



Long Term Science Plan – Thomas Gray Primary School

Year 1							
Unit	Term	Objectives	TAPS Assessment	Key Vocabulary	Cross Curricular Maths (See Measures and statistics sheet #software / x curricular /Year group folders)		
Seasonal Change	Across the year	 Pupils should be taught to: Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies. 	Seasons – Seasonal Change (Gather and record data to help in answering questions)	 Weather (sunny, rainy, windy, snowy etc.) Seasons (winter, summer, spring, autumn) Sun, sunrise, sunset, day length 	 Temperature (comparative to body temperature & or in centigrade) Volume of rainfall (comparative using home-made rain gauge and invented scale or in cm3) Invented scale using a wind toy. No wind=0 /very windy =5 Count types of birds spotted Height in uniform non- standard units e.g. match boxes or cm Invent scale score e.g. 0=no leaves to 5=lots of leaves Tally & put the information on seasonal changes chart 		

Common	Autumn 1	Pupils should be taught to:	Animals inc	• Head, body, eves, ears, mouth.	Tally- pictogram
Animals other		Identify and name a variety of	Humans:	teeth, leg, tail, wing, claw, fin, scales.	Sorting hoops (Herbivore /
than Humans		common animals including fish.	animal	feathers, fur, beak, paws, hooves	Carnivore/Omnivore)
		amphibians, reptiles, birds and	classification	Names of animals experienced	
and their basic		mammals.	(Identify and	first-hand from each vertebrate	
structure		 Identify and name a variety of 	classify)	group	
		common animals that are carnivores.		N.B. The children need to be able to	
		herbivores and omnivores.		name and identify a range of animals	
		• Describe and compare the		in each group e.g. name specific	
		structure of a variety of common		birds and fish. They do not need to	
		animals (fish. amphibians. reptiles.		use the terms mammal, reptiles etc.	
		birds and mammals, including pets).		or know the key characteristics of	
				each, although they will probably be	
				able to identify birds and fish, based	
				on their characteristics. The children	
				also do not need to use the words	
				carnivore, herbivore and omnivore.	
				If they do, ensure that they	
				understand that carnivores eat other	
				animals, not just meat.	
Everyday	Autumn 2	Pupils should be taught to:	Materials:	Object, material, wood, plastic, glass,	Area or volume of
Materials –	Spring 1	• Distinguish between an object and	Reflection test	metal, water, rock, brick, paper,	puddle left after one
naming of		the material from which it is made.	(Ask simple qs	fabric, elastic, foil, card/cardboard,	wipe or number of wipes
materials and		 Identify and name a variety of 	and recognise	rubber, wool, clay, hard, soft,	to mop up the puddle or
thoir		everyday materials, including wood,	that they can	stretchy, stiff, bendy, floppy,	Height of bounce
		plastic, glass, metal, water, and rock.	be answered in	waterproof, absorbent, breaks/tears,	measured in uniform
properties		 Describe the simple physical 	different ways)	rough, smooth, shiny, dull, see-	non-standard units such
		properties of a variety of everyday		through, not see-through	as bonios or cm
		materials.	Materials:		Sorting Hoops
		 Compare and group together a 	floating and		Sort and record onto
		variety of everyday materials on the	sinking		suitable (Yes) not
		basis of their simple physical	(Perform		suitable (No) chart
		properties.	simple tests)		Bar chart/block graph

					 Practical graph/ block graph/ bar chart
<u>Plants – basic</u> <u>structure and</u> <u>observing</u> <u>growth over</u> <u>time</u>	Spring 2 Summer 1 - Observe changes across four seasons to take place across the year.	 Pupils should be taught to: 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. 	Plants: structure (Observe closely, using simple equipment)	 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 	 Area of leaves from different types of tree in the school ground in uniform non-standard units e.g. pennies or cm2 Count petals Possible to sort using criteria using measurement such as mass or length Number of leaves or Spread/area of different types of salad leaves grown. In uniform non -standard units e.g thumb nails or cm2 Order chart Trees with largest-smallest leaf Practical pictogram Sorting hoops Pictogram (number of leaves) or draw results showing increased area
Human Body and Senses	Summer 2	Pupils should be taught to: • Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	Animals inc Humans: body parts (Use observations and ideas to suggest answers to questions)	 Parts of the body including those linked to PSHE teaching Senses – touch, see, smell, taste, hear, fingers (skin), eyes, nose, ear and tongue Although we often use our fingers and hands to feel objects, the 	 Comparative descriptive catch reaction strips or with invented scale Count number of layers of material to block out the sound

