

# CUSP SCIENCE Handbook

MIXED AGE SEQUENCE PROGRESSION AND SEQUENCE TABLES

September 2023

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# PROGRESSION AND SEQUENCE

Study module by study module from Year 1 – Year 6 Includes Tier 2 and Tier 3 vocabulary reference

#### **PURPOSE**

**REFERENCE**: teachers can clearly see the cumulative nature of the curriculum model as well as a quick point of reference to connect prior learning.

QUALITY ASSURANCE: subject leaders know the substantive concepts, knowledge and vocabulary that pupils should remember and use when running Pupil Book Study.





KS1	Autumn	Spring	Summer
Cycle 1	Living things and their habitats	Uses of everyday materials	Plants
2023 – 2024 (Year 2)	Animals, including humans	Revisit Living things and their habitats / materials	Revisit Living things and their habitats / Animals, including humans
C   0	Seasonal changes and daily weather	Everyday materials	Plants
Cycle 2 2024 – 2025 (Year 1)	Introduce Plants – (trees)	Revisit 1: Animals, including	Revisit 2: Plants, Animals including
(	Animals, including humans	humans	humans
LKS2			
Cycle 1 2023 – 2024	Living things and their habitats	Animals, including humans	Electricity
(Year 4)	States of matter		Sound
Cycle 2 2024 – 2025	Rocks Animals, including humans	Forces and magnets Plants	Plants continued
(Year 3)	Revisit Rocks	Fidits	Light
UKS2			
Cycle 1 2023 – 2024	Electricity	Animals including humans (water transport)	Living things and their habitats
(Year 6)	Animals including humans (circulatory system)	Light	Evolution and inheritance
Cycle 2 2024 – 2025	Properties and changes of materials	Forces (Gravity and Galileo)	Living things and their habitats
(Year 5)	Animals, including humans	Earth in space	Forces continued

CUSP Science Progression Tables – Keeley Alborough and Alex Bedford





Year group, Unit Title and Name	Substantive concept	Previous Learning	Big Ideas/Key Questions/Learning Foci	Tier 2 Vocabulary	Tier 3 Vocabulary
Y2	Biology	EYFS – Natural Word	Characteristics of living things	thrive	oxygen
Living things and			What is alive and what is not?	depend	nutrition
their habitats	The study of living	Y1 Plants		producer	respiration
1	things, including		What do all living things have in	consume	sensitivity
		Y1 Animals including humans	common?	prey	reproduction
	Characteristics of			predator	excretion
XOX	living things	Y1 Revisit Animals, including	Location of living things		
		humans	Where do plants and animals live?		
	Relationship of				
INTRODUCE	living things and	Y1 Second revisit of Animals,	What plants and animals live in our local		
Y2 Living things and	their	including human and plants	environment?		
their habitats	environment.				
COMMUNICATION OF THE PROPERTY			How living things are connected		
			What are food chains? How are they		
			connected?		
			Why do plants and animals need each		
			other?		





Year group, Unit Title and Name	Substantive concept	Previous Learning	Big Ideas/Key Questions/Learning Foci	Tier 2 Vocabulary	Tier 3 Vocabulary
Y2 Animals, including humans I  INTRODUCE Y2 Animals, including humans cusps.	Biology   The study of living things, including Reproduction Basic needs Diet and exercise for humans .	EYFS – Natural Word  Y1 Plants  Y1 Animals including humans  Y1 Revisit Animals, including humans  Y1 Second revisit of Animals, including human and plants	Animals and change REMEMBER: what is an animal?  How do animals change as they mature?  Air, water and food How do we change as we mature?  What do all animals need to stay alive?  Health and food Keeping healthy: why do we exercise?  Keeping healthy: why do we eat different types of food?	healthy survive exercise heart lungs muscles	hygiene larva pupa vertebrates invertebrates metamorphosis





Year group, Unit Title and Name	Substantive concept	Previous Learning	Big Ideas/Key Questions/Learning Foci	Tier 2 Vocabulary	Tier 3 Vocabulary
Y2 Use of everyday materials   INTRODUCE Y2 Uses of everyday materials	Chemistry*    the study of the composition, behaviour and properties   of matter	EYFS Natural world  Y1 Everyday materials	Materials What are materials used for? Categorise and compare wood, metal, plastic and glass. What are materials used for? Categorise and compare ceramics, rock, paper and card, and fabric.  Changes What happens when we squash, bend, twist or stretch a material?	artificial brittle extracted fabric manufactured natural	ceramic durable inflexible reflective rigid translucent
	*Adapted from BBC Bitesize		Purpose What's the right material for the job? What's the most absorbent material? Who invented waterproofing?		





