## Fazakerley Primary School Formosa Drive, Liverpool, L10 7LD

## Science Progression Document

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	Working scientifically	Working scientifically	Working Scientifically	
EYFS	3 – 4 years	Reception year	ELG	
Communication and Language	Use a wider range of vocabulary Understand why questions Be able to express a point of view	Use new vocabulary Ask questions to find out more and to check they understand Articulate their ideas and thoughts into well-formed sentences Describe events in some detail Use talk to organise thinking and explain how things work and why they might happen	Listening Attention and Understanding Listen attentively and respond with relevant questions, comments Make comments about what they have heard and ask questions to clarify their understanding Speaking Participate in small group, class and 1-1 discussions offering their own ideas, using recently introduced vocabulary. Offer explanations for why things might happen, using recently introduced vocabulary. Express their ideas and feelings about their experiences using full sentences.	azakerley imary School
Physical Development	Make healthy choices about food, drink, activity and toothbrushing.	Know and talk about the different factors that support their overall health and wellbeing -regular physical activity -healthy eating -toothbrushing -sensible amounts of "screen time" -having a good sleep routine		
Understanding the World	Use all of their senses in hand-on exploration of natural materials. Explore collections of materials with similar and/or different properties Talk about what they see using a wide range of vocabulary	Explore the natural world around them. Describe what they see, hear and feel while they are outside. Recognise some environments that are different to the one in which they live. Understand the effect of changing	The Natural World Explore the natural world around them, making observations and drawing pictures of animals and plants. Know some similarities and differences between the natural world around them and contrasting	

	Explain how things work Plant seeds and care for growing plants Understand the key features of the lifecycle of a plant and an animal Begin to understand the nee to respect and care for the natural environment and all living things Explore and talk about different sources they can feel Talk about the differences between materials and changes they notice	seasons on the natural world around them. d	environments, drawing or experiences and what has in class. Understand some importa processes and changes in world around them, includ seasons and changing stat matter.	n their been read ant the natural ding the tes of	cerley	nether
	Knowledge progression. By	Working Scientifically	Working Scientifically	Working Scientifically	Working Scientifically	
Year 1	the end of year 1 children	Plan	DO	Record	Review	
	will know.					
	Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.	Begin asking simple questions and recognising that they can be answered in different ways.	Observe closely, using simple equipment. Identify and classify.	Gather and recording data to help in answering questions. begin record appropriately using	Use their observations and ideas to suggest answers to questions.	-
Plants	Identify and describe the basic structure of a variety of common flowering plants, including trees.	ask questions designed to help place things in groups based on similar observable or behavioural features	begin to make comparisons to group similar things /organisms together	tables, sorting circles and simple Venn diagrams to help distinguish sets of similar things/organisms	can identify which group an additional object / organism should be placed in	
		With support recognise they will need to make observations/ measurements over a longer time	begin classify things into two groups so that one group containing things/organisms that have an observable feature the other doesn't	begin to draw pictures/take photos/write simple sentences/complete simple charts such as sequential picture charts	describe how things/organisms have been sorted describe /sequence simple	
		Begin to suggest how to collect the identified data needed	observe or measure changes using simple measuring equipment in uniform non-standard units (e.g. straws)	make practical graphs (e.g. using ribbon to show the height of a sunflower each week)	changes	
Animals	Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals (including pets).	Begin asking simple questions and recognising that they can be answered in different ways.	Observe closely, using simple equipment. Identify and classify.	Gather and recording data to help in answering questions. begin record appropriately using	Use their observations and ideas to suggest answers to questions.	
		ask questions designed to help		tables, sorting circles and simple	can identify which group an	

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including humans	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 part of the body is associated	place things in groups based on similar observable or behavioural features	begin to make comparisons to group similar things /organisms together begin classify things into two groups so that one group containing things/organisms that have an observable feature the other doesn't	Venn diagrams to help distinguish sets of similar things/organisms	additional object / organism should be placed in describe how things/organisms have been sorted
Everyday materials	Distinguish between an object and the material from which it is made. Compare and group together a variety of everyday materials on the basis of their simple physical properties. Describe the simple physical properties of a variety of everyday materials. Identify and compare the uses of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.	Begin asking simple questions and recognising that they can be answered in different ways. ask questions designed to help place things in groups based on similar observable or behavioural features begin to recognise when a simple comparison/test is unfair with support suggest how to collect the identified data needed begin to make a simple prediction when appropriate (based on something similar they have observed previously	Observe closely, using simple equipment. Perform simple tests. Identify and classify. begin to make comparisons to group similar things /organisms together begin classifying things into two groups so that one group containing things/organisms that have an observable feature the other doesn't measure using simple measuring equipment in uniform non-standard units (e.g. straws	Gather and recording data to help in answering questions. begin record appropriately using tables, sorting circles and simple Venn diagrams to help distinguish sets of similar things/organisms draw pictures/take photos/write simple sentences/complete simple charts such as two column tables	Use their observations and ideas to suggest answers to questions. can identify which group an additional object / organism should be placed in describe how things/organisms have been sorted describe observations/data say what they have found out if initially predicted say whether what happened was what was expected
Seasonal changes	Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies.	Begin asking simple questions and recognising that they can be answered in different ways. With support recognise they will need to make observations/ measurements over a longer time Begin to suggest how to collect the identified data needed	Observe closely, using simple equipment. observe or measure changes using simple measuring equipment in uniform non-standard units (e.g. straws)	Gather and recording data to help in answering questions. begin record appropriately using tables, sorting circles and simple Venn diagrams to help distinguish sets of similar things/organisms begin to draw pictures/take photos/write simple	Use their observations and ideas to suggest answers to questions. describe /sequence simple changes

