Science Curriculum

Implementation of the Science Curriculum

		Nu	rsery		
Aut 1 – Nursery	Aut 2 – Brilliant Birds	Spr 1 – Pets	Spr 2 – Splash	Sum 1 - Transport	Sum 2 – Mini beast
Rhymes					Madness
Wild Area – Find the spiders. Where might they live? Find out if an egg can really sit on a wall! Knowing what makes them unique, similarities/differences with friends	Looking outdoors for birds, exploring where they live, eat. Showing care for living things in the environment. Making observations about birds Sorting swim/fly animals Observing puffin movement and behaviour Simple life cycle of a bird Looking at changes in leaves as they decay. Identifying when an owl comes out based on eye colour. Sorting daytime and night-time animals.	Talk about pets tell everyone their name what they are and what they like to do/eat Understanding of a pet being an animal that can live in our homes. What does a pet need to be healthy/happy? Matching Animal Cards: animals and their babies Talking about how wild animals can't be pets. Animal's characteristics, eyes, mouth, nose, ears etc. H/a why do they have?	 NF book about how water is important for all living things and comes from the sky as rain. Simple explanation of the water cycle using big book 'The drop goes Plop' Watching clips and looking at photographs of the sea creatures Billy saw in his bucket. Floating and sinking focus - testing objects and making predictions, link to the story Naming different types of shark Learning shark body parts Facts about sharks Correct names for parts of a boat. Link back to floating and sinking - why does a boat float? Moving the boats we have made by wind power! 	Ice experiment- Science day Naughty Bus freezing toys Look at where different transport can be seen Reflection- what can we see	 Talking about which animals can hatch out of eggs. Find out more about the insects we saw (power point about what they eat/ where they like to live) Make observations about the bugs from the visit. Look at the life cycle of a butterfly. Observe different patterns and marking on butterflies. Mini beast lotto game Wild Area visit to look for spider webs Life cycle of a ladybird Wild Area visit link PSED Go on a bug hunt use magnifying glasses bug jars in wild area to look bugs and what they are like/examine bug hotel

			Observing how water makes a		Observe snails in builders tray
			plant grow (cress seeds)		talk about what they need
EYFS - Three and Four-Year-	EYFS - Three and Four-Year-	EYFS - Three and Four-Year-Olds	EYFS - Three and Four-Year-Olds	EYFS - Three and Four-Year-	EYFS - Three and Four-Year-
Olds	Olds	• Talk about what they see	Use all their senses in hands-on	Olds	Olds
. .		• Talk about what they see,			the effets is seen in the second
• Talk about what they see,	 Talk about what they see, 	using a wide vocabulary.	exploration of natural materials.	Use all their senses in hands-on	Use all their senses in hands-
using a wide vocabulary.	using a wide vocabulary.	- Evaloro how things work	• Evaluations of materials	exploration of natural	on exploration of natural
	Fundamentary the second state	 Explore how things work. 	• Explore collections of materials	materials.	materials.
Begin to make sense of	 Explore how things work. 	 Plant seeds and care for 	with similar and/or different		
their own life-story and	 Understand the key features 	growing plants.	properties.	Explore collections of	• Talk about what they see,
family's history.	of the life cycle of a plant and	growing plants.	• Talk about what they see, using a	materials with similar and/or	using a wide vocabulary.
 Begin to understand the 		 Understand the key features of 	• Talk about what they see, using a	different properties.	- Evelove how this so work
-	an animal.	the life cycle of a plant and an	wide vocabulary.	. .	 Explore how things work.
need to respect and care for	 Begin to understand the need 	animal.	• Explore how things work.	• Talk about what they see,	 Plant seeds and care for
the natural environment and	to respect and care for the	annnai.	• Explore now things work.	using a wide vocabulary.	growing plants.
all living things.	natural environment and all	 Begin to understand the need 	 Understand the key features of 	• Explore how things work.	
· Continue developing		to respect and care for the	the life cycle of a plant and an	• Explore now things work.	 Understand the key features
Continue developing	living things.	natural environment and all	animal.	 Explore and talk about 	of the life cycle of a plant and
positive attitudes about the		living things.		different forces they can feel.	an animal.
differences between people.		inving trings.	 Begin to understand the need to 	unrerent forces they can feel.	
 Know that there are 			respect and care for the natural	• Talk about the differences	 Begin to understand the
• Know that there are different countries in the			environment and all living things.	between materials and changes	need to respect and care for
				they notice.	the natural environment and
world and talk about the			 Talk about the differences 	they notice.	all living things.
difference			between materials and changes		
			they notice.		
			,		

Ongoing as part of the provision:

Opportunities to develop curiosity and exploration of how things work. Playing with a variety of materials and textures. Ongoing recognition of plants/animals etc in the natural world. Changes in the seasons, supported by an interactive seasonal display. Opportunities each half term to link activities to the Wild Area.