Year group, Unit Title and Name	Substantive concept	Previous Learning	Big Ideas/Key Questions/Learning Foci	Tier 2 Vocabulary	Tier 3 Vocabulary
Y2 Revisit Living things and their habitats	Biology  The study of living things, including  Characteristics of living things  Relationship of living things and their environment  Chemistry*  the study of the composition,	Y1 Animals, including humans Y1 Plants Y2 Living things and their habitats Y2 Uses of everyday materials	Materials What is it made from?  Characteristics of living things Compare: what is alive, what is not alive and what has never been alive?  Apply it What materials do our pets have or need? Why is that?	artificial brittle extracted fabric manufactured natural  thrive depend producer consume prey	ceramic durable inflexible reflective rigid translucent  oxygen nutrition respiration sensitivity reproduction
	behaviour properties of matter			predator	excretion





Year group, Unit Title and Name	Substantive concept	Previous Learning	Big Ideas/Key Questions/Learning Foci	Tier 2 Vocabulary	Tier 3 Vocabulary
Y2 Plants	Biology 	EYFS – Natural Word Y1 Plants	Growing from a seed  How do seeds germinate and what	wither dormant	germination perennial carbon dioxide
	The study of living things, including		happens?  Growing from a bulb	mature bulb anchor	glucose
	Growth Health	Y1 Animals, including humans Y2 Living things and their	What happens when bulbs sprout?	sustain	cione
INTRODUCE Y2 Plants	Relationship of living things and	habitats	Healthy plants What do plants need to thrive and be healthy?		
CUSPA	their environment		What can happen if plants don't get the things they need?		
			What do I notice about plants around the school? How are they healthy? How are they unhealthy?		
			Show what you know How do seeds and bulbs grow?		
			What do plants need to be healthy?		





Year group, Unit Title and Name	Substantive concept	Previous Learning	Big Ideas/Key Questions/Learning Foci	Tier 2 Vocabulary	Tier 3 Vocabulary
Y2	Biology	EYFS – Natural Word	EXPLAIN-IT	wither	germination
<b>REVISIT</b> Plants,			How do seeds and bulbs grow?	dormant	perennial
and Animals,	The study of living	Y1 Plants		mature	carbon dioxide
including humans	things, including			bulb	glucose
		Y1 Animals, including humans	SUMMARISE-IT	anchor	clone
	Growth		What do I know about animals, including	sustain	
	Health	Y2 Animals, including humans	humans?		
	Relationship of	Y2 Living things and their			
	living things and	habitats			
Revisit Year 2 Plants and Animals, including	their environment	Y2 Revisit Living things and	INTERLEAVING and EXPLAIN-IT What do plants need to thrive and be	healthy survive	hygiene larva
humans	Panraduation	their habitats	healthy?	exercise	pupa
	Reproduction Basic needs			heart	vertebrates
	Diet and exercise			lungs	invertebrates
	for humans			muscles	metamorphosis
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#### KS1 Science Cycle 2 (Year 1 Content)

Year group, Unit Title and Name	Substantive concept	Previous Learning	Big Ideas/Key Questions/Learning Foci	Tier 2 Vocabulary	Tier 3 Vocabulary
Y1	Physics*	Managing Self	Seasons and weather	dawn	month
Seasons and		Manage their own basic	What are the four seasons?	dusk	season
weather	The study of	hygiene and personal needs,		mild	spring
Day and night	energy	including dressing, going to the	What's the weather like in Autumn,	rotate	summer
I	forces	toilet, and understanding the	Winter, Spring and Summer?	soaked	autumn
	mechanics	importance of healthy food		weather	winter
	waves	choices.	Day to night		
XOX	structure of atoms		Why does day become night?		
	physical universe 	The Natural World			
WEDGELOS	Earth in Space	Explore the natural world			
INTRODUCE V1 Changes	•	around them, making			
Y1 Changes Seasons and weather Day and night		observations and drawing			
CUSPA		pictures of animals and plants.			
		Explore the natural world			
		around them, making			
		observations and drawing			
		pictures of animals and plants.			
		Understanding some important			
		processes and changes in the			
		natural world around them,			
		including seasons and changing			
	*Adapted from BBC Bitesize	states of matter.			





