

Science – Cycle A			
Subject	Key vocab.	Declarative knowledge	Procedural knowledge
Early Years	Early Years Objective throughout the year Please refer to the fe - Nursery Skills - Nursery Skills - Reception Lo - Early Years S	es (taken from the Early Years Foundation Stage Statutory Frame for ages 2 Years Old to the end of Reception. ollowing documents to view the half termly progression of decla s Development Progression 2 to 3 year olds. s Development Progression 3 to 4 year olds. ong Term Plan. ubject Lead Document.	ework and the Development Matters guidance) are covered arative and procedural knowledge:
Autumn 1 (A) Phase: Y1/2	season autumn spring summer winter observe	 <u>Seasons – Autumn and Winter</u> I know that the length of the day varies throughout the year. I know the types of weather associated with the four seasons. 	 <u>Seasons – Autumn and Winter</u> I can observe changes across the four seasons. <u>Investigation:</u> How does the weather change? I can observe what I see and record this through drawing. I can record data to help me to answer questions.
Autumn 2 (A) Phase: Y1/2	habitat microhabitat data	 Living Things and their Habitats I know what a habitat and microhabitat is. I know that most living things need shelter and food to survive. I know that different living things are suited to different habitats. 	 Living Things and their Habitats I can describe the conditions in different habitats. Investigation: Which habitat do minibeasts like the most? I can ask simple questions. I can record data to help me to answer questions.
Spring 1 (A) Phase: Y1/2	properties transparent opaque translucent suitability describe	 <u>Suitability of Everyday Materials</u> I know the names of the following materials: wood, plastic, glass, metal and rock. I know the following properties: hard, soft, bendy, rigid, smooth, rough, transparent, opaque and waterproof. 	 <u>Suitability of Everyday Materials</u> I can distinguish the difference between an object and the material from which it is made. I can describe the properties of wood, plastic, glass, metal and rock. <u>Investigation:</u> Which material should we use to make a house for the Three Little Pigs? I can compare the suitability of a variety of everyday materials for particular uses.
Spring 2 (A) Phase: Y1/2	season autumn spring summer winter observe	 <u>Seasons: Spring and Summer</u> I know that the length of the day varies throughout the year. I know the types of weather associated with the four seasons. 	 <u>Seasons: Spring and Summer</u> I can observe changes across the four seasons. <u>Investigation:</u> <i>Is the temperature always the same?</i> <i>Does the wind always blow in the same direction?</i> I can observe what I see and record this through drawing. I can record data to help me to answer questions.
Summer 1 (A) Phase: Y1/2	offspring balanced diet hygiene life cycle record	 <u>Animals Including Humans (Healthy Lifestyles)</u> I know that animals, including humans, have offspring that grow into adults. I know that humans need to exercise, eat a balanced diet and keep good hygiene to stay healthy. 	 <u>Animals Including Humans (Healthy Lifestyles)</u> I can record the life cycle of animal such as a frog or a butterfly. <u>Investigation:</u> Are all children small and all adults tall? I can record data to help me to answer questions
Summer 2 (A) Phase: Y1/2	plant names evergreen deciduous observe	 <u>Plants</u> I know the names of the following plants: daffodils, daisies, buttercups, roses, poppies, tulips and dandelions. I know that there are evergreen and deciduous trees. I know that plants need water, light and warmth to grow healthily. 	 <u>Plants</u> I can identify the basic structure of a flowering plant, including a stem, leaves, roots and petals. <u>Investigation:</u> What do plants need to grow healthily? I can observe what I see and record this through drawing.
Autumn 1 (A) Phase: Y3/4	magnets attract repel force enquire findings labelled diagrams	 Forces and Magnets I know that magnets can attract and repel. I know that magnets have two poles. I know the difference between a push and a pull. 	 Forces and Magnets I can investigate how objects move on different surfaces. Investigation: How do road surfaces affect the distance that cars travel? I can set up simple practical enquiries. I can record findings using drawings, labelled diagrams, bar charts and/or tables.



