	
Adventurers 1 (Year 3)	Come Fly with me Africa Animals Including Humans, Classification	Athens V Sparta Forces		'That's all Folks'		Linday Man	Out and About	Rocky the Dinosaur	Picture our Planet	
Learning Pathway	Culture	Conflict	Christmas Theme Week	Communication	Children's Mental Health Week	Competency	NC Essentials	NC Essentials	Conservation	
Adventurers 2 (Year 4)	A World of Difference/ Cry Freedom Light	Law and Order		Lightning Speed Electricity		Viking Warrior	Window on the World	May the Force be with You States of Matter Rocks, Evolution (fossils)	Under the Canopy Plants and Habitats	
Learning Pathway	Culture	Conflict	Christmas Theme Week	Communication	Children's Mental Health Week	NC Essentials	Competency	NC Essential	Competency	Conservation
Navigators 1 (Year 5)	Come Fly with me America Materials	You've not Invited		Mission Control Earth and Space		Go with the Flow Animals, including Humans, Human Body	Pharaoh Queen	Been around the world	The Rescuers	Global Warning Materials
Learning Pathway	Culture	Conflict	Christmas Theme Week	Communication	Children's Mental Health Week	Competency	Competency	NC Essential	NC Essentials	Conservation
Navigators 2 (Year 6)	'I have a dream...' Living Things and Adaptation	Wars of the World Light		A World of Bright Ideas Forces		True Crime	Fighting Footballer	In your Element	Time Team	Full of Beans Electricity

How Does Our Learning Grow?

How is Science taught?

Science is taught through working scientifically (involving practical investigation, observation and application skills, enquiry and research) alongside specific taught subject knowledge. Learning takes place both inside and outside the classroom.

What do we learn about in Science?