Year group, Unit Title and Name	Substantive concept	Previous Learning	Big Ideas/Key Questions/Learning Foci	Tier 2 Vocabulary	Tier 3 Vocabulary
Y1 Plants, including trees I	Biology  I The study of living things, including  Common plants and trees in a local environment	Managing Self Manage their own basic hygiene and personal needs, including dressing, going to the toilet, and understanding the importance of healthy food choices.  The Natural World  Explore the natural world around them, making	Structure of plants What are the parts of a plant?  Wild and common plants What are wild plants and where do you find them?  What are garden plants and where do you find them?  Trees What makes a tree?	bud trunk branch bark seed wild	nutrients stem deciduous evergreen
Year 1 Plants, including trees Structure of plants I common and wild plants I trees  CUSPA		observations and drawing pictures of animals and plants.  Explore the natural world around them, making observations and drawing pictures of animals and plants.  Understanding some important processes and changes in the natural world around them, including seasons and changing states of matter.	What types of tree are there? (Trees that live around my school)  What's the difference between trees?		





Year group, Unit Title and Name	Substantive concept	Previous Learning	Big Ideas/Key Questions/Learning Foci	Tier 2 Vocabulary	Tier 3 Vocabulary
Y1	Biology	Managing Self	Animals		
Animals,		Manage their own basic	What is an animal?	blood	mammal
including	The study of living	hygiene and personal needs,		senses	amphibian
humans 	things, including	including dressing, going to the toilet, and understanding the	What types of animals are there?	young feathers	reptile herbivore
	Types of animals	importance of healthy food	What is similar and what is different?	fur	carnivore
	Food animals eat Senses	choices.	Eating	scales	omnivore
		The Natural World	What does food tell us about an animal?		
INTRODUCE  Y1 Animals, including humans		Explore the natural world around them, making observations and drawing pictures of animals and plants.	Senses What makes me an animal? What senses do I have?		
		Explore the natural world around them, making observations and drawing pictures of animals and plants.			
		Understanding some important processes and changes in the natural world around them, including seasons and changing states of matter.			





Year group, Unit Title and Name	Substantive concept	Previous Learning	Big Ideas/Key Questions/Learning Foci	Tier 2 Vocabulary	Tier 3 Vocabulary
Y1 Everyday materials  I INTRODUCE Y1 Everyday materials  CUSPA	Chemistry*  I the study of the composition, behaviour and properties of matter	Managing Self Manage their own basic hygiene and personal needs, including dressing, going to the toilet, and understanding the importance of healthy food choices.  The Natural World  Explore the natural world around them, making observations and drawing pictures of animals and plants.  Explore the natural world around them, making observations and drawing pictures of animals and plants.  Understanding some important processes and changes in the natural world around them, including seasons and changing states of matter.	Materials What are materials? What are things made of in school?  Properties How can I describe materials? Which materials are waterproof and which are not? Which materials are transparent and which are opaque? Use what you know What's the best material for the job? Why?	absorb rough smooth waterproof metal plastic	materials properties flexible transparent opaque physical
	*Adapted from BBC Bitesize				





Year group, Unit Title and Name	Substantive concept	Previous Learning	Big Ideas/Key Questions/Learning Foci	Tier 2 Vocabulary	Tier 3 Vocabulary
Y1	Biology	Y1 Animals including humans	Revisit and name it		
REVISIT			What features do animals have? Use the	blood	mammal
Animals,	The study of living		cues and single words in knowledge	senses	amphibian
including	things, including		note to focus on vocabulary.	young	reptile
humans			Consolidate by talking and writing	feathers	herbivore
	Types of animals		sentences on the page next to the	fur	carnivore
	Food animals eat		knowledge note.	scales	omnivore
XOX	Senses we have		Describe it		
			Retrieve and complete labels on the		
			knowledge organiser.		
REVISIT			What are the features of the animal		
Y1 Animals, including			group?		
humans			Go further by writing sentences or		
			drawing diagrams on the page next to it.		
			Describe it		
			Continue to describe the features of		
			each animal group.		
			Go further by writing sentences / draw		
			diagrams on the page next to it.		
			Sort it		
			Compare animal groups – what do you		
			notice is similar and what is different?		
			Go further by writing sentences / draw		
			diagrams on the page next to it.		