	fossil	Rocks	Rocks
umn 2 (A) ase: Y3/4	sedimentary	 I know how fossils are formed. 	I can identify the three different types of rocks.
	igneous	I know how soil is formed.	
	metamorphic	 I know how rocks may change in water. 	Investigation:
	eroding		Are all rocks the same?
Autı Pha	compacting		 I can compare and classify after choosing my own set of
	explanation		criteria.
	Criteria		 I can give oral and written explanations of results and explanations.
	skoloton	Animals Including Humans	Conclusions.
	musclo	Allinais including Humans	Animais including Humans
	conclusion	 I know what animals need to survive. I know why animals and humans have skeletons and 	 I can use results to draw simple conclusions, make predictions and suggest improvements
	conclusion	muscles	 I can give oral and written explanations of results and
1 (А ҮЗ/		museles.	conclusions.
ring ase:			
Sp Ph			Investigation:
			Can people with longer femurs jump further?
			 I can ask relevant questions, using different types of
			scientific enquiry to answer them.
	absence	Light	Light
	reflect	I know that light is needed in order to see things.	 I can investigate how shadows are formed and how they
	surface	I know that dark is the absence of light.	change.
A) /4	labollod diagram	I know that light is reflected from surfaces.	Investigation
g 2 (labelleu ulagrafii	 I know now and why I need to protect my eyes from the sup 	When will I see the longest shadow?
orin ₍ nase		sun.	 I can make observations using scientific equipment
PI			 I can give oral and written explanations of results and
			conclusions.
			 I can record findings using drawings, labelled diagrams,
			bar charts and/or tables.
	functions	<u>Plants</u>	<u>Plants</u>
	transported	 I know what plants need to grow. 	• I can label the functions of each part of a flowering plant
(A)	enquire	 I know the part that flowers play in the plant's life cycle. 	(roots, stem/trunk, leaves and flowers).
er 1 : Y3,			Investigation
nme			How does water travel in a plant?
PF Sur			 I can make observations using scientific equipment
			 I can record findings using drawings labelled diagrams
			bar charts and/or tables.
	nutrition	Animals Including Humans	Animals Including Humans
	protection	I know that animals, including humans, need the right	I can explain why animals and humans have skeletons and
	scientific evidence	types of nutrition to survive.	muscles (for support, protection and movement).
	results	I know that animals, including humans, cannot make their	
2 (A) 3/4		own food.	Investigation:
ner Se: Y			Are all drinks healthy?
Summ Phase			I can use straightforward scientific evidence to answer questions
			L can record findings using drawings labelled diagrams
			bar charts and/or tables.
			 I can give oral and written explanations of results and
			conclusions.
	gravity	Forces	Forces
	air resistance	I know that unsupported objects fall towards the Earth	Investigation:
	friction	because of the force of gravity acting between the Earth	How does surface area affect the speed at which an object

Autumn 1 (A) Phase: Y5/6	mechanism surface area causal relationship	 and the falling object. I know about the effects of air resistance, water resistance and friction that act between moving surfaces. I know that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. 	 falls? I can record data and results using scientific diagrams, classification keys, tables, scatter graphs and/or line graphs. I can draw conclusions from the observations that I make. I can report and present my findings, including conclusions, causal relationships and explanations in oral and written forms.