'Learning Means the World' Curriculum

We learn about:-

Plants

Animals, including humans

Materials

Seasonal changes

Living things and their habitats

Light and heat

Forces and magnets

Sound

Electricity

Earth and space

Evolution and inheritance

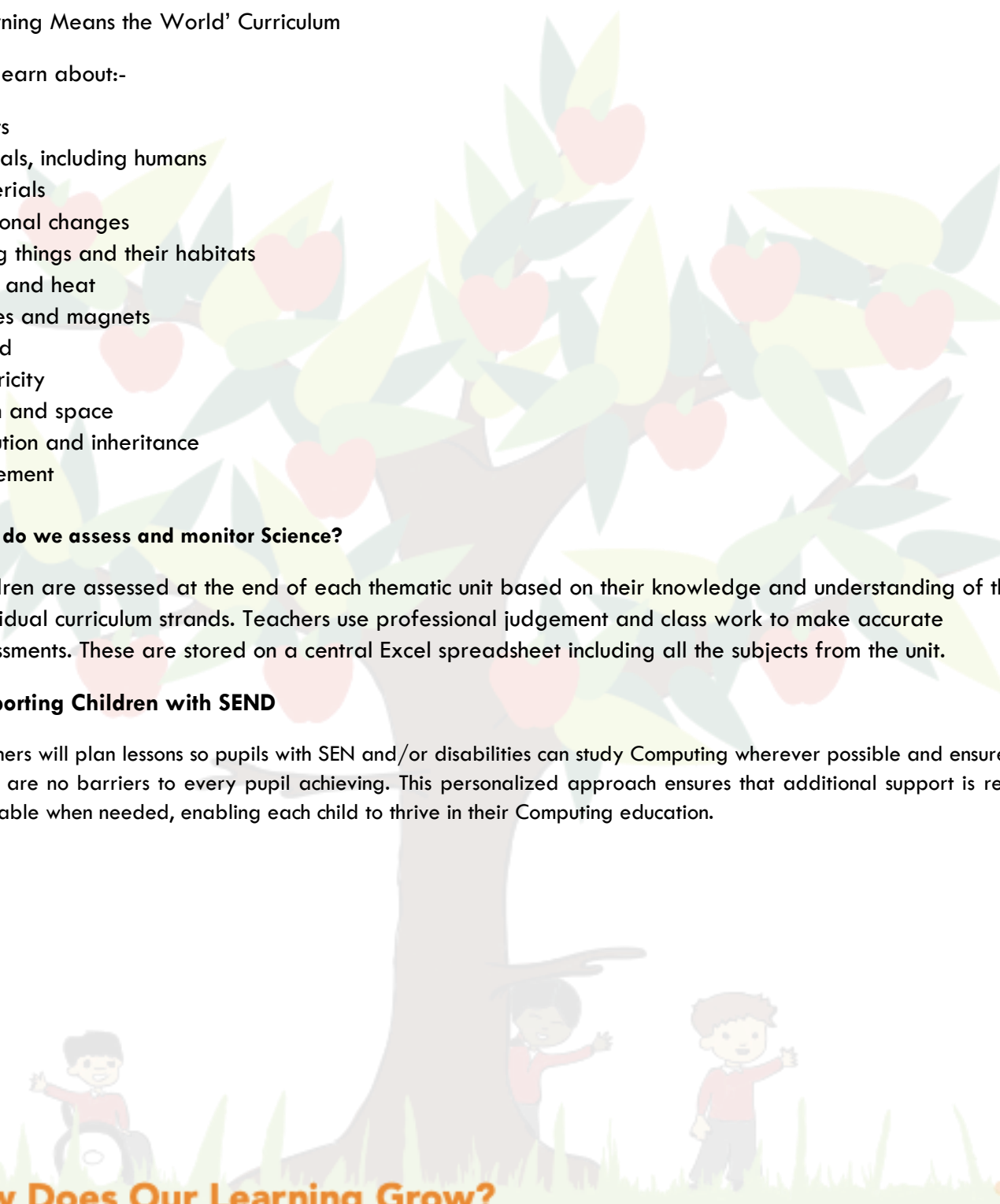
Movement

How do we assess and monitor Science?

Children are assessed at the end of each thematic unit based on their knowledge and understanding of the individual curriculum strands. Teachers use professional judgement and class work to make accurate assessments. These are stored on a central Excel spreadsheet including all the subjects from the unit.

Supporting Children with SEND

Teachers will plan lessons so pupils with SEN and/or disabilities can study Computing wherever possible and ensure that there are no barriers to every pupil achieving. This personalized approach ensures that additional support is readily available when needed, enabling each child to thrive in their Computing education.



How Does Our Learning Grow?

National Curriculum Coverage

Science Key Stage 1

Science National Curriculum Objectives (KS1)		Where are they taught?
Pupils should be taught to...		
Plants	identify a variety of common wild and garden plants, including deciduous and evergreen trees	Unity in the Community
	identify and describe the basic structure of a variety of common flowering plants	
	observe and describe how seeds and bulbs grow into mature plants	
	find out and describe how plants need water, light and a suitable temperature to grow and stay healthy	
Animals, Including Humans	identify and name a variety of common animals including birds, fish, amphibians, reptiles and mammals	Going Wild Happily Ever After
	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	KS1 3D PSHE C1 U3 L2 (within Going Wild)
	notice that humans and other animals can produce offspring and that these offspring can grow into adults	Going Wild Happily Ever After
	find out about the basic needs of animals, as well as humans, for survival (which are food, water and air)	Going Wild
	describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene	Within KS1 3D PSHE C1 U1 L2 (within Come Fly With Me! Arctic Circle) C1 U1 L4, L6 (within Going Wild) C1 U1 L5 (additional lesson) C1 U2 L1 – 6 (additional lessons)
Everyday Materials	distinguish between an object and the material from which it is made	Come Fly With Me! Arctic Circle
	identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock	
	Describe how the simple physical properties of a variety of everyday materials vary	
	compare and group together a variety of everyday materials on the basis of their simple physical properties	
	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	

How Does Our Learning Grow?

Seasonal Changes	observe changes across the four seasons	Come Fly With Me! Arctic Circle <i>The Four Seasons Project</i>
	observe and describe weather associated with the four seasons and how day length varies	
Living Things and Their Habitats	explore and compare the differences between things that are living, dead, and things that have never been alive	Going Wild Happily Ever After
	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	Come Fly With Me! Arctic Circle
	identify and name a variety of plants and animals in their habitats, including microhabitats	
	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	Unity in the Community
Light (LKS2)	recognise that shadows are formed when the light from a light source is blocked by a solid object	Light Up the World
	recognise that light from the Sun can be dangerous and that there are ways to protect their eyes	
	recognise that we need light in order to see things and that dark is the absence of light	
Sound (LKS2)	recognise that sounds get fainter as the distance from the sound source increases	Land Ahoy!
Living Things and Their Habitats (LKS2)	recognise that environments can change and that this can sometimes pose dangers to living things	Going Wild
Electricity (LKS2)	construct a simple series electrical circuit identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers	Zero to Hero
	recognise that a switch opens and closes and circuit	
Forces and Magnets (LKS2)	compare how things move on different surfaces	Land Ahoy!