Substantive concept	Previous Learning	Big Ideas/Key Questions/Learning Foci	Tier 2 Vocabulary	Tier 3 Vocabulary
Biology	Y1 Animals including humans	Remember it		
	C	Animals, including humans	blood	mammal
The study of living		_	senses	amphibian
things, including		Elaborate it	young	reptile
		Animals, including humans	feathers	herbivore
Types of animals			fur	carnivore
Food animals eat			scales	omnivore
Senses we have				
	Y1 Plants	Remember it	bud	nutrients
		Plants	trunk	stem
and trees in a local			branch	deciduous
environment			bark	evergreen
			seed	
			wild	
	Biology  I The study of living things, including  Types of animals Food animals eat Senses we have  Common plants and trees in a local	Biology   The study of living things, including  Types of animals Food animals eat Senses we have  Common plants and trees in a local	Biology   The study of living things, including humans   Food animals eat Senses we have   Y1 Plants   Previous Learning   Big Ideas/Key Questions/Learning Food   Remember it   Animals, including humans   Elaborate it   Animals, including humans   Elaborate it   Animals, including humans   Previous Learning Food   Remember it   Animals, including humans   Elaborate it   Animals, including humans   Previous Learning Food   Remember it   Animals, including humans   Previous Learning Food   Previous Learning	Biology I The study of living things, including Food animals Food animals eat Senses we have  Common plants and trees in a local environment  Previous Learning Big Ideas/Rey Questions/Learning Foci Vocabulary  Remember it Animals, including humans  Flaborate it Animals, including humans  Flaborate it Animals, including humans  Feathers fur scales  Remember it Plants  Remember it Plants  Food animals eat Senses we have  Y1 Plants  Remember it Plants  Food animals eat Senses we have  Y1 Plants  Remember it Plants  Food animals eat Senses we have





Year group, Unit Title and Name	Substantive concept	Previous Learning	Big Ideas/Key Questions/Learning Foci	Tier 2 Vocabulary	Tier 3 Vocabulary
Y1	Biology	Managing Self	Structure of plants	bud	nutrients
REVISIT Plants,		Manage their own basic	What are the parts of a plant?	trunk	stem
including trees	The study of living	hygiene and personal needs,		branch	deciduous
I	things, including	including dressing, going to the	Wild and common plants	bark	evergreen
MODULAR		toilet, and understanding the	What are wild plants and where do you	seed	
SEQUENCE	Common plants	importance of healthy food	find them?	wild	
	and trees in a local	choices.			
	environment		What are garden plants and where do		
XOX		The Natural World	you find them?		
REVISIT  Year 1 Plants, including Trees  Brustone of plants i common and wide plants I trees  CUSPA		Explore the natural world around them, making observations and drawing pictures of animals and plants.  Explore the natural world around them, making observations and drawing pictures of animals and plants.  Understanding some important processes and changes in the natural world around them, including seasons and changing states of matter.	Trees What makes a tree? What types of tree are there? (Trees that live around my school). What's the difference between trees?		





Year group, Unit Title and Name	Substantive concept	Previous Learning	Big Ideas/Key Questions/Learning Foci	Tier 2 Vocabulary	Tier 3 Vocabulary
Y4	Biology	Y1 Plants	Living things	classification	vertebrate
Living things and			What are the characteristics of living	environment	invertebrate
their habitats	The study of living	Y1 Animals, including humans	things?	interdependence	biotic
1	things, including			interact	ecosystem
		Y2 Living things and their	Vertebrates and invertebrates	beneficial	species
	Grouping	habitats	What animals are vertebrates?	hierarchy	niche
XoX	Classification	Y2 Plants	What animals are invertebrates?		
INTRODUCE	Environmental	Y3 Plants	Plants		
Y4 Living things and their habitats	change and		What groups are plants classified in?		
CUSPA.	impact		Classification keys		
			What is classification? How do I use a		
			key?		
			Environmental changes		
			What happens if the environment in a		
			habitat changes?		





Year group, Unit Title and Name	Substantive concept	Previous Learning	Big Ideas/Key Questions/Learning Foci	Tier 2 Vocabulary	Tier 3 Vocabulary
Y4	Chemistry*	Y1 Everyday materials	What is matter?	permanent	evaporate
States of matter			What does 'state' mean?	particle	condense
1	the study of the	Y2 Use of everyday materials		solid	melt
	composition,		What are solids, liquids and gases?	liquid	matter
	behaviour and	Y3 Forces and magnets		gas	state
808	properties of matter	-	Melting: how do materials change state?	vapour	volume
	or matter		Evaporating: how do materials change		
INTRODUCE			state?		
Y4 States of matter			Condensing: how do materials change		
CUSPA			state?		
			Summary: how do materials change their state of matter?		