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	when approp something si observed)ma prediction a over time	riate (based on nilar they have ke a simple bout what will change	Ach	sentences/complete simple charts such as sequential picture charts make practical graphs (e.g. using ribbon to show the height of a sunflower each week)	
Knowledge progression. E	By the end of	Working Scientifically	Working Scientifically	Working Scientifically	Working Scientifically

	Knowledge progression. By the end of	Working Scientifically	Working Scientifically	Working Scientifically	Working Scientifically
Year 2	year 2 children will know.	Plan	Do	Record C	Review
Living things in their habitats	<ul> <li>Explore and compare the differences between things that are living, dead, and things that have never been alive.</li> <li>Identify and name a variety of plants and animals in their habitats, including micro-habitats.</li> <li>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.</li> <li>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.</li> </ul>	Asking simple questions and recognising that they can be answered in different ways. ask questions designed to help place things in groups based on similar observable or behavioural features	Observe closely, using simple equipment. Identify and classify. make comparisons to group similar things /organisms together classify things into two groups so that one group containing things/organisms that have an observable feature the other doesn't	Gather and recording data to help in answering questions. record appropriately using tables, sorting circles and simple Venn diagrams to help distinguish sets of similar things/organisms	Use their observations and ideas to suggest answers to questions. can identify which group an additional object / organism should be placed in describe how things/organisms have been sorted describe observations/data say what they have found out
Plants	Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. Observe and describe how seeds and bulbs grow into mature plants.	Asking simple questions and recognising that they can be answered in different ways. recognise they will need to make observations/ measurements over a longer time suggest how to collect the identified data needed	Observe closely, using simple equipment. Perform simple tests. Identify and classify. observe or measure changes using simple measuring equipment in uniform non- standard units (e.g. straws) or	Gather and recording data to help in answering questions. record appropriately using tables, sorting circles and simple Venn diagrams to help distinguish sets of similar things/organisms draw pictures/take photos/write simple	Use their observations and ideas to suggest answers to questions. describe /sequence simple changes if initially predicted say whether the change was what was expected

		when appropriate (based on something similar they have observed) make a simple	simple standard units (Y2) such as metre sticks, kg masses, L jugs and second timers	sentences/complete simple charts such as sequential picture charts	describe observations/data say what they have found out	1
		prediction	read scale to the nearest labelled division (Y2)	make practical graphs (e.g. using ribbon to show the height of a sunflower each	describe simple patterns	er
		comparison/test is unfair		week)		
		the appropriate inquiry between fair test and pattern seeking		scale (Y2)		)
Animala	Notice that animals, including humans, have offspring which grow into adults.	Asking simple questions and recognising that they can be answered in different ways.	Observe closely, using simple equipment.	Gather and recording data to help in answering questions.	Use their observations and ideas to suggest answers to questions.	
including	including humans, for survival (water, food, air).	ask questions designed to help	Identify and classify.	tables, sorting circles and	can identify which group an	
humans	Describe the importance for humans of exercise, eating the right amounts of different types of food, and	place things in groups based on similar observable or behavioural features	make comparisons to group similar things /organisms together	simple Venn diagrams to help distinguish sets of similar things/organisms	additional object / organism should be placed in	
	hygiene.		classify things into two groups		describe how things/organisms have been	
			so that one group containing things/organisms that have an		sorted describe observations/data	
			observable feature the other doesn't		say what they have found out	
Uses of evervday	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular	Asking simple questions and recognising that they can be answered in different ways.	Observe closely, using simple equipment.	Gather and recording data to help in answering questions.	Use their observations and ideas to suggest answers to questions.	
materials	4363.	ask questions designed to help	renormanipie tests.	tables, sorting circles and	can identify which group an	
	Find out how the shapes of solid objects made from	place things in groups based on similar observable or	Identify and classify.	simple Venn diagrams to help	additional object / organism	
	twisting and stretching.	behavioural features	make comparisons to group	things/organisms	describe how	
		recognise they will need to make observations/	together	draw pictures/take photos/write simple	things/organisms have been sorted	
		time	so that one group containing	charts such as two column	if initially predicted say	
		suggest how to collect the	observable feature the other		was expected	

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identified data needed	doesn't	make practical block graphs	
		(e.g. using Lego)/pictograms	describe observations/data
recognise when a simple	observe or measure changes	with a 1:1 scale	
comparison/test is unfair	using simple measuring		say what they have found out
	equipment in uniform non-	-draw a block graph with a 1:1	
make a simple prediction when	standard units (e.g. straws) or	scale (Y2)	describe simple patterns
appropriate (based on	simple standard units (Y2)		
something similar they have	such as metre sticks, kg		
observed previously	masses, L jugs and second		
	timers		
With support begin to choose			
the appropriate inquiry between	read scale to the nearest		
fair test and pattern seeking	labelled division (Y2)		
		6030	

