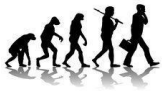
Bugle School

Aspire Academy Trust

Science Curriculum

	Autumn Term		Spring Term		Summer Term	
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	Marvellous Me!		How big is big?	Ready, Steady, Grow	Big adventures with little feet	I wonder what is at the seaside?
Year 1	Animals, including humans 		Everyday Materials 		Plants 	Seasons* 
Year 2	Uses of Everyday Materials 		Animals, including humans 		Plants 	Living Things and their Habitats 
Year 3	Rocks 	Forces and Magnets 	Light 		Plants 	Animals including humans 
Year 4	 Electricity	Sound 	States of Matter 		Animals, including humans 	Living Things and their Habitats 
Year 5	Earth and Space 	Forces 	Properties a Material and Changes of state 		Animals, including humans 	Living Things and their Habitats 

Year 6	Evolution and Inheritance	Living things and their habitats	Light	Electricity	Animals, including humans
					

	Observing over time	Pattern seeking	Research	Identifying & classifying	Comparative tests	Fair Tests
	Year 1					
Animals and Humans	How does my height change over the year? (1)	Do you get better at smelling as you get older? (2)		How can we organise all the zoo animals? (4)	Is our sense of smell better when we can't see? (5)	
Everyday Materials	What happens to shaving foam over time? (1)		Which materials can be recycled? (3)	Are all materials the same? Experiment in which ways materials properties are similar and different.	Which materials are the most absorbent? (5)	
Plants	How does my sunflower change each week? (1)	Is there a pattern in where we find weeds growing in the school grounds? (2)		How can we sort the leaves that we collected on our walk? (4)	Which type of compost grows the tallest sunflower? (5)	
Seasons and Changes	Is the weather the same every day ? (1)	Do trees with bigger leaves lose their leaves first in autumn? (2)		How would you group these things based on which season you are most likely to see them in? (4)	In which season does it rain the most? (5)	
	Year 2					
Everyday Materials	Would a paper boat float forever? (1)		How are plastics made? (3)	What materials could be used to make a good bike shed?	What materials could be used to make a good raincoat?	
Animals and Humans	How does a tadpole change over time? (1)		Is all food good for us?	Which offspring belongs to which animal? (4)	Do all animals start off small?	
Living things and their habitats		Which habitat do worms prefer – where can we find the most worms? (2)	How does the habitat of the artic compare to the habitat of the rainforest? (3)	How would you group things to show which are living, dead or have never been alive? (4)		
Plants	Do plants grow the same amount every day?	Do bigger seeds grow into bigger plants? (2)	How can we identify the trees that we observed on our tree hunt? (3)	Is everything on Earth alive?	Do cress seeds grow quicker inside or outside? (5)	
	Year 3					
Rocks	How does tumbling change a rock over time? (1)		Who was Mary Anning and what did she discover? (3)		Which soil absorbs the most water? (5)	How does adding different amounts of sand to soil affect how quickly water drains through it? (6)
Animals including Humans		Do male humans have larger skulls than female humans? (2)		How do skeletons of different animals compare? (4)		How does the angle that your elbow is bent affect the circumference of your upper arm? (6)

Light	When is our classroom the darkest? (1a) Is the Sun the same brightness all day? (1b)	Are you more likely to have bad eyesight and to wear glasses if you are older? (2)	How does the Sun make light? (3)			How does the distance between the shadow puppet and the screen affect the size of the shadow? (6)
Plants	What happens to celery when it is left in a glass of coloured water? (1)		What are all the different ways that seeds disperse? (3)		Which conditions help seeds germinate faster? (5)	How does the length of the carnation stem affect how long it takes for the food colouring to dye the petals? (6)
Forces and Magnets	If we magnetise a pin, how long does it stay magnetised for? (1)	Does the size and shape of a magnet affect how strong it is? (2)		Which materials are magnetic? (4)	Which magnet is the strongest? (5)	