			Year 2	children should understand that we can feel with many parts of our body	 Sort sensory pots into sorting hoops Practical material squares block graph
<u>Unit</u>	Term	Objectives	TAPS	Key Vocabulary	Cross Curricular Maths
			Assessment		(See Measures and statistics sheet #software / x curricular
					/Year group folders)
Plants/Animals (Nature and Field Journals – observation of plants and animals in their local environment across the year)	Across the Year	 Pupils should be taught to: 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 	Plants: Compare growth (Observe closely, using simple equipment) Living Things: (Nature spotters) – could be done more than once across the seasons.		 Height of plants cm or spread of plants cm2 Count number of flowers/leaves on different plants growing in the grounds Sorting could involve measurement of mass (g) or volume cm3 Bar chart of height or spread of plants Tally chart-block graph/ bar chart Caroll diagram using size and colour. Similarities and differences sheet
Living Things	Autumn 1	Pupils should be taught to:	Living Things:	Living, dead, never been alive,	Mass of different types
and their habitats		 explore and compare the differences between things that are living, dead, and things that have never been alive 	habitats (Gather and record data to help in	suited, suitable, basic needs, food, food chain, shelter, move, feed • Names of local habitats e.g. pond, woodland etc. • Names of micro-	 of frit or veg left Photograph different things found on the field Tally chart of different animals found

		 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 micro- habitats 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 	answering questions) Living Things: Natures Spotters (Identify and classify)	habitats e.g. under logs, in bushes etc.	 Bar chart of mass eaten of different types of fruit and veg Tally -Pictogram showing the number of woodlice found under stones in the grass and on trees. Group on a Venn diagram alive/dead/never been alive
Humans – What humans need to survive, human growth and exercise	Autumn 2 Spring 1	 Pupils should be taught to: 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). 	Animals in Humans: hand span (use observations and ideas to suggest answers to questions)	 Offspring, reproduction, growth, child, young/old stages (examples - chick/hen, baby/child/adult, caterpillar/butterfly), 	 Potential for measurement of height (cm), length(cm) or mass(g) depending on animal studied growing Height (m & cm) Temperature (Rise) in centigrade using forehead thermometer or count number of breathes in a minute immediately after stopping
Humans-	Spring 2	• Describe the importance for humans of exercise, eating the right		 exercise, heartbeat, breathing, hygiene, germs, 	Growth chart/tablePractical scatter graph

Human health		amounts of different types of food,		disease, food types	Bar chart
and nutrition		and hygiene.		(examples – meat, fish,	Sort pictures of different types of
				vegetables, bread, rice,	food in different ways. Label
				pasta)	groupings.
Plants	Summer 1	 Pupils should be taught to: 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. 	Plants: Compare growth (Observe closely, using simple equipment)	As for Year 1 plus light, shade, sun, warm, cool, water, grow, healthy	 Height of plants cm or spread of plants cm2 Count number of flowers/leaves on different plants growing in the grounds Sorting could involve measurement of mass (g) or volume cm3 Bar chart of height or spread of plants Tally chart-block graph/ bar chart Caroll diagram using size and colour. Similarities and differences sheet
Use of everyday materials – suitability of different materials for particular uses	Summer 2	 Pupils should be taught to: 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. 	Materials: waterproof (Ask simple questions and recognise they can be answered in different ways) Materials: rocket mice (perform simple tests)	Names of materials – wood, metal, plastic, glass, brick, rock, paper, cardboard Properties of materials – as for Year 1 plus opaque, transparent and translucent, reflective, nonreflective, flexible, rigid Shape, push/pushing, pull/pulling, twist/twisting, squash/squashing, bend/bending, stretch/stretching	 Check every hour measure the volume reading the scale on the measuring cylinder Grouping could involve measurements such as time to form a puddle (minutes and seconds) or time to get down a ramp. Mass of a shot glass full(g) Observation or data logger to give light

					readings when the colour can just be detected Practical strip bar chart Sort gloops using Venn diagrams or Caroll diagrams using own criteria
			<u>Year 3</u>		
<u>Unit</u>	Term	Objectives	TAPS Assessment	Key Vocabulary	Cross Curricular Maths (See Measures and statistics sheet #software / x curricular /Year group folders)
Nutrition, diet and movement and the skeleton	Autumn 1 Autumn 2	 Pupils should be taught to: 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. 	Animals inc humans: investigating skeletons (Ask relevant questions and use different types of scientific enquiries to answer them)	Nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water, skeleton, bones, muscles, joints, support, protect, move, skull, ribs, spine	 Change- leg length (cm) Measure-height up the wall reached (m and cm) Change-hand area squares (cm2) Measure –pulling force (N) (Herbivore / Carnivore/ Omnivore) Venn diagram Scatter graph
Rocks and Fossils	Spring 1	 Pupils should be taught to: Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. 	Rocks: rock reports (Report on findings from enquiries, including oral and written explanations,	Rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorb water, soil, fossil, marble, chalk, granite, sandstone, slate, soil, peat, sandy/chalk/clay soil	 Change –type of rock Measure mass of rock after x time in water Change- type of soil