National Curriculum Coverage – Lower KS2

Science National Curriculum Objectives (LKS2)		Where are they taught?
Pupils should be taught to...		
Plants	identify and describe the functions of different parts of flowering plants: roots, stem / trunk, leaves and flowers	Under the Canopy
	explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant	
	investigate the way in which water is transported within	
	explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal	
Animals, Including Humans	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	LKS2 3D PSHE C1 U3 L1, L2 (within Come Fly With Me! Africa)
	identify that humans and some other animals have skeletons and muscle for support, protection and movement	Come Fly With Me! Africa
	describe the simple functions of the basic parts of the digestive system	
	identify the different types of teeth on humans and their simple functions	
	construct and interpret a variety of food chains, identifying producers, predators and prey	
Rocks	compare and group together different kinds of rocks on the basis of their appearance and simple physical properties	Rocky the Findosaur

	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	
Light	know that light is reflected from surfaces	A World of Difference Cry Freedom
	find patterns in the way that the size of shadows change	
	know that shadows are formed when the light from a light source is blocked by a solid object	Light Up the World (KS1)
	recognise that light from the Sun can be dangerous and that there are ways to protect their eyes	
	recognise that we need light in order to see things and that dark is the absence of light	
Forces and Magnets	compare how things move on different surfaces	Land Ahoy (KS1) May the Force Be With You
	notice that some forces need contact between two objects and some forces act at a distance	May the Force Be With You
	observe how magnets attract or repel each other and attract some materials and not others	
	describe magnets as having two poles	
	predict whether two magnets will attract or repel each other, depending on which poles are facing	
	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	
Living Things and Their Habitats	recognise that living things can be grouped in a variety of ways	Come Fly With Me! Africa
	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	Going Wild (KS1)
States of Matter	compare and group materials together, according to whether they are solids, liquids or gases	Rocky the Findosaur
	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	
Sound	identify how sounds are made, associating some of them with something vibrating	Picture Our Planet
	know that vibrations from sounds travel through a medium to the ear	
	find patterns between the volume of a sound and the strength of the vibrations that produce it	
	find patterns between the pitch of a sound and the feature of the object that produced it	
	recognise that sounds get fainter as the distance from the sound source increases	Land Ahoy! (KS1)
Electricity	identify common appliances that run on electricity	Zero to Hero (KS1) Lightning Speed
	construct a simple series electrical circuit and demonstrate this, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers	
	identify whether or not a lamp will light in a simple series circuit based on whether or not the lamp is part of a complete loop with a battery	Lightning Speed
	recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit	
	recognise some common conductors and insulators, and associate metals with being good conductors	

National Curriculum Coverage – Upper KS2

Science National Curriculum Objectives (UKS2)		Where are they taught?
Pupils should be taught to...		
Living Things and Their Habitats	describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird	'I Have a Dream...'
	describe the life process of reproduction in some plants and animals	
	describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals	
	give reasons for classifying plants and animals based on specific characteristics	
Animals, Including Humans	describe the changes as humans develop to old age	Go With the Flow
	identify and name the main parts of the human circulatory system, and describe the function of the heart, blood vessels and blood	
	describe the ways in which nutrients and water are transported within animals, including humans	Go With the Flow
	recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function	
Properties and Changes of Materials	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	Global Warning
	know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution	
	use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating	
	give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic	
	demonstrate that dissolving, mixing and changes of state are reversible changes	
	explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda	
Earth and Space	describe the movement of the earth and other planets relative to the sun in the solar system	Mission Control
	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	
Forces	explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object	A World of Bright Ideas
	identify the effects of air resistance, water resistance and friction, that act between moving surfaces	
	recognise some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect	

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	Rocky the Findosaur (LKS2)
	recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents	'I Have a Dream...'
Light	identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution	
	recognise that light appears to travel in straight lines	Wars of the World
	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	
Electricity	use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them	Full of Beans
	associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit	
	compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on / off position of switches	
	use recognised symbols when representing a simple circuit in a diagram	

How Does Our Learning Grow?

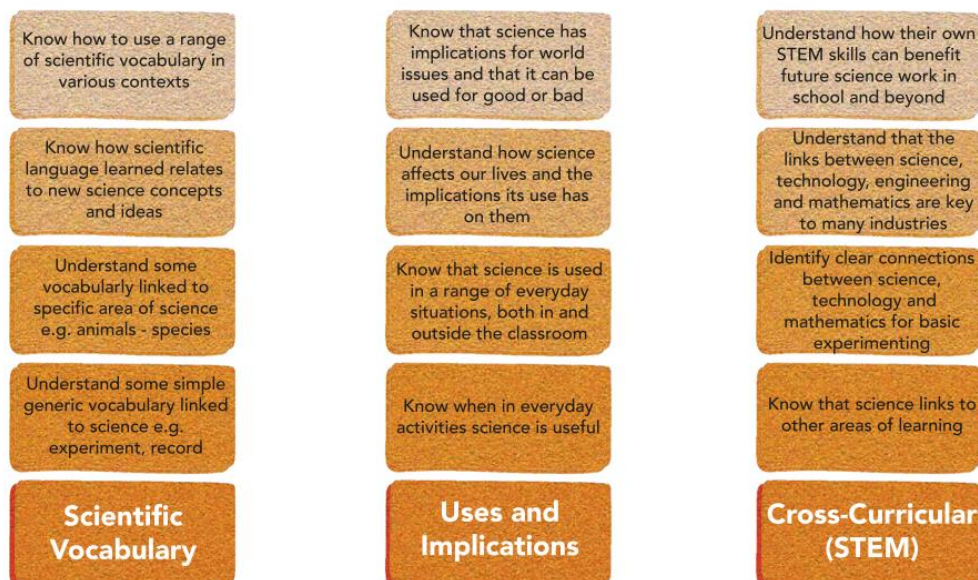
Progression within Science

Science Knowledge Building



© Dimensions Curriculum Ltd.