	Observing over time	Pattern seeking	Research	Identifying & classifying	Comparative tests	Fair Tests
	Year 4					
Electricity	How long does a battery light a torch for? (1)			How would you group these electrical devices based on where the electricity comes from? (4)	Which material is the best conductor of electricity? (5)	How does the thickness of a conducting material affect how bright the lamp is? (6)
Sound	When is our classroom the quietest? (1)				Which material is best to use for muffling sound in ear defenders? (5)	How does the volume of a drum change as you move further away from it? (6a) How does the length of a guitar string/tuning fork affect the pitch of the sound? (6b)
Animals inc. humans	How does an egg shell change when it is left in cola? (1)		How do dentists fix broken teeth? (3)	What are the names for all the organs involved in the digestive system? (4a) How can we organiser our teeth into groups? (4b)		
States of matter	How does the level of water in a glass change when left on the windowsill? (1)	Is there a pattern in how long it takes different sized ice lollies to melt? (2)			Do all liquids freeze at the same temperature? (5)	How does the surface area of a container of water affect how long it takes to evaporate? (6)
Living things and their habitats		Where in our school is the most polluted? (2)	Can we find other animals to add complexity to our classification key? (3)	Can we use the classification keys to identify all the animals that we caught pond dipping? (4)		Does the amount of light affect how many woodlice move around? (6)
	Year 5					
Earth and Space	How does shadow length change over the day? (1)	Is there a pattern between the size of a planet and the time it takes to travel around the sun? (2)	What unusual objects did Jocelyn Bell Burnell discover? (3)	Can you observe and identify all the phases in the cycle of the moon? (4)		
Forces		Do all objects fall through water in the same way? (2)		Can you label and name all the forces acting on the objects in each of these situations? (4)	Which shape parachute takes the longest to fall? (5)	How does the surface area of a container affect the time it takes to sink? (6)
Properties & Changes of materials	How does a container of salt water change over time? (1a) How does a nail in salt water change over time? (1b)				Which type of sugar dissolves the fastest? (5)	How does the temperature of tea affect how long it takes for a sugar cube to dissolve? (6)
Animals and humans		Are the oldest children in our school the tallest? (2)		Can you identify all the stages in the human life cycle? (4)	Who grows the fastest, girls or boys? (5)	How does age affect a human's reaction time? (6)
Living things and their habitats	How does a bean change as it germinates? (1)		Can you explain the work of David Attenborough? (3)	What are the differences between the life cycle of an insect and a mammal? (4)		How does the level of salt affect how quickly brine shrimp hatch? (6)
	Year 6					
Evolution and Inheritance		Is there a pattern between the size and shape of a bird's beak and the food it will eat? (2)	What happened when Charles Darwin visited the Galapagos islands? (3)	Compare the skeletons of apes, humans and Neanderthals (4a) How are certain animals adapted to their environments? (4b)		
Cells	What happens to a piece of bread if you leave it on the windowsill for two weeks? (1)		What do different microorganisms do? Are they always harmful? (3)		Where in the school are the most microorganisms found? (5)	
Animals and Humans	How does my heart rate change over the day? (1)			Which organs of the body make up the circulatory system? (4)	Which types of exercise has the greatest effect on our heart rate? (5)	Can exercising regularly affect your lung capacity? (6)
Electricity			How has our understanding of electricity changed over time? (3)		Which make of battery lasts the longest? (5a) Which type of fruit makes the best fruity battery? (5b)	How does the voltage of the batteries in a circuit affect the brightness of the lamp? (6)
Light		Is there a pattern to how bright it is in school over the day? Is it the same in every classroom? (2)		Can you identify all the colours of light that make white light when mixed together? What colours do you get if you mix different colours of light together? (4)	Which material is most reflective? (5)	How does the angle that a light ray hits a plane mirror affect the angle at which it reflects off the surface? (6)

EYFS

	Autumn Term		Spring Term		Summer Term	
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Overview	**Marvellous Me!**		**How big is big?**	**Ready, Steady, Grow**	**Big adventures with little feet**	**I wonder what is at the seaside?**
Development matters objectives	ELG: The Natural World Explore the natural world around them, making observations and drawing pictures of animals and plants. Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.					
Suggested Content –	I show care for living things (pets) I can ask questions about aspects of my familiar world such as the place where I live or the natural world		Listen to children describing and commenting on things they have seen whilst outside, including plants and animals Changing seasons: winter Ice experiments Knowing there are different countries in the world (China) I understand the effects of changing seasons on the world around me	Growth & Change: frog life cycle I can tell you what a plant needs to grow (growing the beanstalk) I can understand the key features of the life cycle of a plant and animal	Growth & Change: butterfly life cycle I can show care and concern for living things in the environment I can start to develop an understanding of growth, decay and changes over time I can talk about some of the things I have observed such as plants, animals, natural and found objects	Listen to how children communicate their understanding of their own environment and contrasting environments through conversation and in play. I can explain animals that live at the seaside.
Key Vocabulary						
Observing over time						