		 Describe in simple terms how fossils are formed when things that have lived are trapped within rock. Recognise that soils are made from rocks and organic matter. 	displays or presentations of results and conclusions. Identify differences, similarities or changes related to simple scientific ideas and processes.)		 Measure – change in mass after water poured through them. (Kg and g) Change-type of soil Measure- volume of water passing through soil types (cm3) Sorting Hoops Block graph Carroll diagram (crystals/no crystals) and (fossils/ no fossils) Bar chart
Forces and magnets	Spring 2	 Pupils should be taught to: Compare how things move on different surfaces. Notice that some forces need contact between two objects, but magnetic forces can act at a distance. Observe how magnets attract or repel each other and attract some materials and not others. Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials. Describe magnets as having two poles. Predict whether two magnets will attract or repel each other, depending on which poles are facing 	Forces: shoe grip Forces: strongest magnet (Set up simple practical enquiries, comparative and fair tests) Forces: making car ramps (Gather, record, classify and present data in a variety of ways to help in answering	Force, push, pull, twist, contact force, non-contact force, magnetic force, magnet, strength, bar magnet, ring magnet, button magnet, horseshoe magnet, attract, repel, magnetic material, metal, iron, steel, poles, north pole, south pole	 Change –material Measure- How long they take to pass the finish line Change- type of magnet Measure-mass of paper clips picked up Magnetic and non - magnetic materials Bar chart Sorting hoops

	questions.	
	Record findings	
	using simple	
	scientific	
	language,	
	drawings,	
	labelled	
	diagrams, keys,	
	bar charts, and	
	tables)	
	,	
	Forces: balloon	
	rockets	
	(Use results to	
	draw simple	
	conclusions,	
	make	
	predictions for	
	new values,	
	suggest	
	improvements	
	and raise	
	further	
	questions. Use	
	straightforward	
	scientific	
	evidence to	
	answer	
	questions or to	
	support their	
	findings)	

Light - Shadows and Reflection	Summer 1	 Pupils should be taught to: Recognise that they need light in order to see things, and that dark is the absence of light. Notice that light is reflected from surfaces. Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. Recognise that shadows are formed when the light from a light source is blocked by an opaque object. Find patterns in the way that the size of shadows change. 	Light – Making Shadows (Gather, record, classify and present data in a variety of ways to help answering questions. Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.)	Light, light source, dark, absence of light, transparent, translucent, opaque, shiny, matt, surface, shadow, reflect, mirror, sunlight, dangerous	 Change -distance between light source and object (cm) Measure –length of shadow (cm) Change- number of layers of tracing paper Measure darkness of shadow (made up scale and done by eye or Data logger) Draw round shadow and calculate area in (dm2) Line graph if covered bar chart or bar line graph if not. Bar chart Bar chart Sort as opaque, transparent, translucent. Sorting hoops
Plants – functions or parts and plant growth	Summer 2	 Pupils should be taught to: Identify and describe the functions of different parts of flowering plants: roots; stem/trunk; leaves; and flowers. Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant. Investigate the way in which water is transported within plants. 	Plants: measuring plants (Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of	Photosynthesis, pollen, insect/wind pollination, seed formation, seed dispersal (wind dispersal, animal dispersal, water dispersal)	 Height or spread of plant in cm/cm2 Change-Room temperature carnations are left in. centigrade Measure -Time for colour change of the flowers. Change- light level measure with data logger. Measure height of plant (cm) Change mass of fertilizer (g)

		• Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	equipment, including thermometers and data loggers.) Year 4		 Measure Height of plant (cm) Change –length of seed (mm) Measure- height of plant after x time (cm) Bar line graph Should be a line graph although these don't officially come in to NC until Yr4. (Could do a bar line graph) Table of results Tally chart for different types
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<u>Unit</u>	Term	Objectives	TAPS Assessment	Key Vocabulary	Cross Curricular Maths (See Measures and statistics sheet #software / x curricular /Year group folders)
Electricity – series circuits, switches, conductors, insulators	Autumn 1	 Pupils should be taught to: identify common appliances that run on electricity construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is 	Electricity: conductors (Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Identify	Electricity, electrical appliance/device, mains, plug, electrical circuit, complete circuit, component, cell, battery, positive, negative, connect/connections, loose connection, short circuit, crocodile clip, bulb, switch, buzzer, motor, conductor, insulator, metal, non-metal, symbol	 Change- voltage of cells Count the number of bulbs added before they no longer light Change-length of fuse wire Measure –brightness of bulb using data logger Carroll diagram (metal/non -metal)(conducts electricity /doesn't conduct) Bar chart Line graph

		 part of a complete loop with a battery recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit recognise some common conductors and insulators, and associate metals with being good conductors. 	differences, similarities or changes related to simple scientific ideas and processes.)		
Sound	Autumn 2	 Pupils should be taught to: identify how sounds are made, associating some of them with something vibrating recognise that vibrations from sounds travel through a medium to the ear find patterns between the pitch of a sound and features of the object that produced it find patterns between the volume of a sound and the strength of the vibrations that produced it recognise that sounds get fainter as the distance from the sound source increases. 	Sound: Investigating pitch (Ask relevant questions and use different types* of scientific enquiries to answer them) Sound: string telephones (Report on findings from enquiries, including oral and written explanations, displays or presentations of results and	Sound, source, vibrate, vibration, travel, pitch (high, low), volume, faint, loud, insulation	 Change- length of oboe straw (cm) Observe-pitch Change- material Measure-sound getting through using data logger Sorting rings. Grouping and sorting determined by the children Block graph

			conclusions. Identify differences, similarities or changes related to simple scientific ideas and processes.)		
States of Matter	Spring 1 Spring 2	 Pupils should be taught to: compare and group materials together, according to whether they are solids, liquids or gases observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature 	Materials: drying materials (Set up simple practical enquiries, comparative and fair tests.) Materials: measure temperature (Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment,	Solid, liquid, gas, state change, melting, freezing, melting point, boiling point, evaporation, temperature, water cycle	 Change –food stuff Measure –time to melt (mins/secs) Change –temperature (centigrade) Measure- time to melt (minutes/sec) Time how long it takes for an ice cube to melt and then evaporate Area or volume of puddle left over time. (cm2/cm3) Or hand print on a paper towel Change- temperature Measure volume of water left after 24 hours Bar chart Line graph Written/ pictorial record Venn diagram (Solids /liquids/gases include some colloids)

			including thermometers and data loggers.)		
Teeth and the digestive system	Summer 1	 Pupils should be taught to: describe the simple functions of the basic parts of the digestive system in 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 	Animals inc Humans: teeth (eggs) in liquids (Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. Use straightforward scientific evidence to answer questions or to support their findings.)	Digestive system, digestion, mouth, teeth, saliva, oesophagus, stomach, small intestine, nutrients, large intestine, rectum, anus, teeth, incisor, canine, molar, premolars, herbivore, carnivore, omnivore, producer, predator, prey, food chain	 Change –liquid Measure-time to start to attack the teeth (egg shell) (days) Sorting hoops (Herbivore / Carnivore/ Omnivore) Block graph
Habitats – grouping and classifying plants and animals	Summer 2	 Pupils should be taught to: recognise that living things can be grouped in a variety of ways explore and use classification keys to help group, identify and name a variety of living 	Living Things: local survey (Gather, record, classify and present data in a variety of ways	Classification, classification keys, environment, habitat, human impact, positive, negative, migrate, hibernate	 Coverage of various plants (cm2/dm2/m2) and /or height of different plants Tally of different invertebrates found on field, under stones, on trees and shrubs

		 things in their local and wider environment recognise that environments can change and that this can sometimes pose dangers to living things 	to help in answering questions. Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables)		 Line graph Sorting hoops Bar chart Venn diagram of small plants into grasses, flowers, non-flowers such as ferns and mosses
			<u>Year 5</u>		
<u>Unit</u>	Term	Objectives	TAPS Assessment	Key Vocabulary	Cross Curricular Maths (See Measures and statistics sheet #software / x curricular /Year group folders)
Materials and properties – comparative / fair tests of everyday materials. Materials – reversible and irreversible changes	Across whole Autumn Term. (There are 2 units linked to Materials within the ASE planning Framework – to cover both)	 Pupils should be taught to: compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution 	Materials :dissolving Materials: nappy absorbency (Plan different types* of scientific enquiries to answer their own questions, including recognising and controlling	Thermal/electrical insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve, reversible/non-reversible change, burning, rusting, new material	 Change –food stuff Measure –time to melt (min/sec) Change –Volume of liquid cm3 Measure- time to evaporate (days/hours) Change-Type of filter paper Measure- Clarity of water on a pupil made numerical scale Change-temperature of water Measure- time to dissolve minutes/seconds or amount left after x minutes