	Knowledge progression.	Working Scientifically	Working Scientifically	Working Scientifically	Working Scientifically
Year 3	By the end of year 3	Plan	Do	Record	Review
	children will know.			Dation	Cohool
	Identify and describe the	Ask relevant questions and use different	Set up (and carry out ) simple	Gather, record, classify and	Report on findings from enquiries,
	functions of different parts of	types of scientific enquiries to answer	practical enquiries, comparative	present data in a variety of	include oral and written explanations,
Plants	flowering plants: roots, stem/trunk leaves and flowers.	them.	and fair tests.	ways to help in answering questions.	displays or presentations of results and conclusions.
			Make systematic and careful		
	Explore the requirements of	Begin to suggest ways of making the test	observations and, where	Record findings using	Use straightforward scientific evidence
	plants for life and growth (air,	fairer	appropriate, taking accurate	simple scientific language,	to answer questions or to support their
	light, water, nutrients from soil,		measurements using standard	drawings, labelled	findings.
	and room to grow) and how they	Begin to suggest data needing to be	units, using a range of	diagrams, keys, bar charts,	
	vary from plant to plant.	collected	equipment, including	and tables.	Use results to draw simple conclusions
		France colortion, begin to identify what	thermometers and data loggers.		and raise further questions.
	investigate the way in which	From a selection, begin to identify what	Design to use simple standard	Degin to choose an	Design to describe alternative (improved
	water is transported within	equipment is needed	mossures im cm mm kg g cm <sup>2</sup>	Begin to choose an	Begin to describe alternative/ improved
		make predictions	minutes seconds Newton	results including choosing a	ways to solit /group/classify
	Explore the role of flowers in the	based on everyday experiences and	measuring to the nearest half	two column table	Begin to notice links/patterns between
	life cycle of flowering plants.	knowledge	unit		two sets of data
	including pollination, seed			Begin to draw bar charts	
	formation and seed dispersal.	decide to answer a question by	Begin to read scales to the	with simple scales e.g. 1:2,	say whether the changes were what was
		observing/measuring changes over a	nearest division even when	1:5, 1:10, 1:100	expected explain any differences
		longer period of time	unlabelled		
				Begin to make simple	
		Begin to suggest how long to make		branching data	
		periodic observations or take		bases/classification keys for	
		measurements for		a limited number of things	

		Begin to identify the right type of inquiry between fair test and pattern seeking		(maximum 6) with easily observable differences	
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. Identify that humans and some other animals have skeletons and muscles for support, protection and movement.	Ask relevant questions and use different types of scientific enquiries to answer them. ask questions relating to how things/ organisms should be grouped, what things/organisms are and if there are similar things/ organisms	Make systematic and careful observations and , where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. use results of simple tests to sort and group things by how they behave.	Gather, record, classify and present data in a variety of ways to help in answering questions. Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Begin to use Carroll and Venn diagrams to help sort and record groupings Begin to make simple branching data bases/classification keys for a limited number of things (maximum 6) with easily observable differences choose an appropriate way to record results including a table	Report on findings from enquiries, include oral and written explanations, displays or presentations of results and conclusions. Use straightforward scientific evidence to answer questions or to support their findings. Use results to draw simple conclusions and raise further questions. Begin to describe alternative/ improved ways to sort /group/classify Begin to notice links/patterns between two sets of data say whether the changes were what was expected explain any differences
Rocks	Compare and group together different kinds of rocks on the basis of their simple physical properties. Recognise that soils are made	Ask relevant questions and use different types of scientific enquiries to answer them. ask questions relating to how things/ organisms should be grouped, what	Set up (and carry out ) simple practical enquiries, comparative and fair tests. Make systematic and careful observations and, where appropriate, taking accurate	Gather, record, classify and present data in a variety of ways to help in answering questions. Record findings using simple scientific language,	Report on findings from enquiries, include oral and written explanations, displays or presentations of results and conclusions. Use straightforward scientific evidence to answer questions or to support their

	Describe in simple terms how	similar things/ organisms	units, using a range of	diagrams, keys, bar charts,	Lice results to draw simple conclusions
	fossils are formed when things	when appropriate (based on something	thermometers and data loggers	and tables.	and raise further questions
	that have lived are trapped	similar they have observed) make a	thermometers and data loggers.		and raise further questions.
	within rock	similar they have observed, make a		Begin to use Carroll and	Begin to describe alternative/improved
	Within Fock.	nattern	use results of simple tests to sort	Venn diagrams to help sort	ways to sort /group/classify
		pattern	and group things by how they	and record groupings	
			behave		
		recognise they are looking for a pattern		Begin to make simple	Begin to explain differences between
				branching data	what has been observed. Were changes
		decide to answer a question by		bases/classification keys for	what was expected?
		observing/measuring changes over a		a limited number of things	
		longer period of time		(maximum 6) with easily	Begin to notice links/patterns between
				observable differences	two sets of data
		Begin to suggest how long to make			AKAMAN
		periodic observations or take		choose an appropriate way	say whether the changes were what was
		measurements for		to record results including a	expected explain any differences
				table	
	Compare how things move on	Ask relevant questions and use different	Set up (and carry out ) simple	Gather, record, classify and	Report on findings from enquiries,
Forces	different surfaces.	types of scientific enquiries to answer	practical enquiries, comparative	present data in a variety of	include oral and written explanations,
and		them.	and fair tests.	ways to help in answering	displays or presentations of results and
	Notice that some forces need			questions.	conclusions.
magnets	contact between two objects, but	Design to suggest ways of making the test	Make systematic and careful	Decoud findings using	Lies studightforward scientific suidenes
	magnetic forces act at a distance.	fairor	observations and, where	simple scientific language	to answer questions or to support their
	Observe how magnets attract or	Begin to suggest data needing to be	measurements using standard	drawings labelled	findings
	repel each other and attract	collected	units, using a range of	diagrams, keys, bar charts.	
	some materials and not others.		equipment, including	and tables.	Use results to draw simple conclusions
		From a selection, begin to identify what	thermometers and data loggers.		and raise further questions.
	Compare and group together a	equipment is needed			•
	variety of everyday materials on			Begin to choose an	Begin to identify differences, similarities
	the basis of whether they are	make predictions based on everyday	Begin to use simple standard	appropriate way to record	or changes related to simple scientific
	attracted to a magnet and	experiences and knowledge	measures: m, cm, mm, kg, g, cm3,	results including choosing a	ideas and processes.
	identify some magnetic		minutes, seconds, Newton	two-column table	
	materials.	decide to answer a question by	measuring to the nearest half		Begin to describe alternative/ improved
		observing/measuring changes over a	unit	Begin to draw bar charts	ways to sort /group/classify
	Describe magnets as having two	longer period of time		with simple scales e.g. 1:2,	
	poles.		Begin to read scales to the	1:5, 1:10, 1:100	
		Begin to suggest how long to make	nearest division even when		Begin to notice links/patterns between
	Predict whether two magnets will	periodic observations or take	unlabelled	Begin to use Carroll and	two sets of data
	attract or repel each other,	measurements for		venn diagrams to help sort	
	depending on which poles are		use results of simple tests to sort	and record groupings	Designed available differences between
	tacing.	Begin to identify the right type of inquiry	and group things by how they		Begin to explain differences between