Year group, Unit Title and Name	Substantive concept	Previous Learning	Big Ideas/Key Questions/Learning Foci	Tier 2 Vocabulary	Tier 3 Vocabulary
Y4	Biology	Y1 Plants	Teeth and eating	expel	incisor
Animals,			What teeth do humans have?	compact	canine
including	The study of living	Y1 Animals, including humans	What do they do?	digestion	molar
humans	things, including			acid	enzyme
1		Y2 Living things and their	How does our mouth and teeth help	stomach	saliva
		habitats	digestion? What's the process?	intestines	peristalsis
	Structure				
8	of digestive system	Y2 Plants	Can teeth tell us what animals eat?		
		Y3 Plants	The digestive system		
INTRODUCE	Function		What are the parts of the digestive		
 Y4 Animals, including	of digestive	Y4 Living things and their	system?		
humans (Teeth, digestion and food chains)	system	habitats	What do they do?		
	Relationship		How does digestion work? What's the		
	food chains		process?		
			Food chains		
			What are food chains How do they work?		
			How do I construct and interpret a food chain?		
			SUMMARY How are teeth, digestion and food chains connected?		





Year group, Unit Title and Name	Substantive concept	Previous Learning	Big Ideas/Key Questions/Learning Foci	Tier 2 Vocabulary	Tier 3 Vocabulary
Y4	Physics*	Y1 Seasonal changes	Sources of electricity	associate	component
Electricity			What appliances use electricity? What	identify	electrical
	The study of	Y1 Everyday materials	sort of power makes them work?	portable	insulator
	energy			effect	electrical
	forces	Y2 Uses of everyday materials	Components	appliance	conductor
20	mechanics		Name it - what are the components in a	series	circuit
8	waves	Y3 Forces and magnets	simple series circuit?		hypothesis
	structure of atoms				variable
INTRODUCE	physical universe		Apply what you know		
Y4 Electricity	1		Diagnose it – what are the effects of		
14 Electricity	Earth in Space		changing circuit components and		
CUSPA	'		batteries?		





Year group, Unit Title and Name	Substantive concept	Previous Learning	Big Ideas/Key Questions/Learning Foci	Tier 2 Vocabulary	Tier 3 Vocabulary
Y4	Physics*	Y1 Seasonal changes	Properties	produce	vibrate
Sound			What is sound?	property	pitch
I	The study of	Y1 Everyday materials		source	volume
	energy		Movement	frequent	medium
	forces	Y2 Uses of everyday materials	How does sound travel?	regular	vacuum
XOX	mechanics			affect	sound wave
	waves	Y3 Forces and magnets	Pitch and loudness		
	structure of atoms		What is the pitch and loudness of		
INTRODUCE	physical universe	Y4 Electricity	sound?		
Y4 Sound					
	Earth in Space				
CUSPA	•				





## LKS2 Science Cycle 2 (Year 3 Content)

Year group, Unit Title and Name	Substantive concept	Previous Learning	Big Ideas/Key Questions/Learning Foci	Tier 2 Vocabulary	Tier 3 Vocabulary
Y3	Chemistry*	Y1 Everyday materials	Types	cemented	fossil
Rocks		Y2 Use of everyday materials	How are rocks formed?	compacted	igneous
I	the study of the			decay	magma
	composition,		What types of rocks are there?	prehistoric	metamorphic
	behaviour and			soil	minerals
XOX	properties		Change	transform	sedimentary
	of matter		Can rocks change?		
			How can we test a rock to see if it is		
INTRODUCE Y3 Rocks			limestone or chalk?		
CUSPA			Soil		
			Is soil just dirt? What makes soil?		
			Fossils		
			How are fossils formed?		
			Elaborate and remember rocks, soils and fossils.		
	*Adapted from BBC Bitesize				





Year group, Unit Title and Name	Substantive concept	Previous Learning	Big Ideas/Key Questions/Learning Foci	Tier 2 Vocabulary	Tier 3 Vocabulary
Y3	Biology	EYFS Natural world	Food	minerals	biceps
Animals,			What effect does the food we eat have?	skeleton	triceps
including	The study of living	Y1 Animals, including humans		skull	vertebrae
humans	things, including		Skeleton	voluntary	vitamins
I		Y2 Animals, including humans	Where is my skeleton and what does it	involuntary	proteins
	Amount and type		do?	nerves	carbohydrates
INTRODUCE	of nutrition Structure of humans and animals	Y2 Living things and their habitats	Muscle Where are my muscles and what do they do?		
Y3 Animals, including humans					





Year group, Unit Title and Name	Substantive concept	Previous Learning	Big Ideas/Key Questions/Learning Foci	Tier 2 Vocabulary	Tier 3 Vocabulary
Y3 Revisit rocks	Chemistry*    the study of the composition, behaviour and properties of matter	Y1 Everyday materials Y2 Use of everyday materials	Types How are rocks formed and what types are there?  Change Remember: how can rocks change?  Fossils	cemented compacted decay prehistoric soil transform	fossil igneous magma metamorphic minerals sedimentary
REVISIT and RETRIEVE Y3 Rocks	*Adapted from BBC Bitesize		Remember: how are fossils formed and how do we know?		