 use knowledge of solids, 	variables	How long it takes a brilo
liquids and gases to decide	where	pad to completely rust in
how mixtures might be	necessary.)	vinegar
separated, including		Mass of a candle left to
through filtering, sieving and	Materials :	burn. Weighed at regular
evaporating	insulation	Change mass of
 give reasons, based on 	layers (Use test	bicarbonate of soda (g) or
evidence from comparative	results to make	volume of vinegar cm3
and fair tests, for the	predictions to	 Measure- volume of gas
particular uses of everyday	set up further	produced or time to stop
materials, including metals,	comparative	producing gas (min/Sec)
wood and plastic	and fair tests.)	
 demonstrate that dissolving, 		 Change- material
mixing and changes of state	Materials :	 Measure- time to melt
are reversible changes	sugar cubes	(min/sec)temperature to
 explain that some changes 	(Record data	drop to room temperature
result in the formation of	and results of	(centigrade)
new materials, and that this	increasing	 Materials that conduct (don't conduct)
kind of change is not usually	complexity	electricity
reversible including changes	using scientific	Change -Time of day
associated with hurning and	diagrams and	Measure length of shadow
the action of acid on	lahels	Change the time of day and
bicarbonate of soda	classification	observe/measure the suns
•	keys tables	position
	scatter graphs	 Change –area of cupcake
	bar and line	parachute
	graphs)	Measure- time to drop
	graphs.)	(seconds and tenth &
	Materials	hundredths of seconds)
	champion	Change –area of
		paracrite/material/
	and procent	
	and present	
	tindings from	

Earth and Space	Spring 1	 Pupils should be taught to: describe the movement of the Earth, and other planets, relative to the Sun in the solar system describe the movement of the Moon relative to the Earth describe the Sun, Earth and Moon as approximately spherical bodies use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky. 	enquiries, inc conclusions and causal relationships, in oral and written forms such as displays and other presentations, using appropriate scientific language.) Space : craters (Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.)	Earth, Sun, Moon, (Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune), spherical, solar system, rotates, star, orbit, planets	 Measure- time to drop (seconds and tenth & hundredths of seconds) Change-shape of boat Measure –distance travelled Bar chart Line graph Photographic record over time Venn diagram Change -Time of day Measure length of shadow Change the time of day and observe/measure the suns position Bar line graph Record with circles on a window or distance from mid- day position
Forces and	Spring 2	Pupils should be taught to:	Forces:	Force, gravity, Earth, air resistance,	Change –area of cupcake
falling objects		explain that unsupported objects fall towards the	spinners (Take measurements,	water resistance, friction,	parachute

		 Earth because of the force of gravity acting between the Earth and the falling object identify the effects of air resistance, water resistance and friction, that act between moving surfaces recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect 	using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate) Forces: aquadynamics (Explain degree of trust in results. Identify and evaluate scientific evidence (their own and others') that has been used to support or refute ideas or arguments)	mechanisms, simple machines, levers, pulleys, gears	 Measure- time to drop (seconds and tenth & hundredths of seconds) Change –area of parachute/material/ length of thread etc Measure- time to drop (seconds and tenth & hundredths of seconds) Change-shape of boat Measure –distance travelled Line graph Bar chart
Life cycle changes in animals and plants: naturalists (e.g David Attenborough)	Summer 1	 Pupils should be taught to: describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird describe the life process of reproduction in some plants and animals. 	Living Things: life cycle research (Report and present findings from enquiries, inc conclusions and causal	Life cycle, reproduce, sexual, sperm, fertilises, egg, live young, metamorphosis, asexual, plantlets, runners, bulbs, cuttings	 Coverage of various plants (cm2/dm2/m2) and /or height of different plants Change time measure Height (cm) /mass (g) of chicks Line graphs