		between fair test and pattern seeking	behave	N X	what has been observed.
				5	say whether the changes were what was expected explain any differences
	Recognise that they need light in	Ask relevant questions and use different	Set up (and carry out ) simple	Gather, record, classify and	Report on findings from enquiries,
Light	order to see things and that dark is the absence of light.	types of scientific enquiries to answer them.	practical enquiries, comparative and fair tests.	present data in a variety of ways to help in answering	include oral and written explanations, displays or presentations of results and
	Notice that light is reflected from		Make systematic and careful	questions.	conclusions.
	surfaces.	Begin to suggest ways of making the test	observations and, where	Record findings using	Use straightforward scientific evidence
	Recognise that shadows are	Tairer	measurements using standard	drawings, labelled	findings.
	formed when a light source is	Begin to suggest data needing to be	units, using a range of	diagrams, keys, bar charts,	
	blocked by a solid object.	collected	equipment, including thermometers and data loggers.	and tables.	Use results to draw simple conclusions and raise further questions.
	Find patterns in the way that the	From a selection, begin to identify what		I 44	arciicy
	size of shadows changes.	equipment is needed	Desire to successful at a should and	Begin to choose an	Begin to identify differences, similarities
	Recognise that light from the Sun	make predictions based on everyday	measures: m cm mm kg g cm3	appropriate way to record results including choosing a	or changes related to simple scientific
	can be dangerous and that there	experiences and knowledge	minutes, seconds, Newton	two-column table	ary School
	are ways to protect our eyes.	decide to answer a question by	measuring to the nearest half	Bogin to draw bar charts	Pagin to describe alternative (improved
		observing/measuring changes over a	unit	with simple scales e.g. 1:2,	ways to sort /group/classify
		longer period of time	Begin to read scales to the	1:5, 1:10, 1:100	
		Design to suggest how long to make	nearest division even when		Pagin to ovalgin differences between
		periodic observations or take	uniabelied		what has been observed.
		measurements for	use results of simple tests to sort		
			and group things by how they		say whether the changes were what was
		begin to identify the right type of inquiry between fair test and pattern seeking	benave		expected explain any differences
					Begin to notice links/patterns between
					two sets of data

Year 4	Knowledge progression. By the end of year 4	Working Scientifically <i>Plan</i>	Working Scientifically	Working Scientifically <i>Record</i>	Working Scientifically <i>Review</i>
	children will know.		Do		
Animals	Describe the simple functions of the basic parts of the digestive	Ask relevant questions and use	Make systematic and careful observations	Gather, record, classify and present data	Report on findings from enquiries, include
including	system in humans.	enquiries to answer them.	and, where appropriate,	questions.	presentations of results and conclusions.

humans	Identify the different types of teeth in humans and their simple functions. Construct and interpret a variety of food chains, identifying producers, predators and prey.	ask questions relating to how things/ organisms should be grouped, what things/organisms are and if there are similar things/ organisms decide to answer a question by observing/measuring changes over a longer period of time suggest how long to make periodic observations or take measurements for	taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. use results of simple tests to sort and group things by how they behave	Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. use Carroll and Venn diagrams to help sort and record groupings make simple branching data bases/classification keys for a limited number of things (maximum 6) with easily observable differences choose an appropriate way to record results including a table draw bar charts and line graphs (Y4) with simple scales e.g. 1:2, 1:5, 1:10, 1:100	Identify differences, similarities or changes related to simple scientific ideas and processes. Use straightforward scientific evidence to answer questions or to support their findings. say whether the changes were what was expected explain any differences describe alternative/ improved ways to sort /group/classify use simple classification keys/branching data bases to identify unknown items that have easily observable differences in their features
Living things and their	Recognise that living things can be grouped in a variety of ways. Explore and use classification keys to bein group, identify and	Ask relevant questions and use different types of scientific enquiries to answer them.	Make systematic and careful observations and , where appropriate, taking accurate measurements using	Gather, record, classify and present data in a variety of ways to help in answering questions.	Report on findings from enquiries, include oral and written explanations, displays or presentations of results and conclusions.
Παριτατε	name a variety of living things in their local and wider environment. Recognise that environments	collected, Make predictions based on everyday experiences/Knowledge including likely patterns))	standard units, using a range of equipment, including thermometers and data loggers.	language, drawings, labelled diagrams, keys, bar charts, and tables. use Carroll and Venn diagrams to help sort and record groupings	related to simple scientific ideas and processes. Use straightforward scientific evidence to answer questions or to support their findings
	and that this can sometimes pose dangers to specific habitats.	ask questions relating to how things/ organisms should be grouped, what things/organisms are and if there are similar things/ organisms	tests to sort and group things by how they behave	bases/classification keys for a limited number of things (maximum 6) with easily observable differences choose an appropriate way to record	say whether the changes were what was expected explain any differences describe alternative/ improved ways to sort
		decide to answer a question by observing/measuring changes over a longer period of time make prediction about a likely observable change based on everyday experiences and knowledge		results including a table draw bar charts and line graphs (Y4) with simple scales e.g. 1:2, 1:5, 1:10, 1:100	/group/classify use simple classification keys/branching data bases to identify unknown items that have easily observable differences in their features