Year group, Unit Title and Name	Substantive concept	Previous Learning	Big Ideas/Key Questions/Learning Foci	Tier 2 Vocabulary	Tier 3 Vocabulary
Y3	Physics*	Y1 Seasonal changes	Contact force and friction	consequence	magnet
Forces and			What are contact forces?	contact	resistance
Magnets	The study of	Y1 Everyday materials		force	friction
1	energy		How do surfaces affect the motion of an	attract	repel
	forces	Y2 Uses of everyday materials	object?	north	pole
	mechanics			south	magnetic field
A	waves		How does friction affect moving objects?		
898	structure of atoms				
	physical universe		Non-contact force		
INTRODUCE	· -		What is a non-contact force?		
Y3 Forces and magnets	Earth in Space		How is this different to a contact force?		
			Magnetic force		
			How do magnets attract and repel?		
			Which materials are magnetic? Forces and magnetism summary.		





Year group, Unit Title and Name	Substantive concept	Previous Learning	Big Ideas/Key Questions/Learning Foci	Tier 2 Vocabulary	Tier 3 Vocabulary
Y3	Biology		Flowering plants	adapt	transpiration
Plants		Y1 Plants	What are the parts of a flowering plant?	essential	stoma
I	The study of living		What do they do?	glucose	pollination
	things, including	Y1 Animals, including humans		transport	stamen
			Food and survival	variety	pistil
8	Structure and function	Y2 Living things and their habitats	Do all plants need the same things to thrive and grow?	vital	photosynthesis
INTRODUCE	Food and survival	Y2 Plants	How do leaves make food for the plant?		
Y3 Introduce Plants	Life systems		How does water move through a plant?		
	Reproduction		Flower function What do flowers do?		
			What is pollination?		





Year group, Unit Title and Name	Substantive concept	Previous Learning	Big Ideas/Key Questions/Learning Foci	Tier 2 Vocabulary	Tier 3 Vocabulary
Y3	Physics*	Y1 Seasonal changes	Seeing	absence	constant
Light			Do we need light to see things?	cast (shadow)	dependent
I	The study of	Y1 Everyday materials		impenetrable	independent
	energy		Shadows	reflect	illuminate
	forces	Y2 Uses of everyday materials	How are shadows formed?	shadow	translucent
A	mechanics			source (light)	variable
898	waves	Y3 Forces and magnets	Changing variables		
	structure of atoms		What happens to the size of a shadow		
	physical universe		when the object moves closer to, or		
INTRODUCE			away from, the light source?		
Y3 Light	Earth in Space				
CUSPA.	Latti iii Space				





### UKS2 Science Cycle 1 (Year 6 Content)

Year group, Unit	Substantive	Previous Learning	Big Ideas/Key Questions/Learning Foci	Tier 2	Tier 3
Title and Name	concept			Vocabulary	Vocabulary
Y6	Physics	Y1 Everyday materials	<u>Do-it</u>	Component	Proton
Electricity		(chem)	What is electricity? How does it work?	Consequence	Neutron
1	Matter		How do we build and represent a	Systematic	Electron
	Forces and motion	Y2 Uses of everyday	series circuit?	Represent	Terminal
	Sound, light and	materials (chem)	What are the components in a series	Source	Series
XOX	waves		circuit?	Generate	Voltage
	Electricity and	Y3 Light			
	magnetism		<u>Test-it</u>		
INTRODUCE		Y4 States of matter	How does the number of cells and		
Y6 Electricity			voltage affect components in a		
,		Y4 Sound	circuit?		
CUSPA.					
		Y4 Electricity	<u>Diagnose-it</u>		
		,	What are the effects and		
		Y5 Forces	consequences of changing circuit		
			components and batteries?		
		Y5 Earth in Space			
		ı			