Key Vocab to be developed

Spider, web, garden, Head, body, arm, leg, eyes, ears, nose, mouth, hands, feet, same, different, "can you find out", birds, tree, nest, beak, wings, feathers, fly, seeds, worms, puffin, owl, blackbird, robin, seagull, animal, dig, swim, fly, fish, food, egg, change, grow, pets, day time, tea time, night time, dog, cat, hamster, guinea pig, tortoise, kennel, hutch, float, sink, real, not real, sharks, hammerhead, whale

shark, goblin shark, tiger shark, variety of shark, fin, gill, teeth, boat, mast, sail, seed, plant, grow, hard, soft, hot, cold, different textures, bear, panda bear, brown bear, polar bear, insects, slug, snail, woodlouse, worm, butterfly, dragonfly, mini beast, shell, antennae,

		Rec	eption		
Aut 1 – Friendship, Can we be friends? Autumn Day- seasonal Learning about our bodies. Making slime/comparing textures Hand washing-monster germs	Aut 2 - Who helps us in Rawthorpe? Healthy bodies. Healthy teeth. Local walk- looking at their own environment	Spr 1 – What's it like far away? Identify animals and naming body parts Comparing animal habitats. Winter seasonal day. Melting/freezing ice Melting chocolate and chocolate kebabs	Spr 2 – Can we save the world? Plants and growing- how and what they need to grow? Naming basic plant parts and observational drawing Spring changes. Observing plant growth. Easter baking	Sum 1 - What did Grandma use to read? Experiments using materials- house building, etc what do we need to build a strong house Life cycles of humans	Sum 2 – What's it like down on the farm? Identify farm animals. What animals live on the farm? Animals and their young. Where does our food come from? Summer seasonal day
Explore the natural world around them. UW REC Describe what they see, hear and feel whilst outside. UW REC Understand the effect of changing seasons on the natural world around them. UW REC	Explore the natural world around them. UW REC Understand that some places are special to members of their community. UW REC Describe what they see, hear and feel whilst outside. UW REC	Explore the natural world around them making observation of plants and animals. UW NW ELG Describe what they see, hear and feel whilst outside. UW REC Recognise some environments that are different to the one in which they live. UW REC	Explore the natural world around them making observation of plants and animals. UW NW ELG Describe what they see, hear and feel whilst outside. UW REC Recognise some environments that are different to the one in which they live. UW REC	Talk about members of their immediate family and community. UW REC Name and describe people who are familiar to them. UW REC	Understand the effect of changing seasons on the natural world around them. UW NW ELG Explore the natural world around them making observation of plants and animals. UW NW ELG Recognise some environments that are
Manage their own basic hygiene and personal need	Manage their own basic hygiene and personal need				different to the one in which they live

0	Autumn 1 erent environments. Spring 1 things that grow. Spring 2	Understand the e changing seasons world around ther changing stages of UW NW ELG	on the natural n. And	Understand the e seasons on the na around them. UW NW ELG	effect of changing		UW NW ELG
<i>Key Vocab to be develop</i> Body, head, leg, head, an flower, roots, summer, w	ed m, sight, smell, taste, hearing, t vinter, spring, autumn, grow, st	rong, weak, stronger, weaker	, human, baby, a	adult, growing, farm	, range of farm animals	ge of polar animals) (range of ju and the names of their young, f al materials (wood/shells/pebble	ood, healthy food, exercise,
				Curriculum	, , , ,		
Topics	Aut 1 – Getting to know me and my world.	Aut 2 – A Toy's Story	Spr 1 – Our A	nimal Adventures	Spr 2 – To infinity a Beyond	and Sum 1 – Ready, Steady Grow	y, Sum 2 – Bright lights, Big city.
	CREST award- Rainbow collectors. Body parts, labelling parts of the body. Five senses and related body parts. Seasonal changes.	CREST award- Music maker CREST award- Speedy scooters Everyday materials, testing different materials for the roof of a lego house. Describing/identifying the properties of materials.	CREST award- Identifying and animals. Comparing ani Looking at the different anim Seasonal chan	mal groups. structures of als.	CREST award- Be see safe. Rocket experiment a investigative experiment/skills. Seasonal changes	bag (Trees).	shadows t. CREST award- Tea bag trouble. Materials of London bridge. Seasonal changes.
Milestones	I can milestones I can identify, draw and label the basic parts of	Seasonal changes I can milestones I can distinguish between an object and the material	I can mileston I can identify a of common an (fish/amphibia	nd name a variety imals	I can milestones I can observe change across the 4 seasons I can observe and	,	

