Wrockwardine Wood Infant School & Oakengates Nursery Federation 'Love, Laugh, Learn'

Science Long Term Planning

Year 1	1st Half term	2nd Half Term
Autumn	Sept - Oct Living things and their habitats Plants Weather and seasonal change Investigation: Which week will be the rainiest? (Observing over time)	Nov - Dec Living things and their habitats Humans Investigation: Do people with bigger feet need bigger gloves? (Pattern seeking)
Spring	Jan-Feb Living things and their habitats Materials Investigation: Which fabric is the most absorbent? (Fair testing)	Feb-March Living things and their habitats Animals Investigation: How do scientists group animals? (Research/Grouping & Classifying) Weather and seasonal change Inquiry: How has the Oak tree changed from autumn to
Summer	April – May Living things and their habitats Plants Investigation: Do all daisies have the same number of petals? (Pattern seeking)	June - July Living things and their habitats Insects Investigation: What insects are living in our school grounds? Weather and seasonal change Investigation: It was chilly this morning but now it's really warm. How does the temperature change throughout a summer's day? (Observing over time)

Year 2	1 st Half term	2 nd Half Term
Autumn	Sept - Oct Living things and their habitats Plants Investigation: What do plants need to grow healthily? (Fair testing) Children to devise their own comparative investigations linked to cress e.g. Does cress grow better with or without water? Does cress grow better in the light or dark?	Nov - Dec Living things and their habitats Humans Investigation: Which snack contains the most sugar? (Research)
Spring	Jan-Feb Living things and their habitats Materials Investigation: Which material is the most suitable for a gym kit? (Fair testing)	Feb-March Living things and their habitats Animals Chester Zoo Investigation: How do chicks change over time? (Observing over time)
Summer	April – May Living things and their habitats Plants Investigation: Where are the most daisies? (Pattern seeking) Do any plants grow without soil?	June - July Living things and their habitats Insects Which colour petals attract the most bees? (Pattern seeking)

Reception and	1 st Half term	2 nd Half Term
Nursery		
Autumn	Seasonal change and Weather – Autumn/Winter Humans: Naming parts of the body Habitat: Where do I live? Materials: Treasure baskets of loose parts of a range of natural and manmade materials. Melting Polar regions. Cooking: Apple pie/crumble. Porridge. Dark and light. Torches. Push and pulls. Scientific Enquiry Observing Over Time Observe the changes during Autumn on the environment. Observe an apple going brown. Identifying and Classifying Group autumn objects. Pattern Seeking Explore the colour leaves in our environment and find out which colour leaf we have the most of. Research Find out about Autumn from books and the computer. Fair Testing Find out which apple is the favourite to make an apple crumble.	Seasonal change and Weather – Autumn/Winter Humans: Naming parts of the body Habitat: Where do I live? Materials: Treasure baskets of loose parts of a range of natural and manmade materials. Melting Polar regions. Cooking: Apple pie/crumble. Porridge. Dark and light. Torches. Push and pulls. Scientific Enquiry Observing Over Time Observe the changes during Autumn on the environment. Observe an apple going brown. Identifying and Classifying Group autumn objects. Pattern Seeking Explore the colour leaves in our environment and find out which colour leaf we have the most of. Research Find out about Autumn from books and the computer. Fair Testing Find out which apple is the favourite to make an apple crumble.
Spring	Seasonal change and Weather –Winter/Spring Plants: Observe and name plants grown during spring. Observe own plants. Spring flowers. Animals: Naming farm animals and their young. Life cycle of a Chicken/Duck Materials: Melting, frozen puddles, snowmen. The 3 Little Pigs – Hard materials. The builders Yard Cooking: Making toast Habitats: Where do farm animals live? Magnets. Forces. Scientific Enquiry Observing Over Time Observe the changes during Winter and Spring on the environment. Observe the life cycle of chicks/ducks. Identifying and Classifying Identify changes during spring and naming some plants. The Big Bird Watch Pattern Seeking Sorting animals Research	Seasonal change and Weather –Winter/Spring Plants: Observe and name plants grown during spring. Observe own plants. Spring flowers. Animals: Naming farm animals and their young. Life cycle of a Chicken/Duck Materials: Melting, frozen puddles, snowmen. The 3 Little Pigs – Hard materials. The builders Yard Cooking: Making toast Habitats: Where do farm animals live? Magnets. Forces. Scientific Enquiry Observing Over Time Observe the changes during Winter and Spring on the environment. Observe the life cycle of chicks/ducks. Identifying and Classifying Identify changes during spring and naming some plants. Pattern Seeking Sorting animals Research Finding out about farm animals from books and the computer. Fair Testing