Autumn 2 (A) Phase: Y5/6	dissolve solution substance mixture filter sieve evaporate reversible change change of state	 Properties of materials I know that some materials will dissolve in liquid to form a solution. I know how to recover a substance from a solution. I know how different mixtures can be separated, through filtering, sieving and evaporating. I know that dissolving, mixing and changes of state are reversible changes. I know that some changes result in the formation of new materials, including changes associated with burning. 	 <u>Properties of Materials</u> <u>Investigation:</u> <i>Do all solids dissolve?</i> I can record data and results using scientific diagrams, classification keys, tables, scatter graphs and/or line graphs. I can report and present my findings, including conclusions, causal relationships and explanations in oral and written forms.
Spring 1 (A) Phase: Y5/6	human development puberty gestation refute	 <u>Animals including Humans</u> I know the 6 stages of human development. I know the changes that occur during puberty. I know that different species of animal have different gestation periods. 	 <u>Animals including Humans</u> <u>Investigation:</u> Are the gestation periods of all species of animal the same. I can identify scientific evidence that has been used to support or refute ideas or arguments. I can record data and results using scientific diagrams, classification keys, tables, scatter graphs and/or line graphs. I can report and present my findings, including conclusions, causal relationships and explanations in oral and written forms.
Spring 2 (A) Phase: Y5/6	life process reproduction root cutting parent plant propagation present findings	 Living Things I know the life process of reproduction in some plants. I know the life process of reproduction in some animals. I know the differences in the life cycles of mammals, amphibians, insects and birds. I know the difference between sexual and asexual reproduction in plants. 	 Living Things Investigation: Can a plant be cloned? I can draw conclusions from the observations that I make. I can record data and results using scientific diagrams, classification keys, tables, scatter graphs and/or line graphs. I can report and present my findings, including conclusions, causal relationships and explanations in oral and written forms.
Summer 1 (A) Phase: Y5/6	dissolve solution substance mixture filter sieve evaporate change state scientific diagram	 <u>Properties of Materials</u> I know that some materials will dissolve in liquid to form a solution. I know how to recover a substance from a solution. I know how different mixtures can be separated, through filtering, sieving and evaporating. I know that dissolving, mixing and changes of state are reversible changes. I know that some changes result in the formation of new materials, including changes associated with burning. 	 <u>Properties of Materials</u> I can compare and group together everyday materials on the basis of their properties, including solubility. <u>Investigation:</u> Are changes of state reversible changes? I can plan different types of scientific enquiry to answer questions. I can record data and results using scientific diagrams, classification keys, tables, scatter graphs and/or line graphs. I can report and present my findings, including conclusions, causal relationships, and explanations in oral and written forms.
er 2 (A) : Y5/6	planet names solar system celestial spherical rotate relative to	 <u>The Earth and Space</u> I know that the Sun is a star at the centre of our solar system. I know that our solar system has eight planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune. (Pluto is a dwarf planet.) I know that a moon is a celestial body that orbits a planet. 	 <u>The Earth and Space</u> I can describe the movement of the Earth, and other planets, is relative to the Sun in the solar system. I can describe that the movement of the Moon relative to the Earth. <u>Investigation:</u> Can shadows help us to tell the time?

- ٠ I know that the Sun, Earth and Moon are approximately spherical bodies.
- I know how the Earth's rotation explains day and night • and the apparent movement of the Sun across the sky.

Please note: pupils should be warned that it is not safe to look directly at the sun, even when wearing dark glasses.

Can shadows help us to tell the time?

- I can draw conclusions from the observations that I make.
- I can record data and results using scientific diagrams, classification keys, tables, scatter graphs and/or line graphs.
- I can report and present my findings, including conclusions, causal relationships and explanations in oral and written forms.