the human body, and	from which it is made.	reptiles/birds and mammals).	describe weather	including deciduous and	materials, including
link to the 5 senses. ML1	ML1	ML1	associated with the	evergreen trees. ML1	wood, metal, plastic,
I can observe changes	I can identify and name a	I can identify and name animals	seasons and how day	I can identify and describe	glass, brick, rock, paper
across the 4 seasons ML1	variety of everyday	that are	length varies.ML1	the basic structure of a	and cardboard for
I can observe and	materials, including wood,	herbivores/carnivores/omnivores		variety of common plants	different uses. ML1
describe weather	plastic, glass, metal,	I can compare the structure of a		or trees, e.g. roots/stem	I can observe changes
associated with the	water, and rock.	variety of common animals. ML1	I can ask simple questions	ML1	across the 4 seasons ML1
seasons and how day	I can describe the simple	I can observe changes across the	and recognise that they	I can observe changes	I can observe and
length varies.ML1	physical properties of a	4 seasons ML1	can be answered in	across the 4 seasons ML1	describe weather
	variety of everyday	I can observe and describe	different ways.	I can observe and	associated with the
I can ask simple	materials. ML1	weather associated with the	I can observe closely	describe weather	seasons and how day
questions and recognise	I can compare and group	seasons and how day length	using simple equipment.	associated with the	length varies.ML1
that they can be	together a variety of	varies.ML1	I can perform simple	seasons and how day	
answered in different	everyday materials on the		tests.	length varies.ML1	
ways.	basis of their simple	I can ask simple questions and			I can ask simple
I can observe closely	physical properties. ML1	recognise that they can be	I can identify and classify.	I can ask simple questions	questions and recognise
using simple equipment.	I can identify and	answered in different ways.		and recognise that they	that they can be
I can perform simple	compare the suitability of	I can observe closely using simple	I can use my own	can be answered in	answered in different
tests.	a variety of everyday	equipment.	observations and ideas to	different ways.	ways.
	materials, including wood,	I can perform simple tests.	suggest answers to	I can observe closely using	I can observe closely
I can identify and	metal, plastic, glass, brick,		questions.	simple equipment.	using simple equipment.
classify.	rock, paper and	I can identify and classify.	I can gather and record	I can perform simple	I can perform simple
	cardboard for different		data to answer questions.	tests.	tests.
l can use my own	uses. ML1	I can use my own observations			
observations and ideas		and ideas to suggest answers to		I can identify and classify.	I can identify and classify.
to suggest answers to	I can observe changes	questions.			
questions.	across the 4 seasons ML1	I can gather and record data to		l can use my own	l can use my own
I can gather and record	I can observe and	answer questions.		observations and ideas to	observations and ideas to
data to answer	describe weather			suggest answers to	suggest answers to
questions.	associated with the			questions.	questions.
	seasons and how day			I can gather and record	I can gather and record
	length varies.ML1			data to answer questions.	data to answer
	I can ask simple questions				questions.
	and recognise that they				
	can be answered in				
	different ways.				
	I can observe closely using				
	simple equipment.				

I can perform simple		
tests.		
I can identify and classify.		
l can use my own		
observations and ideas to		
suggest answers to		
questions.		
I can gather and record		
data to answer questions.		

Key vocabulary to be taught

Leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud, names of trees in the local area, names of garden and wild flowering plants in the local area, Head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves, names of animals experienced first-hand from each vertebrate group, diet, Parts of the body including those linked to PSHE teaching (see joint document produced by the ASE and PSHE association), senses, touch, see, smell, taste, hear, fingers (skin), eyes, nose, ear and tongue, object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see through, not see through, weather (sunny, rainy, windy, snowy etc.), seasons (Winter, Summer, Spring, Autumn), sun, sunrise, sunset, day length, question, answer, predict, test, observe, identify, classify, compare, pattern, data, gather, record, investigate, experiment, Scientists.