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States of	Compare and group materials	Ask relevant questions and use	Set up (and carry out )	Gather, record, classify and present data	Report on findings from enquiries, include
matter	they are solids, liquids or gases.	enquiries to answer them.	enquiries, comparative and fair tests.	questions.	presentations of results and conclusions.
	Observe that some materials change state when they are heated or cooled, and measure	fairer	Make systematic and careful observations	Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.	Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.
	or research the temperature at which this happens in degrees Celsius (°C).	suggest data needing to be collected	and, where appropriate, taking accurate measurements using	use Carroll and Venn diagrams to help sort and record groupings	Identify differences, similarities or changes related to simple scientific ideas and
	Identify the part played by evaporation and condensation	from a selection identify what equipment is needed	standard units, using a range of equipment, including thermometers	make simple branching data bases/classification keys for a limited	processes. Use straightforward scientific evidence to
	in the water cycle and associate the rate of evaporation with temperature.	make predictions based on everyday experiences and knowledge	and data loggers. use results of simple tests to sort and group	number of things (maximum 6) with easily observable differences	answer questions or to support their findings.
		decide to answer a question by observing/measuring changes over a longer period of time	things by how they behave (e.g. waterproof or not)	choose an appropriate way to record results including a table	notice links between two sets of data and suggest ways the test could be improved
		suggest how long to make periodic observations or take measurements for	use simple standard measures: m, cm, mm,	draw bar charts, scatter graphs and line graphs (Y4) with simple scales e.g. 1:2, 1:5, 1:10, 1:100	say whether the changes were what was expected explain any differences
		make prediction about a likely observable change based on everyday experiences and knowledge	kg, g, cm3, minutes, seconds, Newton measuring to the nearest half unit		suggest ways the test could be improved
		Identify the correct type of enquiry between fair test and pattern seeking	read scales to the nearest division even when unlabelled		
Electricity	Identify common appliances that run on electricity	Ask relevant questions and use different types of scientific	Set up (and carry out ) simple practical	Gather, record, classify and present data in a variety of ways to help in answering	Report on findings from enquiries, include oral and written explanations, displays or

	Construct a simple series electrical circuit identifying and naming the basic parts of a	enquiries to answer them. suggest ways of making the test fairer	enquiries, comparative and fair tests.	questions.	presentations of results and conclusions. Use results to draw simple conclusions, make	
	simple electrical circuit, including cells, wires, bulbs, switches and buzzers. Identify whether or not a lamp will light in a simple series circuit	suggest data needing to be collected from a selection identify what	Make systematic and careful observations and , where appropriate, taking accurate measurements using	language, drawings, labelled diagrams, keys, bar charts, and tables. choose an appropriate way to record	predictions for new values, suggest improvements and raise further questions. Identify differences, similarities or changes related to simple scientific ideas and	
	based on whether or not the lamp is part of a complete loop with a battery. Recognise that a switch opens	equipment is needed make predictions based on everyday experiences and knowledge (This includes	standard units, using a range of equipment, including thermometers and data loggers.	results including a table draw bar charts, scatter graphs and line graphs (Y4) with simple scales e.g. 1:2, 1:5, 1:10, 1:100	processes. Use straightforward scientific evidence to answer questions or to support their findings.	
	and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.	making predictions about likely patterns) decide to answer a question by observing/measuring changes	use results of simple tests to sort and group things by how they behave (e.g. waterproof or not)		notice links between cause and effect notice links/patterns between two sets of data and suggest ways the test could be	
	conductors and insulators, and associate metals with being good conductor.	suggest how long to make periodic observations or take measurements for	use simple standard measures: m, cm, mm, kg, g, cm3, minutes, seconds, Newton measuring to the pearest		say whether the changes were what was expected explain any differences	
		Identify the correct type of enquiry between fair test and pattern seeking	half unit read scales to the nearest division even when unlabelled			
Sound	Identify how sounds are made, associating some of them with something vibrating.	Ask relevant questions and use different types of scientific enquiries to answer them.	Set up (and carry out ) simple practical enquiries, comparative and fair tests.	Gather, record, classify and present data in a variety of ways to help in answering questions.	Report on findings from enquiries, include oral and written explanations, displays or presentations of results and conclusions.	
	Recognise that vibrations from sound travel through a medium to the ear.	suggest ways of making the test fairer suggest data needing to be collected	Make systematic and careful observations and, where appropriate,	Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.	Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.	
	Recognise that sounds get fainter as the distance from the sound source increases.	from a selection identify what equipment is needed	taking accurate measurements using standard units, using a range of equipment,	choose an appropriate way to record results including a table draw bar charts, scatter graphs and line	Identify differences, similarities or changes related to simple scientific ideas and processes.	
	Find patterns between the pitch	make predictions based on	including thermometers	graphs (14) with simple scales e.g. 1.2,	use straightforward scientific evidence (0	