Science Knowledge Building

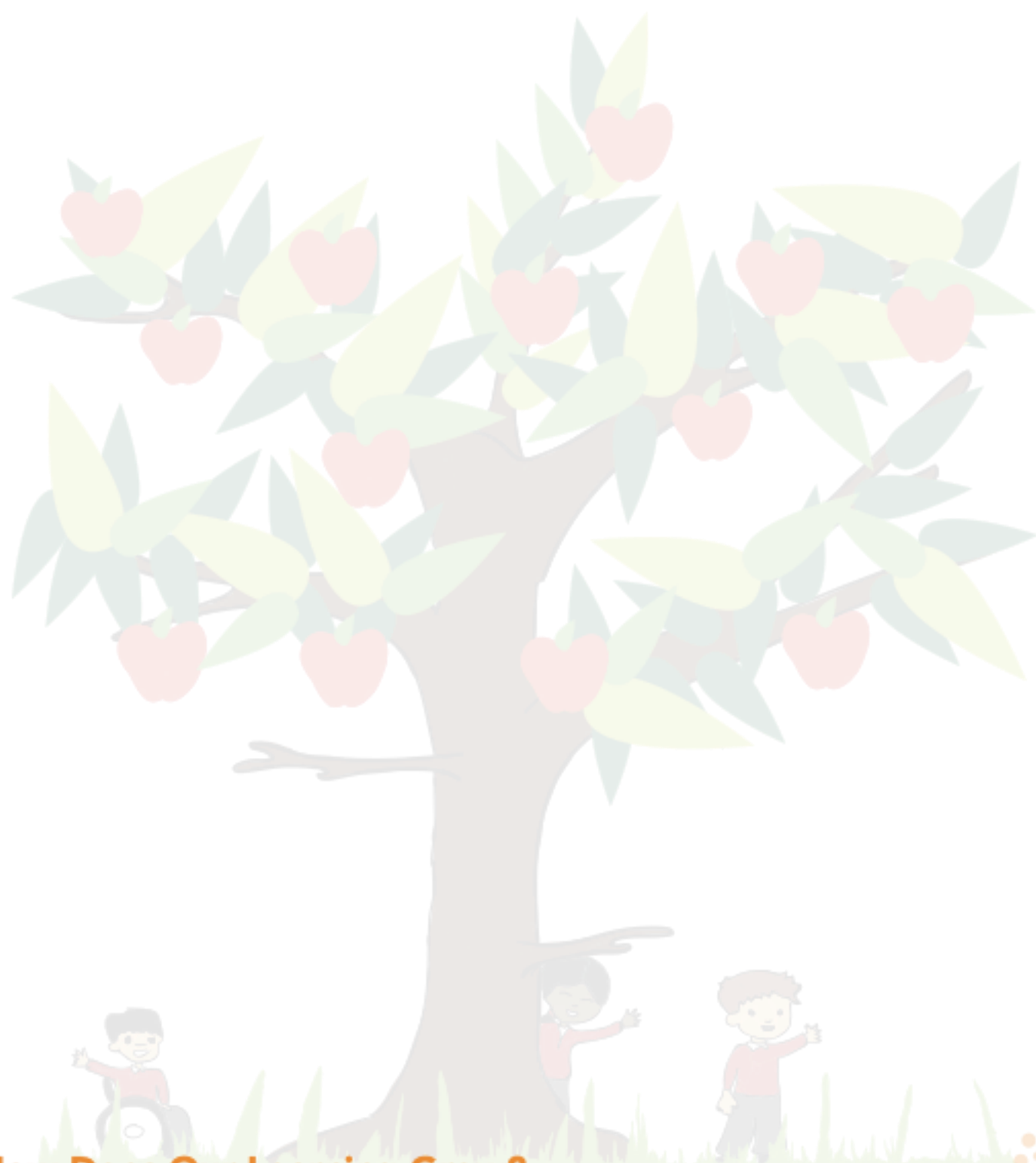


© Dimensions Curriculum Ltd.

Created: April 2024

Review Date: April 2026

How Does Our Learning Grow?



How Does Our Learning Grow?