		Year Two Curriculum			
Aut 1 – Wonders of the	Aut 2 – London's Burning!	Spr 1 – African Adventure	Spr 2 – Ahoy there!	Sum 1 – Glorious	Sum 2 – Transport
World	Working scientifically	Animals including humans	Living things in their	gardens!	Travelling, trains and
<u>Materials</u>	How does a fire work?	Identify living, non-living and	<u>habitat</u>	<u>Plants</u>	the Titanic!
CREST – Sniffly Sneezes.	CREST star award Muddy	once living.	Notice that animals, including humans, have	Name and identify plants.	Working scientifically
Suitability of materials.	mess	Identify a range of habitats and explain why they are suitable for	offspring which grow into adults.	Conditions for a seed to	How is steam produced?
Testing materials by squashing, twisting,	Develop working scientifically skills through	animals.	Find out about and	grow Life cycle of a plant.	What makes a vehicle start and stop?
bending and stretching.	investigation.	Perform an insect habitat experiment.	describe the basic needs of animals, including	Find out and describe how plants need water,	How do boats float?
Investigate to test suitable materials for a silly scientist		Identify food chains and diets of different animals.	humans, for survival (water, food and air).	light and a suitable temperature to grow and stay healthy.	How do aeroplanes stay in the air?
Investigate materials that are suitable for		Crest star award – starting sounds.	Describe the importance for humans of exercise.	Experiment relating to the needs of a plant.	
keeping ice cold. Used the explorer experiment			Describe the importance for humans of eating the		

	to insulate water bottles		Crest star award – slippery, slidey	right amounts of	Identify plant habitats.	
	(explorers) and used		shoes.	different types of food.	identity plant habitats.	
	thermometers to read		Silves.	unterent types of 1000.	Crest star award –	
	temperature			Describe the importance	Discovery bag.	
	temperature			for humans of eating the	, .	
				right amounts of hygiene.	Super science day	
				Crest star award - Be safe	Speedy Scooters	
				be seen.	Colour mixing overriment	
DA:Lastanas	I can milestones	I can milestones	I can milestones	I can milestones	Colour mixing experiment	l can milestones
Milestones	r can milestones	i can innestones	i can innestories	r can milestones	r can milestones	r can milestones
	I can identify and	I can explore and	I can explore and compare the	I can identify that most	I can identify and describe	I can ask simple
	compare the suitability	compare the differences	differences between things that	living things live in	the basic structure of a	questions and recognise
	of everyday materials	between things that are	are living, dead, and things that	habitats to which they	variety of common plants	that they can be
	ML1	living, dead, and things	have never been alive. ML1	are suited and describe	or trees, e.g. roots/stem	answered in different
	I can make predictions	that have never been	I can identify that most living	how different habitats	I can observe and	ways. ML1
	and perform	alive ML1	things live in habitats to which	provide for the basic	describe how seeds and	Ways. MILL
	comparative tests ML1	I can ask simple questions	they are suited and describe how	needs of different kinds	bulbs grow into mature	I can observe closely
	l can use scientific	and recognise that they	different habitats provide for the	of animals and plants,	plants. ML1	using simple equipment.
	vocabulary ML1	can be answered in	basic needs of different kinds of	and how they depend on		ML1
	I can identify the	different ways.	animals and plants, and how they	each other. ML1	I can find out how plants	IVILI
	seasonal weather	I can observe closely using	depend on each other.		need water, light and a	I can perform simple
	patterns in the UK	simple equipment.	depend on eden other.	I can identify and name a	suitable temperature to	tests. ML1
	patterns in the ok	I can perform simple	I can identify and name a variety	variety of plants and	grow and stay healthy.	
	I can gather and record	tests.	of plants and animals in their	animals in their habitats,	ML1	I can identify and classify.
	data to answer	I can identify and classify.	habitats, including microhabitats	including microhabitats.		ML1
	questions.	I can use my own		ML1		
	4	observations and ideas to	I can describe how animals			l can use my own
		suggest answers to	obtain their food from plants and	I can describe how		observations and ideas to
		questions.	other animals, using the idea of a	animals obtain their food		suggest answers to
		I can gather and record	simple food chain, and identify	from plants and other		questions. ML1
		data to answer questions.	and name different sources of	animals, using the idea of		·
			food.	a simple food chain, and		I can gather and record
		I can identify that most	Lean ack simple questions and	identify and name		data to answer
		living things live in	I can ask simple questions and	different sources of food.		questions. ML1
		habitats to which they are	recognise that they can be	ML1		
		suited and describe how	answered in different ways.			
		different habitats provide				
		for the basic needs of				
L	1	1	l			1