	Finding out about farm animals from books and the computer. Fair Testing Which bean will grow the tallest? (N) Where will the bean grow the best? (R)	Which bean will grow the tallest? (N) Where will the bean grow the best? (R)
Summer	Seasonal change and Weather Spring/Summer Plants: Talking about changes. Summer flowers. Sunflowers Planting seeds. Insects: Naming insects and life cycle of a butterfly Animals: Naming wild animals and their young. Habitats: Where do wild animals live? Humans: Changes/growth Materials: Melting, Ice Lollies. Floating and sinking. Boats. Forces. Cooking/food: Smoothies making ice Iollies. Shadows Scientific Enquiry Observing Over Time Observe the changes during Summer on the environment. Life cycle of butterflies. Identifying and Classifying Identify changes during Summer Group Summer and Winter clothes. Pattern Seeking Do all minibeasts fly? Research Find out about minibeasts from books and the computer. Fair Testing Will we find the same minibeasts in the same place each day?	Seasonal change and Weather Spring/Summer Plants: Talking about changes. Summer flowers. Sunflowers Planting seeds. Insects: Naming insects and life cycle of a butterfly Animals: Naming wild animals and their young. Habitats: Where do wild animals live? Humans: Changes/growth Materials: Melting, Ice Lollies. Floating and sinking. Boats. Forces. Cooking/food: Smoothies making ice Iollies. Shadows Scientific Enquiry Observing Over Time Observe the changes during Summer on the environment. Life cycle of butterflies. Identifying and Classifying Identify changes during Summer Group Summer and Winter clothes. Pattern Seeking Do all minibeasts fly? Research Find out about minibeasts from books and the computer. Fair Testing Will we find the same minibeasts in the same place each day?

Explain

Predict

Analyse

Research

Excitement

Curiosity

Natural world

Predicting

Technical terminology

Specialist vocabulary

Mathematical knowledge

Collecting, presenting and analysing data

Observing over time

Pattern seeking

Relationships

Presenting data

Identifying

Classifying and grouping

Comparative

Fair Testing

Question

Aims

Scientific knowledge and conceptual understanding Understanding nature, processes and methods of Science Uses and implications of Science today and in the future

First hand practical experiences

Working Scientifically

- Asking simple questions and recognise that they can be answered in different ways
- Observing closely, using simple equipment
- Performing simple tests
- Identifying and Classifying
- Use their observations and ideas to suggest answers to questions
- Gathering and recording data to help in answering questions

Sustained Thinking

Children suggest and gather their own equipment e.g. hand lens, egg timers, measuring containers, rulers and tape measures, man-made and natural objects. Ask people questions and use secondary resources

Communicating ideas

Talk about why they carried out the test, how they carried out the test and explain their findings in a range of ways using scientific language and recording

	EY	Y1	Y2
Humans Living things and their habitats	Ourselves Name parts of the body Learn about the 5 senses Learn about hygiene Learn about exercise for health Learn about healthy eating Staying safe in the sun Read stories and sing rhymes e.g. This is the way we brush our teeth	Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. Pupils should have plenty of opportunities to learn the names of the main body parts Working Scientifically Use their senses to compare different textures, sounds and smells.	Notice that animals, including humans, have offspring which grow into adults They should also be introduced to the processes of reproduction and growth in animals e.g. baby, toddler, child, teenager, adult Find out about and describe the basic needs of 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. All living things have characteristics that are essential for keeping them alive and healthy. Describe how humans obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food (Living things and their habitats). Simple food chain grass, cow, human Explore and compare the differences between things that are living, dead, and things that have never been alive (Living things and their habitats). Is a flame alive?

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Vocabulary to be taught	body parts including:	human	survival – water, air, oxygen
during Humans unit	head	senses – smell, hearing, sight, touch, taste	diet
	arm	skeleton	nutrition
	leg	bone	balanced diet
	stomach	joint	carbohydrate, protein, diary, fats, sugars
	back	body parts including facial features e.g.	vitamins
	foot	eyelash, eyebrow, nostril	digestion
	hand	joints including elbow, wrist, hip, ankle,	hydrate/dehydrate
		shoulder, knee	energy
			organ
			muscle
			pulse
			hygiene
			tooth decay
			disease
			germ
Animals	Visit the farm or invite the	Identify and name a variety of common	Notice that animals, including humans,
Life cycle, needs, habitat	animal zoo into school.	animals including fish, amphibians,	have offspring which grow into adults
		reptiles, birds and mammals including	They should also be introduced to the
	Name and identify different	pets.	processes of reproduction and growth in
	animals wild and domestic.	Identify and name a variety of common	animals e.g. egg, chick, chicken; spawn,
		animals that are carnivores, herbivores	tadpole, frog;
	Uses stories and rhymes to	and omnivores	Find out about and describe the basic
	learn about animals and	and ominivores	needs of animals, for survival (water,
	habitats e.g. The Bear Hunt	Describe and compare the structure of a	food and air)
		variety of common animals (fish,	
	Observe life cycles e.g. A	amphibians, reptiles, birds and mammals,	
	caterpillar changing over time	including pets)	Identify that most living things live in
			habitats to which they are suited.
	Make habitats for mini-beasts		Describe how different habitats provide
	e.g. bug hotel		for the basic needs of different kinds of