					100		
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of a sou	und and features of the	everyday experiences and	and data loggers.	1:5, 1:10, 1:100		answer questions or to support their	
object t	that produced it.	knowledge (this includes making				findings.	
		predictions about likely	use results of simple				
Find pa	atterns between the	patterns)	tests to sort and group			notice links between cause and effect	
volume	e of a sound and the		things by how they				
strengt	th of the vibrations that	decide to answer a question by	behave (e.g. waterproof			notice links between two sets of data and	
produce	ed it.	observing/measuring changes	or not)			suggest ways the test could be improved	
		over a longer period of time					
			use simple standard			say whether the changes were what was	
		suggest how long to make	measures: m, cm, mm,			expected explain any differences	
		periodic observations or take	kg, g, cm3, minutes,				
		measurements for	seconds, Newton			suggest ways the test could be improved	
			measuring to the nearest				
		Identify the correct type of	half unit			201001011	
		enquiry between fair test and					
		pattern seeking	read scales to the				
			nearest division even	_			
			when unlabelled			Cabaal	
					- r i / i	ISTV NUMM	

	Knowledge progression. By	Working Scientifically	Working Scientifically	Working	Working Scientifically
Year 5	the end of year 5 children	Plan	Do	Scientifically	Review
	will know.			Record	
Animals	Describe the changes as humans	Plan different types of	Take measurements, using a	Record data and results	Report and present findings from enquiries,
including	develop to old age.	scientific enquiries to answer	range of scientific equipment,	of increasing complexity	including conclusions, in oral and written forms
humans		questions.	precision.	and labels, classification	such as displays and other presentations.
		know why an	P	keys and tables.	Identify scientific evidence that has been used to
		observation/measurement	Explore the work of scientists		support or refute ideas or arguments.
		over time is appropriate to	and scientific research	record data accurately	use graphs when spotting and interpreting how
				including in tables	things change
		Predict based on scientific			5 5
		knowledge		choose the appropriate	recognise the effect of sample size on reliability
				type of graph if necessary	explain the relationship between two sets of data
					explain the relationship between two sets of data
Living	Describe the difference in the life	Plan different types of	Take measurements, using a	Record data and results	Report and present findings from enquiries,

things	cycles of a mammal, an amphibian an	scientific enquiries to answer	range of scientific equipment,	of increasing complexity	including conclusions, in oral and written forms
and their	insect and a bird.	questions.	with increasing accuracy and	using scientific diagrams	such as displays and other presentations.
habitats	Describe the life process of	plan ta usa an idantification	precision.	and labels, classification	Identify estantific suidenes that has been used to
nabitats	reproduction in some plants and	key to identify an unknown	use identification keys to	Reys and tables.	support or refute ideas or arguments
	animals.	organism	identify unknown organisms	make own keys and	support of refute fueds of arguments.
		0.80.000		branching data bases	explain that sorting/grouping/classifying is very
		plan what to test and how to	select appropriate measuring		useful to help predict where things/ organisms
		test and what evidence to	equipment allowing for accurate	record data accurately	belong and how they will behave
		collect in order to classify	measurement	and appropriately	
				including in tables	evaluate how well keys work and suggest
		predict which phylum	use standard measures		changes/improvements
		(mammal, bird, reptile,	including fractions, decimals and	choose the appropriate	
		amphibian, fish) a vertebrate	mixed units	type of graph if necessary	Confirm or reject initial predictions around the
		belongs in from initial	road cooles with provision and		phylum a vertebrate belongs in based on more
		observation			detailed observations
		know why an	accuracy		use graphs when spotting and interpreting how
		observation/measurement	use a variety of tests/pieces of	Dei Dei	things change
		over time is appropriate to	evidence to identify and classify		
		answer the question	materials /organisms		recognise the effect of sample size on reliability
					explain the relationship between two sets of data
Properties	Compare and group together	Plan different types of	Take measurements, using a	Record data and results	Report and present findings from enquiries,
and	everyday materials based on evidence	scientific enquiries to answer	range of scientific equipment,	of increasing complexity	including conclusions, causal relationships and
changes	from comparative and fair tests,	questions, including	with increasing accuracy and	using scientific diagrams	explanations results, explanations of and degree of
-f	transparency, conductivity (electrical	variables where possessing	precision, taking repeat	graphs bar and line	displays and other presentations
OT .	and thermal), and response to	variables where hecessary.		graphs.	מושאימאיש מווע טווכו אובשבוונמנוטווש.
materials	magnets.	Use test results to make	select appropriate measuring	Biobila	Identify scientific evidence that has been used to
		predictions to set up further	equipment allowing for accurate	record data accurately	support or refute ideas or arguments.
	Know that some materials will	comparative and fair tests.	measurement	and appropriately	
	dissolve in liquid to form a solution		Begin to use standard measures	including tables allowing	use graphs when spotting and interpreting trends
	and describe how to recover a	know why an	including fractions, decimals and	for repeat readings and	and patterns
	substance from a solution.	observation/measurement	mixed units	averages	
		over time is appropriate to			offer explanations for differences in repeat readings
	Use knowledge of solids, liquids and	answer the question	read scales with precision and	choose the appropriate	
	gases to decide how mixtures might		accuracy	type of graph	use graphs when spotting and interpreting how
	be separated, including through	choose the to carry out a fair		draw har and line grants	tnings change
	intering, sleving and evaporating.	test when appropriate		with complex scales	explain the effect of changing the time and/or
	Give reasons based on evidence from	list all the equinment needed		nossibly involving	number of observations /measurements
L	Sive reasons, based on evidence nom	ist all the equipment needed		Possibly involving	number of observations / measurements