Science – Cycle B			
Subject	Key vocab.	Declarative knowledge	Procedural knowledge
Early Years	 Early Years Objectives (taken from the Early Years Foundation Stage Statutory Framework and the Development Matters guidance) are covered throughout the year for ages 2 Years Old to the end of Reception. Please refer to the following documents to view the half termly progression of declarative and procedural knowledge: Nursery Skills Development Progression 2 to 3 year olds. Nursery Skills Development Progression 3 to 4 year olds. Reception Long Term Plan. Early Years Subject Lead Document. 		
Autumn 1 (B) Phase: Y1/2	properties opaque translucent transparent	 <u>Properties of Everyday Materials</u> I know the names of the following materials: wood, plastic, glass, metal and rock. I know the following properties: hard, soft, bendy, rigid, smooth, rough, transparent, opaque and waterproof. I know why different materials are suitable for different uses. 	 <u>Properties of Everyday Materials</u> <u>Investigation:</u> <i>Can the shape of a solid be changed?</i> I can distinguish the difference between an object and the material from which it is made. I can ask simple questions
Autumn 2 (B) Phase: Y1/2	birds mammals reptiles amphibians carnivores herbivores omnivores group and classify	 <u>Animals Including Humans (Classifying Animals)</u> I know that animals, including humans, need water, food and shelter to survive. I know the differences between birds, mammals, reptiles, fish and amphibians. I know the differences between carnivores, herbivores and omnivores. 	 <u>Animals Including Humans (Classifying Animals)</u> I can say which part of the body is associated with each sense. <u>Investigation:</u> How can animals be grouped? I can group and classify based on criteria given to me by my teacher.
Spring 1 (B) Phase: Y1/2	season autumn spring summer winter observe	 <u>Seasons – Autumn and Winter</u> I know that the length of the day varies throughout the year. I know the types of weather associated with the four seasons. 	 <u>Seasons – Autumn and Winter</u> I can observe changes across the four seasons. <u>Investigation:</u> <i>Can a pine cone predict the weather?</i> I can observe what I see and record this through drawing. I can record data to help me to answer questions.
Spring 2 (B) Phase: Y1/2	solids liquids investigate	 <u>Changing Shape: Everyday Materials</u> I know that some materials can have their shape changed easily. I know the properties of solids and liquids affect how they behave. 	 <u>Changing Shape: Everyday Materials</u> <u>Investigation:</u> <i>Is sand a liquid or a solid?</i> I can ask simple questions.
Summer 1 (B) Phase: Y1/2	plant names evergreen deciduous observe	 <u>Plants</u> I know the following plants: daffodils, daisies, buttercups, roses, poppies, tulips and dandelions. I know that there are evergreen and deciduous trees. I know that plants need water, light and warmth to grow healthily. 	 <u>Plants</u> I can identify the basic structure of a flowering plant, including a stem, leaves, roots and petals. <u>Investigation:</u> Do plants need soil to grow? I can observe what I see and record this through drawing.
Summer 2 (B) Phase: Y1/2	life processes food chain observe	 Living Things I know that there are seven life processes that all living things do: movement, respiration, sensitivity, nutrition, excretion, reproduction and growth. I know the differences between things that are living, dead and things that have never been alive. 	 <u>Living Things</u> I can construct a simple food chain. <u>Investigation:</u> <i>Do plants breathe?</i> I can observe what I see and record this through drawing.
Autumn 1 (B) Phase: Y3/4	vibration source predict data logger equipment decibel	 Sound I know that sound is made from vibrations. I know the differences between patterns of vibrations. I know that sounds get fainter as the distance from the sound source increases. 	 <u>Sound</u> <u>Investigation:</u> <i>Can I change the pitch of a sound?</i> I can use results to draw simple conclusions, make predictions and suggest improvements. I can give oral and written explanations of results and conclusions. I can record findings using drawings, labelled diagrams, bar charts and/or tables.



	state of matter	States of Matter	States of Matter
2 (B) ۲3/4	water cycle evaporate condense melt solidify	 I know the differences between solid, liquids and gases. I know that some materials can change state. 	 I can investigate the stages of the water cycle. (This learning is supported by this half term's Y3/4 geography unit.)
tumn nase: '	Solidity		Do all solids melt at the same temperature?
Au			 I can set up simple practical enquiries. I can give oral and written explanations of results and
			conclusions.
			 I can record findings using drawings, labelled diagrams, bar charts and/or tables.
	series circuit	Electricity	Electricity
1 (B) /3/4	insulator	 I know now to construct a simple series electrical circuit. I know some common electrical conductors and 	Are all materials conductors of electricity?
oring 1 nase: \	switch component	insulators.	 I can compare and classify after choosing my own set of criteria
Pt St	component	 I know how to work safely when working with electricity. 	 I can give oral and written explanations of results and
	incisor	Animals Including Humans	conclusions. Animals Including Humans
	canine	I know the names of human teeth.	Investigation:
g 2 (B) : Y3/4	pre-molar	 I know the functions of different human teeth. I know the parts of the digestive system and their 	 I can set up simple practical enquiries.
Sprin ₆ Phase	enamel decay	functions.	I can give oral and written explanations of results and conclusions
	plaque		 I can record findings using drawings, labelled diagrams,
	fair test vertebrate	Living Things	bar charts and/or tables. Living Things
	invertebrate	 I know the difference between a vertebrate and an invertebrate 	 I can group plants into flowering plants and non- flowering plants
	amphibian	 I know the differences between different groups of 	nowering plants.
r 1 (B) Y3/4	reptile bird	vertebrates, including: fish, amphibians, reptiles, birds and mammals.	<u>Investigation:</u> Do plants prefer our playaround or East Park?
imme hase:	mammal	I know the differences between different groups of	 I can ask relevant questions, using different types of
Su P	Insect	invertebrates, such as snails and slugs, worms, spiders and insects.	 scientific enquiry to answer them. I can record findings using drawings, labelled diagrams,
			bar charts and/or tables.
			 I can use results to draw simple conclusions, make predictions and suggest improvements.
	food chain predator	 Animals Including Humans I know how food chains work. 	Animals Including Humans I can construct a food chain.
t 3)	prey	• I know the parts that different animals play in food chains.	
er 2 (F	consumer		Can a skull teach me about an animal's diet?
summ Phase	primary secondary		 I can use straightforward scientific evidence to answer questions
0,	tertiary		 I can give oral and written explanations of results and
	decomposer		conclusions.
	component symbol	 Electricity I know what the components of the circuit are 	Electricity Investigation:
	bulb	 I know the electrical symbol for each component. 	How does a change in voltage affect my circuit?
n 1 (B : Y5/6	buzzer voltage	 I know that the brightness of a bulb is determined by the number and voltage of cells used in a circuit. 	 I can record data and results using scientific diagrams, classification keys, tables, scatter graphs and/or line
vutum Phase	cell	• I know that the volume of a buzzer is determined by the	graphs.
4		number and voltage of cells used in a circuit.	conclusions, causal relationships and explanations in oral
			and written forms.
	light source reflect	Light Lknow that light appears to travel in straight lines 	Light Investigation:
(B)	reflective	• I know that we see things because light travels from light	Can I make a rainbow from a prism?
mn 2 (e: Y5/	retract prism	sources to our eyes or from light sources to objects and then to our eyes.	 I can record data and results using scientific diagrams, classification keys, tables, scatter graphs and/or line
Autu Phas		 I know that objects are seen because they give out or reflect light into the over 	graphs.
		 I know that light travels in straight lines so shadows have 	conclusions, causal relationships and explanations in oral
		the same shape as the objects that cast them.	and written forms.