SEE ASE			relationships.		Classification key based on	
Living things			in oral and		features in life cycles (e.g. eggs	
Living unings			written forms		or live young)	
and their			such as		Venn diagram	
habitat			displays and			
			other			
			nresentations			
			using			
			appropriate			
			scientific			
			language.)			
Animals inc	Summer 2	Pupils should be taught to:	Animals inc	Puberty – the vocabulary to describe	Length cm /mass Kg & g	
humans –		 describe the changes as 	Humans :	sexual characteristics	Change- child (children in	
growth and		humans develop to old age	Growth survey		the class)	
development		Puberty – Cross curricular Jigsaw	(Take		Measure Change in height	
of humans			measurements,		over a term	
			using a range		Bar graph	
plus exercise			of scientific		Scatter graph	
and the			equipment,		Scatter graph	
circulatory			with increasing			
system			accuracy and			
			precision,			
SEE – ASE			taking repeat			
Animals			readings when			
including			appropriate)			
humans –						
Melissa and						
Humans and						
living things -						
Charlotte						
	1	L	Vear 6	1	<u> </u>	

<u>Unit</u>	Term	Objectives	TAPS	Key Vocabulary	Cross Curricular Maths
			Assessment		(See Measures and statistics
					sheet #software / x curricular
					/Year group folders)
Evolution and Inheritance	Autumn 1	 Pupils should be taught to: recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago 	Evolution: fossil habitats Evolution: egg strength (Explain degree of trust in results. Identify and evaluate scientific evidence (their own and others') that has been used to support or refute ideas or arguments.)	Offspring, sexual reproduction, vary, characteristics, suited, adapted, environment, inherited, species, fossils	 Change- type of beak (models e.g. Lolly sticks, and cocktail sticks) Measure- number of seeds picked up in a minute Change- length of beak (cm) Measure- number of seeds picked up in a minute Change- adaptation on different children (gloves on hands, blindfold, kneel down) Measure number of sweets picked up in minutes Change- number of bottles of warm water (modelling penguins) Measure- temperature of middle penguin Bar chart Line graphs Scatter graph
Light – exploring the way light behaves including light sources, reflection and shadow.	Autumn 2	Pupils should be taught to: • 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: investigating shadows (Take measurements, using a range of scientific equipment, with increasing accuracy and precision,	As for Year 3 - Light, plus straight lines, light rays	 Change-Angle of torch from object Measure- angle of object Change- distance of torch from object (cm) Measure- (area of shadow Change- number of layers of tracing paper Measure- depth of shadow (data logger) Line graph

		 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. 	taking repeat readings when appropriate)		
The Heart and circulatory system	Spring 1	 Pupils should be taught to: identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function describe the ways in which nutrients and water are transported within animals, including humans 	Animals inc Humans: heart rate (Use test results to make predictions to set up further comparative and fair tests.)	Heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, circulatory system, diet, exercise, drugs, lifestyle	 Change- type of exercise Measure- pulse rate or breathing rate. Change- duration of exercise (minutes/step count using pedometer) Measure- pulse rate or breathing rate (pulse rate) Bar chart Line graph
Classification including subdivision for vertebrates and invertebrates	Spring 2	 Pupils should be taught to: describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro- 	Living Things: outdoor keys (Record data and results of increasing complexity using scientific diagrams and	Vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, insects, spiders, snails, worms, flowering, non-flowering	 Group types of different plants and animals etc. using own criteria e.g. sort plants found on the school field Classify different invertebrates found on field, under stones, on trees and shrubs

		organisms, plants and animals give reasons for classifying plants and animals based on specific characteristics.	labels, classification keys, tables, scatter graphs, bar and line graphs.)		 Classifying small plants into grasses, flowers, non-flowers such as ferns and mosses. Sorting hoops Venn diagrams and Carroll diagrams Classification key
			invertebrate research (Report and present findings from enquiries, inc conclusions and causal relationships, in oral and written forms such as displays and other presentations, using appropriate scientific language.)		
Electricity	Summer 2	 Pupils should be taught to: associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit 	Electricity : bulb brightness (Plan different types* of scientific	Circuit, complete circuit, circuit diagram, circuit symbol, cell, battery, bulb, buzzer, motor, switch, voltage	 Change- component Measure/observe- effect Change-Type of wire Measure –number of bulbs that will light Carroll diagram

	 compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches use recognised symbols when representing a simple circuit in a diagram. 	enquiries to answer their own questions, including recognising and controlling variables where necessary)	 (metal/non -metal)(conducts electricity /doesn't conduct) Block graph 		
Famous Scientists and the contributions to the world – teach across all units. (Year 6 – see Lancs planning)					