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		Use the local environment throughout the	animals and how they depend on each
		year to explore and answer questions	other (Living things and their habitats)
		about animals in their habitat.	Describe how animals obtain their food
		Working Scientifically	from plants and other animals, using the
		Pupils might work scientifically by: using	idea of a simple food chain, and identify
		their observations to compare and	and name different sources of food
		contrast animals at first hand or through	(Living things and their habitats).
		videos and photographs, describing how	Working Scientifically
		they identify and group them; grouping	Observe animals and humans growing
		animals according to what they eat;	through video and first-hand experience.
			Ask questions about what animals need
			for survival and what humans need to
			stay healthy.
			Suggest ways to find answers to their
			questions
			Compare animals in familiar habitats with
			animals found in less familiar habitats
			e.g. Rainforest, Woodland, Ocean,
			Seashore,
			Explore and compare the differences
			between things that are living, dead, and things that have never been alive
			(Living things and their habitats).
Vocabulary to be taught	Common farm animals and	gill	Habitat
during Animals unit	their young including:	finn	desert
	Cow	tusk	coast
	Goat	antler	rainforest
	Sheep	hoof	ocean
	Pig	tentacle	polar
	Chicken	feather	urban
	Calf	mammal	food chain

	Lamb	reptile	life cycle
	Piglet	amphibian	reproduce
	Chick	fish	offspring
	Cirick	bird	live young
	Common wild animals and their	insect	endangered
	young including:	carnivore	extinct
	Lion	omnivore	extinct
	Tiger	herbivore	
	Giraffe	THE SIVOIC	
	Elephant		
	Zebra		
	Monkey		
	Cub		
	Calf		
	Infant		
Insects	Explore the local environment	Observes different insects in the local area	Notice that insects have offspring which
Life cycle, needs, habitat	looking for mini-beasts.	compare and contrast	grow into adults
, , , , , , , , , , , , , , , , , , , ,	Name and identify different	·	They should also be introduced to the
	mini-beasts	They should understand how to take care	processes of reproduction and growth in
	Uses stories and rhymes to	of insects taken from their local	insects e.g. egg, caterpillar, pupa,
	learn about creatures e.g. <i>Incy</i>	environment and the need to return them	butterfly;
	Wincy Spider, The Bad	safely after study.	,,,
	Tempered Ladybird		Find out about and describe the basic
	,	Use the local environment throughout the	needs of insects, for survival (water, food
	Observe life cycles e.g. A	year to explore and answer questions	and air)
	caterpillar changing over time	about animals in their habitat e.g. birds	,
			Name a variety of insects in their micro
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	Make habitats for mini-beasts	Working Scientifically	habitat
	Make habitats for mini-beasts e.g. bug hotel	Working Scientifically	habitat Identify that most living things live in

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	Notice changes during the four		Learn how animals adapt to their
	seasons e.g. buds, blossom,	Working Scientifically	environment e.g. in a hot desert or
	leaves, fruit	Make tables and charts about the weather	under a wet log
		Make displays of what happens in the	
	How does weather affect us?	world around them including day length	
	How do we protect ourselves	as the seasons change	
	against the weather e.g. warm		
	woolly hat, cool cotton sun hat		
Vocabulary to be taught	rain	forecast	hibernate
during Seasonal change	wind	temperature	climate
and weather unit	sunshine	rainfall	flood
	fog	daylight	drought
	snow	season	
	autumn	January, February, March, April, May,	
	winter	June, July, August, September, October,	
	spring	November, December	
	summer		
Plants	Use the local environment	Use the local environment throughout	Use the local environment throughout
	throughout the year	the year	the year
	Seasonal walks	Name a variety of wild and garden plants	Name a variety of wild and garden plants
	Naming and identifying	Name a variety of wild and garden plants Deciduous and evergreen	Name a variety of wild and garden plants in their habitat
	different plants flowering and	Flowers and vegetables they have planted	
	non-flowering observing	Basic structure	Observe and describe how seeds and
	noticing similarities and	Comparing and contrasting,	bulbs grow
	differences	describing how they identify and group	buibs grow
	differences	Drawing diagrams	Find out and describe how plants need
	Naming and identifying	Records of changes over time	water, light and a suitable temperature
	different vegetables and fruit	Necords of changes over time	water, light and a suitable temperature
	observing noticing similarities		Learn about the requirements of plants
	and differences	Working Scientifically	· · · · · · · · · · · · · · · · · · ·
	and differences	Working Scientifically	for germination, growth and survival as