Spring 1 (B) Phase: Y5/6	circulatory functions organs blood vessels causal relationship	 Animals including Humans I know the names of the main parts of the human circulatory system. I know the functions of the heart, blood vessels and blood. I know the impact of diet, exercise, drugs and lifestyle on the way the body functions. I know the ways in which nutrients and water are transported within animals, including humans. 	 <u>Animals including Humans</u> I can explore the work of scientists and scientific research about the relationship between diet, exercise, drugs, lifestyle and health. <u>Investigation:</u> Is there a relationship between my circulatory system and exercise? I can record data and results using scientific diagrams, classification keys, tables, scatter graphs and/or line graphs. I can report and present my findings, including conclusions, causal relationships and explanations in oral and written forms.
Spring 2 (B) Phase: Y5/6	identical variation adapt inherit evolve	 Evolution and Inheritance I know that fossils provide information about living things that inhabited the Earth millions of years ago. I know that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. I know that animals and plants are adapted to suit their environment in different ways. 	 Evolution and Inheritance I can explore how palaeontologists such as Mary Anning, Charles Darwin and Alfred Wallace developed their ideas of evolution. <u>Investigation:</u> How can rocks teach me about animals and plants? I can record data and results using scientific diagrams, classification keys, tables, scatter graphs and/or line graphs. I can report and present my findings, including conclusions, causal relationships and explanations in oral and written forms.
Summer 1 (B) Phase: Y5/6	characteristic criteria present findings	 Living Things I know how living things are classified into broad groups, including micro-organisms, plants and animals. I know the reasons for classifying plants and animals based on specific characteristics. 	 Living Things Investigation: Are all plants the same? I can compare and classify, after choosing my own set of criteria, and draw a conclusion from my findings. I can record data and results using scientific diagrams, classification keys, tables, scatter graphs and/or line graphs. I can report and present my findings, including conclusions, causal relationships and explanations in oral and written forms.
Summer 2 (B) Phase: Y5/6	circulatory function causal relationship	 <u>Animals Including Humans</u> I know the impact of diet, exercise, drugs and lifestyle on the way our bodies function. I know how the circulatory system enables the body to function. 	 <u>Animals Including Humans</u> I can explore the work of scientists and scientific research to understand the relationship between diet, exercise, drugs, lifestyle and health. <u>Investigation:</u> <i>Question to be chosen by the children.</i> I can plan different types of scientific enquiry to answer questions. I can record data and results using scientific diagrams, classification keys, tables, scatter graphs and/or line graphs. I can report and present my findings, including conclusions, causal relationships and explanations in oral and written forms.