1.00 . 1 . 1		<u> </u>	
different kinds of animals	I can observe closely using simple	1	
and plants, and how they	equipment.	ł.	
depend on each other.		i	
-	I can perform simple tests.	i	
I can identify and name a		ł	
variety of plants and	I can identify and classify.	i	
animals in their habitats,		i i	
	I can use my own observations	1	
including microhabitats.	and ideas to suggest answers to	Í	
	questions.	1	
I can describe how		1	
animals obtain their food	I can gather and record data to	1	
from plants and other	answer questions.	i i	
animals, using the idea of		i	
a simple food chain, and		i	
identify and name		i i	
different sources of food.		l	

Key vocabulary to be taught

Living, dead, never been alive, suited, suitable, basic needs, food, food chain, shelter, move, feed, names of local habitats e.g. pond, woodland etc., names of micro-habitats e.g. under logs, in bushes etc, light, Leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud, names of trees in the local area, names of garden and wild flowering plants in the local area, shade, sun, warm, cool, water, grow, healthy, Offspring, reproduction, growth, child, young/old stages (examples - chick/hen, baby/child/adult, caterpillar/butterfly), exercise, heartbeat, breathing, hygiene, germs, disease, food types (examples – meat, fish, vegetables, bread, rice, pasta), Names of materials – *increased range from year 1, properties of materials - as for year 1 plus* opaque, transparent and translucent, reflective, non-reflective, flexible, rigid, Shape, push/pushing, pull/puling, twist/twisting, squash/squashing. Bend/bending, stretch/stretching, question, answer, predict, test, observe, identify, classify, compare,

pattern, data, gather, record,

Local links/Inspiration /Enrichment activities

Nursery – owl visit, pets at home visit, meet a creature visit- bugs and beatles, ugly bug ball

Reception - Visit to the farm, seasonal days, Penguin day- to launch blue penguin -ice experiments, tiger day, visit to cliffe house, growing day,

Year 1- Animal visit, Eureka trip, trip to manor heath park gardens,

Year 2-Walk to Tolson gardens

Key Stage 1 Statements taken from National Curriculum –(Statutory Requirements)

Pupils should be taught about:

Working Scientifically KS1

- asking simple questions and recognising that they can be answered in different ways
- observing closely, using simple equipment
- performing simple tests
- identifying and classifying

- using their observations and ideas to suggest answers to questions
- gathering and recording data to help in answering questions

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
- 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
- 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.
- observe changes across the four seasons
- observe and describe weather associated with the seasons and how day length varies.

Year 2

- 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 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.
- 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.
- 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.
- 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.

Statements taken from National Curriculum – Spoken Language (Literacy) (Statutory Requirements)

Pupils should be taught to:

- Listen and respond appropriately to adults and their peers
- Ask relevant questions to extend their understanding and knowledge
- Use relevant strategies to build their vocabulary
- Articulate and justify answers, arguments and opinions
- Give well-structured descriptions, explanations and narratives for different purposes, including for expressing feelings
- Maintain attention and participate actively in collaborative conversations, staying on topic and initiating and responding to comments
- Participate in discussions, presentations, performances, role play, improvisations and
- debates
- Consider and evaluate different viewpoints, attending to and building on the contributions of others

Impact of the Science Curriculum

Through working through our Science curriculum pupils will have a developed understanding of the world around them and be able to comment on scientific aspects such as how the world works. Children will build on the scientific foundations set in nursery throughout their time at Rawthorpe Infant School. By the end of Year 2 they will become increasingly independent in science, selecting their own tools and materials, completing pupil lead investigations and choosing their own strategies for recording. Children will make good progress in Science after following our high quality curriculum which has clear steps showing progression.

Pupils will have gained a wide range of scientific vocabulary and be able to use this while giving scientific explanations. Pupils will also have develop their questioning and enquiry skills and use these when exploring the wider world. Our Science curriculum will enable children to develop a love for learning Science and continue their scientific journey throughout their lives.

In addition, we will measure the impact of our curriculum through the following methods:

- Regularly assessed pieces of work, using the milestones documents.
- Opportunities for the children to look back at their own learning within their CLICK books to show their understanding.
- Pupil voice discussions with senior leadership to allow children to express their learning and experiences.
- -Termly tracking on internal target tracker system.