Year group, Unit Title and Name	Substantive concept	Previous Learning	Big Ideas/Key Questions/Learning Foci	Tier 2 Vocabulary	Tier 3 Vocabulary
Y6	Biology	Y1 Animals, including	Blood and blood vessels	Cell	Plasma
Introduce	I	humans	What is blood made of and why do	Chamber	Platelet
animals,	The study of living	identify animals –	we need it?	System	Artery
including	things	mammal, reptile, bird,	Why do our bodies need nutrients	Circulation	Capillary
humans	C+	amphibian, fish	and how are they transported?	Vessel	Vein
1	Structure and function of the		What is our circulatory system?	Clot	Ventricle
	circulatory system	Y2 Animals, including		Filter	Kidney
	Health and	humans	The functions of the heart	Expel	Bladder
A.	exercise	Reproduction and	What is our heart like inside?	Substance	Urine
X		basic needs	How does it work?	Function	Excretion
			Who influenced what we know about	Regulate	Toxin
INTRODUCE			our circulatory system?	Transform	Nutrient
 Y6 Animals, including		Y3 Animals, including			
humans (Circulatory System)		humans	The effect of exercise, drugs and		
CUSPA		Nutrition	lifestyle		
		Structure of humans	What can we do to keep healthy?		
		and animals	Present and explain what we know		
			about the circulatory system, nutrients		
		Y4 Animals, including humans	and keeping healthy.		
XOX		Human digestion	Digestion and circulation		
		Human digestion	Remember circulation and digestion:		
		Y5 Animals, including	how are these two systems		
INTRODUCE		humans	connected?		
Y6 Animals, including humans:					
water transportation		Lifespans and life	Removal of waste		
		cycles, growth and change	Where are the kidneys and what do		
		Change	they do?		
			Kanada a kanlular		
			Keeping healthy		
			How do kidneys keep us healthy?		





Year group, Unit Title and Name	Substantive concept	Previous Learning	Big Ideas/Key Questions/Learning Foci	Tier 2 Vocabulary	Tier 3 Vocabulary
Y6	Physics	Y1 Everyday materials	Properties of light	Impurity	Refraction
Light			How does light travel?	Emit	Incidence
1	Matter	Y2 Uses of everyday	What colour is light made of?	Absorb	Spectrum
	Forces and motion	materials		Constituent	Prism
	Sound, light and		Reflection	Filter	Lux
88	waves	Y3 Light	Reflection - how does light help us to	Artificial	Piment
250	<b>Electricity</b> and	_	see objects?		
	magnetism	Y4 States of matter	Which surfaces make the best		
INTRODUCE			reflectors?		
Y6 Light	Earth in Space	Y4 Sound			
			<u>Colour</u>		
September 1997 - Septem		Y4 Electricity	Why do we see objects as a particular		
			colour?		
		Y5 Forces			
			Refraction		
		Y5 Earth in Space	What happens to the appearance of		
		'	objects when placed in water?		





Year group, Unit Title and Name	Substantive concept	Previous Learning	Big Ideas/Key Questions/Learning Foci	Tier 2 Vocabulary	Tier 3 Vocabulary
Y6 Living things and their habitats   INTRODUCE Y6 Living things and their habitats	Biology I The study of living things, including Pioneering scientists Classification	Y1 Plants  Y2 Plants  Y3 Plants  Y3 Living things and their habitats  Year 4 Living things and their habitats  Y5 Living thing and their habitats	Pioneering scientists Who was the scientist Carl Linnaeus and what did he do?  Classification How do we classify vertebrates? How do we classify invertebrates we know? How do we classify invertebrates we don't know? How do we classify invertebrates we don't know?  Apply What animals can I classify? What animals and plants exist in my local environment?	Characteristic Interdependence Specific Categorise Primitive Hierarchy	Fungus Arthropod Taxonomy Kingdom Phylum Genus





Year group, Unit Title and Name	Substantive concept	Previous Learning	Big Ideas/Key Questions/Learning Foci	Tier 2 Vocabulary	Tier 3 Vocabulary
Y6 Evolution and Inheritance I	Biology I The study of living things	Y3 Plants  Y4 Living things and their habitats	Change over time  How have living things changed over time? How do we know?  How has life evolved over time?	Characteristic Adaptation Acquire Theory	Evolve Survival Species Clone
<b>8</b>	Change Evolution Adaption Environment	Y5 Living things and their habitats  Y6 Living things and their habitats	Biological change What is DNA and what does it do? Are all offspring identical to their parents?	Modify Generation	Inherit Fossil
INTRODUCE  Y6 Evolution and inheritance			Theories of evolution  Darwin and Wallace – what evidence did they share to argue the case for evolution?  Survival of the fittest - how have animals adapted and evolved to suit their environment?		