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	Planting and observing growth	Observing using magnifying glasses, comparing and contrasting familiar plants,	well as the process for reproduction and growth
	Understand what plants need	identifying how they were able to group	
	to grow.	them, drawing diagrams, showing the	Identify that most living things live in
		parts of different plants including a tree	Identify that most living things live in
	Observing changes over time		habitats to which they are suited. Describe how different habitats provide
	including life cycles of trees and	Record how plants change over time e.g.	for the basic needs of different kinds of
	plants understand that some	falling leaves and buds opening	plants and how they depend on each
	things die	Compare and contrast what they have	other (Living things and their habitats)
		found out about different plants	other (Living things and their habitats)
			Life cycle of bulbs and plants
			Note: Seeds and bulbs need water to
			grow but most do not need light; seeds
			and bulbs have a store of food inside
			them
			Working scientifically
			Observing and recording the growth of a
			variety of plants as they change over time
			from a seed or a bulb or observe similar
			plants as different stages of growth, set
			up a comparative test to show that plants
			need light and water to stay healthy
			Explore and compare the differences
			between things that are living, dead, and
			things that have never been alive (Living
			things and their habitats). Is a deciduous
			tree dead in winter?
Vocabulary to be taught	plant	deciduous	reproduce
during Plants unit	tree	evergreen	life cycle

	flower	branch, twig, crown, root, fruits	germinate
	seed	stem	seed dispersal
	leaves	petal	sprout
		bulb	shoot
			nutrition
			temperature
Materials	Name and sort different objects saying which material they are made from e.g. wood, plastic,	Distinguish between an object and the material from which it is made	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock,
	paper, fabric	Identify and name materials, including wood, plastic, glass, metal, water, and	paper and cardboard for particular uses
	Talk about simple properties to develop vocabulary such as	rock	Find out how the shapes of solid objects made from some materials can be
	rough, smooth, stretchy, hard	Describe the simple physical properties of a variety of everyday materials and their use	changed by squashing, bending, twisting and stretching.
	Use every day experiences to talk about the purpose of some materials e.g. your hat is warm because it is made of wool	Compare and group together a variety of everyday materials on the basis of their simple physical properties.	Pupils should identify and discuss the uses of different everyday materials so that they become familiar with how some materials are used for more than one thing (metal can be used for coins, cans,
	Which hat will keep us cool which will keep us warm why?	Pupils should explore, name, discuss and raise and answer questions about everyday materials so that they become familiar with the names of materials and properties Pupils should explore and experiment with	cars and table legs; wood can be used for matches, floors, and telegraph poles) or different materials are used for the same thing (spoons can be made from plastic, wood, metal, but not normally from glass).
		a wide variety of materials, including for example: brick, paper, fabrics, elastic, and foil.	They should think about the properties of materials that make them suitable or unsuitable for particular purposes and they should be encouraged to think

Wrockwardine Wood Infant School & Oakengates Nursery Federation *'Love, Laugh, Learn'*

Science Lo	ng Term	Planning

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		Working Scientifically	about unusual and creative uses for
		Performing simple tests to explore	everyday materials.
		questions, for example: 'What is the best	
		material for an umbrella?for lining a	Pupils might find out about people who
		dog basket?for curtains?for a	have developed useful new materials, for
		bookshelf?for a gymnast's leotard?'	example John Dunlop, Charles Macintosh
			or John McAdam.
		Which fabrics are best to wear in	
		Winter/Summer?	Working Scientifically
			Comparing the uses of everyday
			materials in and around the school with
			materials found in other places (at home,
			the journey to school, on visits, and in
			stories, rhymes and songs); observing
			closely, identifying and classifying the
			uses of different materials, and
			recording their observations.
			Explore and compare the differences
			between things that are living, dead, and
			things that have never been alive (Living
			things and their habitats). Have any of
			the materials been alive?
Vocabulary to be taught	wood	object	suitability
during Materials unit	glass	material	properties
	metal	hard/soft	purpose
	plastic	shiny/dull	
	brick	rough/smooth	
	paper	bendy/not bendy	
	stone	waterproof/not waterproof	
	water	absorbent/not absorbent	

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	opaque/transparent			