	comparative and fair tests, for the	decide what and how much		fractions or decimal e.g.	suggest improvements in experimental method
	including metals, wood and plastic.	data to collect		1.2 /2 01 1.1.5	suggest improvements in experimental method
					recognise the effect of sample size on reliability
	Demonstrate that dissolving, mixing	understand why variables			
	and changes of state are reversible	can't be controlled and			explain the relationship between two sets of data
	cnanges.	suggest using a pattern			
	Explain that some changes result in	seeking enquiry			
	the formation of new materials, and	decide types and large			
	that this kind of change is not usually	amount of data needed to be			
	reversible, include changes associated	collected to ensure a			
	with burning and the action of acid on	reasonable sample size			
		predict the pattern/trend			by a variant in
		based on scientific knowledge			ACANCIICY /
Earth and	Describe the movement of the Earth,	Plan different types of	Take measurements, using a	Record data and results	Report and present findings from enquiries,
space	and other planets relative to the Sun	scientific enquiries to answer	range of scientific equipment,	of increasing complexity	including conclusions, in oral and written forms
	in the solar system.	questions.	precision.	and labels, classification	such as displays and other presentations.
	Describe the movement of the Moon	know why an	P	keys and tables.	Identify scientific evidence that has been used to
	relative to the Earth.	observation/measurement	Explore the work of scientists		support or refute ideas or arguments.
		over time is appropriate to	and scientific research	record data accurately	
	Describe the Sun, Earth and Moon as	answer the question		and appropriately	use graphs when spotting and interpreting how
	approximately spherical bodies.	Predict based on scientific		including in tables	trings change
	Use the idea of the Earth's rotation to	knowledge		choose the appropriate	explain the relationship between two sets of data
	explain day and night and the	-		type of graph	
	apparent movement of the sun across				
	the sky.	Plan different types of	Take measurements using a	Becord data and results	Report and present findings from enquiries
	Explain that unsupported objects fall	scientific enquiries to answer	range of scientific equipment.	of increasing complexity	including conclusions, causal relationships and
	towards the Earth because of the	questions, including	with increasing accuracy and	using scientific diagrams	explanations results, explanations of and degree of
	force of gravity acting between the	recognising and controlling	precision, taking repeat	and labels, tables, scatter	trust in results, in oral and written forms such as
Forces	Earth and the falling object.	variables where necessary.	readings when appropriate.	graphs, bar and line graphs.	displays and other presentations.
	Identify the effect of air resistance,	Use test results to make	select appropriate measuring	- •	Identify scientific evidence that has been used to
	water resistance and friction, that act	predictions to set up further	equipment allowing for accurate	record data accurately	support or refute ideas or arguments.
	between moving surfaces.	comparative and fair tests.	measurement	and appropriately	
	Recognise that some mechanisms	know why an	Begin to use standard measures	for repeat readings and	use graphs when spotting and interpreting trends
	including levers, pulleys and gears	observation/measurement	including fractions, decimals and	averages	offer explanations for differences in repeat readings

			1.9 6		
allow a smaller force to have a	over time is appropriate to	mixed units			
greater effect.	answer the question		choose the appropriate	use graphs when spotting and interpreting how	
		read scales with precision and	type of graph	things change	
		accuracy	durant has and line and he	and the effect of the same the time and for	
	tost when appropriate		with complex scales	explain the effect of changing the time and/or	
			nossibly involving	number of observations / measurements	
	list all the equipment needed		fractions or decimal e.g.	suggest improvements in experimental method	
			1:2 ½ or 1:1.5		
	decide what and how much			recognise the effect of sample size on reliability	
	data to collect				
				explain the relationship between two sets of data	
	understand why variables				
	can't be controlled and			A TALARIAN	
	seeking enquiry			AZAKELEV	
	Seeking enquiry				
	decide types and large				
	amount of data needed to be		- Pri	mary School	
	collected to ensure a			mary Sonour	
	reasonable sample size				
	www.diataba.wattawa/twa.ad				
	based on scientific knowledge				
	based on scientific knowledge				

	Knowledge progression.	Working Scientifically	Working	Working Scientifically	Working Scientifically
Year 6	By the end of year 6	Plan	Scientifically	Record	Review
	children will know.		Do		
Animals	Identify and name the main parts	Plan different types of scientific	Take measurements,	Record data and results of	Report and present findings from enquiries,
including	of the human circulatory system,	enquiries to answer questions.	using a range of	increasing complexity using	including conclusions, in oral and written forms
humana	and describe the functions of the		scientific equipment,	scientific diagrams and	such as displays and other presentations.
numans	heart, blood vessels and blood	know why an	with increasing accuracy	labels, classification keys and	
	(including the pulse and clotting).	observation/measurement over time	and precision.	tables.	Identify scientific evidence that has been used to
		is appropriate to answer the question			support or refute ideas or arguments.
	Recognise the impact of diet,		Explore the work of	record data accurately and	
	exercise, drugs and lifestyle on	Predict based on scientific knowledge	scientists and scientific	appropriately including in	use graphs when spotting and interpreting how
	the way their bodies function.		research	tables	things change
	Describe the ways in which			choose the appropriate type	recognise the effect of sample size on reliability
	nutrients and water are			of graph if necessary	
	transported within animals,				explain the relationship between two sets of data
	including humans.				