Year group, Unit Title and Name	Substantive concept	Previous Learning	Big Ideas/Key Questions/Learning Foci	Tier 2 Vocabulary	Tier 3 Vocabulary
Y5	Chemistry*	Y1 Everyday materials		property	atom
Properties and			Properties, mixtures and solutions	particle	molecule
changes of	the study of the	Y2 Uses of everyday materials	What properties do materials have?	separate	chemical
materials	composition,		How do we use them?	combine	(changes)
I	behaviour	Y3 Rocks		recover	physical
	properties		What is a mixture?	comparative	(changes)
	of matter	Y3 Light			reversible
XOX			What is a solution? (Solubility)		reaction
		Y4 States of matter	Separation of materials		
INTRODUCE Y5 Properties and changes of materials			How can we separate materials from a mixture? (Sieving and filtration)		
			How can we separate materials from a solution? (Evaporation)		
			Reversible and irreversible change		
			What changes are reversible?		
			What changes are irreversible?		





Year group, Unit Title and Name	Substantive concept	Previous Learning	Big Ideas/Key Questions/Learning Foci	Tier 2 Vocabulary	Tier 3 Vocabulary
Animals, including humans I	Biology I The study of living things  Lifespan and life cycle Change and growth	Y1 Animals, including humans Y2 Animals, including humans Y3 Animals, including humans Y4 Animals, including humans	Life What is the human timeline?  Growth How do we change into adults?  Compare How do human and animal lifespans compare?	development diverse unique generation mature equipped	adolescence puberty gestation embryo foetus womb





Forces   Remember gravity. rea	pposite eaction	pulley
	eaction	, ,
I Matter Y3 Light When is friction helpful and when is adv		gear
	dvantage	pivot
Forces and it not?	isplace	fulcrum
motion Y4 States of matter we	reight	lever
Sound, light and Resistance ma	nass	upthrust
waves Y4 Electricity What is the effect of air resistance?		
Electricity and Air resistance investigation		
magnetism Y4 Sound		
Y5 Forces   Earth in Space   Inspirational scientist		
Who was Galileo Galilei?		
Resistance		
What's the effect of water		
resistance?		
Levers, pulleys and gears		
How do levers help us?		
How do pulleys and gears help us?		





Year group, Unit Title and Name	Substantive concept	Previous Learning	Big Ideas/Key Questions/Learning Foci	Tier 2 Vocabulary	Tier 3 Vocabulary
Y5	Physics	Y3 Forces and magnetism	Position, relationship / movement of	luminous	orbit
Earth and Space			planets / spherical bodies.	phenomenon	axis
1	Matter	Y3 Light	What are the planets in our solar	attraction	crescent
	Forces and		system? (Planet comparison)	approximately	gravitational
	motion	Y4 States of matter		relative	waxing
A	Sound, light and		How does the view of the Moon	apparent	waning
ZSZ	waves	Y4 Electricity	change in a solar month? (Moon		
	Electricity and	-	phases, moon diaries)		
	magnetism	Y4 Sound			
INTRODUCE   Y5 Earth and Space	I		The effect of the Earth's rotation, tilt		
cusps	Earth in Space	Y5 Forces	and orbit has on day, night and seasons.		
			Why does the rotation of the Earth result in day and night?		
			Why is the Earth's tilt (axis) responsible for the seasons?		





Year group, Unit Title and Name	Substantive concept	Previous Learning	Big Ideas/Key Questions/Learning Foci	Tier 2 Vocabulary	Tier 3 Vocabulary
Y5 Living things and	Biology I	Y1 Plants	Mrs GREN – Recap of life processes	deduce process	embryo sexual
their habitats	The study of living things, including	Y2 Plants	Life Cycles What's the difference between a	re-form transform	metamorphosis incubate
	Structure	Y3 Plants	mammal and amphibian?	adolescence contrast	biochemical fertilisation
	Order Life cycles	Y3 Living things and their habitats	What's the difference between an insect and a bird?		
INTRODUCE Y5 Living things and their habitats	Reproduction	Year 4 Living things and their habitats	What is similar and what is different between the life cycle of a mammal, amphibian, insect and bird?		
			Inspirational scientists Who was Maria Merion and what did she do?		
			Reproduction How do living things reproduce?		
			Plants and animals – what's the life process of reproduction.		