Evolution and	Recognise that living things have changed over time and that fossils	Plan different types of scientific enquiries to answer questions.	Take measurements, using a range of	Record data and results of increasing complexity using	Report and present findings from enquiries, including conclusions, in oral and written forms
inhoritonoo	provide information about living		scientific equipment,	scientific diagrams and	such as displays and other presentations.
Inneritance	things that inhabited the Earth millions of years ago.	know why an observation/measurement over time is appropriate to answer the question	with increasing accuracy and precision.	labels, classification keys and tables.	identify scientific evidence that has been used to support or refute ideas or arguments.
	Recognise that living things		Explore the work of	record data accurately and	
	produce offspring of the same kind, but normally offspring vary	Predict based on scientific knowledge	scientists and scientific research	appropriately including in tables	use graphs when spotting and interpreting how things change
	parents.	identify an unknown organism	use identification keys to identify unknown	choose the appropriate type of graph if necessary	recognise the effect of sample size on reliability
	Identify how animals and plants		organisms		explain the relationship between two sets of data
	are adapted to suit their environment in different ways and that adaptation may lead to				zakerley
Living	Describe how living things are	Plan different types of scientific	Take measurements,	Record data and results of	Report and present findings from enquiries,
things and	classified into broad groups	enquiries to answer questions.	using a range of	increasing complexity using	including conclusions, in oral and written forms
things and	according to common observable		scientific equipment,	scientific diagrams and	such as displays and other presentations.
their	characteristics and based on	plan to use an identification key to	with increasing accuracy	labels, classification keys and	
habitats	similarities and differences, including micro-organisms, plants	identify an unknown organism	and precision.	tables.	Identify scientific evidence that has been used to support or refute ideas or arguments.
	and animals.	plan what to test and how to test and	use identification keys to	make own keys and branching	
		what evidence to collect in order to	identify unknown	data bases	explain that sorting/grouping/classifying is very
	Give reasons for classifying plants	classify	organisms		useful to help predict where things/ organisms
	and animals based on specific			record data accurately and	belong and how they will behave
	characteristics.	predict which phylum (mammal, bird,	select appropriate	appropriately including in	
		reptile, amphibian, fish) a vertebrate	measuring equipment	tables	evaluate how well keys work and suggest
		belongs in from initial observation	allowing for accurate		changes/improvements
		know why an	measurement		Confirm or reject initial predictions around the
		observation/measurement over time	use standard measures		phylum a vertebrate belongs in based on more
		is appropriate to answer the question	including fractions,		detailed observations
			decimals and mixed units		
					use graphs when spotting and interpreting how
			read scales with		things change
			precision and accuracy		
					recognise the effect of sample size on reliability
			use a variety of		
			tests/pieces of evidence		
1			to identify and classify		

			materials /organisms			
Light	Recognise that light appears to travel in straight lines. Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye. Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.	Plan different types of scientific         enquiries to answer questions,         including recognising and controlling         variables where necessary.         Use test results to make predictions         to set up further comparative and fair         tests.         know why an         observation/measurement over time         is appropriate to answer the question         choose the to carry out a fair test         when appropriate         list all the equipment needed         decide what and how much data to         collect         understand why variables can't be         controlled and suggest using a pattern         seeking enquiry         decide types and large amount of data         needed to be collected to ensure a         reasonable sample size         predict the pattern/trend based on         scientific knowledge	Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. select appropriate measuring equipment allowing for accurate measurement Begin to use standard measures including fractions, decimals and mixed units read scales with precision and accuracy	Record data and results of increasing complexity using scientific diagrams and labels, tables, scatter graphs, bar and line graphs. record data accurately and appropriately including tables allowing for repeat readings and averages choose the appropriate type of graph draw bar and line graphs with complex scales possibly involving fractions or decimal e.g. 1:2 ½ or 1:1.5	Report and present findings from enquiries, including conclusions, causal relationships and explanations results, explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. Identify scientific evidence that has been used to support or refute ideas or arguments. use graphs when spotting and interpreting trends and patterns offer explanations for differences in repeat readings use graphs when spotting and interpreting how things change explain the effect of changing the time and/or number of observations /measurements suggest improvements in experimental method recognise the effect of sample size on reliability explain the relationship between two sets of data	
	Associate the brightness of a lamp	Plan different types of scientific	Take measurements,	Record data and results of	Report and present findings from enquiries,	
Electricity	or the volume of a buzzer with the number and voltage of cells used in the circuit.	enquiries to answer questions, including recognising and controlling variables where necessary.	using a range of scientific equipment, with increasing accuracy and precision, taking	Increasing complexity using scientific diagrams and labels, tables, scatter graphs, bar and line graphs.	including conclusions, causal relationships and explanations results, explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.	
	Compare and give reasons for	Use test results to make predictions	repeat readings when			
	variations in how components	to set up further comparative and fair	appropriate.	record data accurately and	Identify scientific evidence that has been used to	
	function, including the brightness	tests.		appropriately including tables	support or refute ideas or arguments.	

(	of bulbs, the loudness of buzzers		select appropriate	allowing for repeat readings	
ä	and the on/off position of	know why an	measuring equipment	and averages	use graphs when spotting and interpreting trends
5	switches.	observation/measurement over time	allowing for accurate		and patterns
		is appropriate to answer the question	measurement	choose the appropriate type	
l	Use recognised symbols when		Begin to use standard	of graph	offer explanations for differences in repeat
1	representing a simple circuit in a	choose the to carry out a fair test	fractions desimals and	draw bar and line graphs with	readings
	ulagraffi.	when appropriate	mixed units	complex scales possibly	use graphs when spotting and interpreting how
		list all the equipment needed	inixed dints	involving fractions or decimal	things change
			read scales with	e.g. 1:2 ½ or 1:1.5	
		decide what and how much data to collect	precision and accuracy		explain the effect of changing the time and/or number of observations /measurements
		understand why variables can't be		<b>F</b>	suggest improvements in experimental method
		seeking enquiry			recognise the effect of sample size on reliability
		decide types and large amount of data needed to be collected to ensure a reasonable sample size		Priı 🔪	explain the relationship between two sets of data
		predict the pattern/trend based on scientific knowledge			