Pattern seeking				
Research				
Identifying & classifying				
Comparative tests				

Year 1

	Autumn Term		Spring Term		Summer Term	
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Overview	**Animals, including humans** 		**Everyday Materials** 		**Plants** 	**Seasons*** 
Suggested Content – Yellow identifies NC statements	*Understand the parts of the body* *Associate parts of the body with different senses* [5] *Explore the different senses* *Make close observations of facial features* [2]	*Name and identify common animals* *Describe the structures of different animals* *Compare the structures of different animals* *Classify animals based on their features* [4] *Understand the features of fish, amphibians, reptiles and birds* *Group animals as fish, amphibians, reptiles and birds* *Identify what different animals eat* *Classify animals as carnivores, herbivores and omnivores*	*Identify between an object and how it is made* *Name a variety of everyday materials including plastic, wood, metal, glass, water and rock* *Identify and name materials based on their properties* *Compare and group together a everyday materials based on their physical properties.* *Consider and experiment with materials to identify and explain how their properties differ.*		*Identify a range of common plants including: Rose Bush, Sunflower and Dandelion by sight* *Examine a variety of local trees identifying deciduous and evergreen.* *Find weeds and examine their roots* [2] *Identify and describe the basic structure of a variety of common plants and trees.* *Note changes in growth of a sunflower* [1] *Experiment with different types of compost* [5] *Collect and sort leaves* [4]	*Observe and describe the changes across the four seasons.* *Compare leaf loss and tree size* [2] *Measure rainfall at different points in the year* [5] *Describe weather over a short period of time* [1] *Describe weather in different the seasons* [4] *Observe how day length varies* *Understand why animals hibernate* **unit runs throughout the year*
Key Vocabulary	*sight* *taste* *Skeleton* *Organ* *Growth* *hearing*	*carnivore* *omnivore* *herbivore* *energy* *growth* *habitat* *offspring* *Fish* *Amphibian* *Reptile* *Bird* *Mammal*	*Object* *Property* *Material* *Wood* *Plastic* *Glass* *Metal* *Water* *Rock*	*smooth* *waterproof* *absorbent* *hard* *soft* *stretchy* *stiff* *bendy* *rough* *dull*	*Warmth* *Energy* *Growth* *evergreen* *deciduous* *Flower* *Plant* *Tree* *branch* *root* *stem*	*Energy* *Freezing* *Melting* *Sun* *Wind* *Clouds* *Snow* *Ice* *Autumn* *Spring* *Summer* *Winter*
Observing over time	How does my height change over the year?		What happens to shaving foam over time?		How does my sunflower change each week?	Is the weather the same every day ?
Pattern seeking	Do you get better at smelling as you get older?				Is there a pattern in where we find weeds growing in the school grounds?	Do trees with bigger leaves lose their leaves first in autumn?
Research			Which materials can be recycled?			

Identifying & classifying	How can we organise all the zoo animals?	Are all materials the same? Experiment in which ways materials properties are similar and different.	How can we sort the leaves that we collected on our walk?	How would you group these things based on which season you are most likely to see them in?
Comparative tests	Is our sense of smell better when we can't see?	Which materials are the most absorbent?	Which type of compost grows the tallest sunflower?	In which season does it rain the most?

Year 2

	Autumn Term		Spring Term		Summer Term	
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Overview	**Uses of Everyday Materials** 		**Animals, including humans** 		**Plants** 	**Living Things and their Habitats** 
Suggested Content - Yellow identifies NC statements	*Examine and investigate different materials* *Describe properties of everyday materials* *Identify and describe the suitability of everyday materials for uses* *Apply knowledge of materials* (5)	*Research how the shapes of solid objects can be changed by Squashing, bending, twisting and stretching* *Explore fabrics for a particular use* *Investigate how materials can be shaped* *Research how plastics are made* (3) *Identify a new use for a material*	*Understand the need for different types of food and the right amount.* *Know that the different food groups support the body in different ways – dairy & calcium = strong teeth and bones.* *Describe the importance of exercise on humans* *Know that keeping clean, including washing and brushing teeth, is an important part of staying healthy*	*Notice that animals including humans have Offspring which grow into adults.* *Understand the basic needs of all animals (inc humans) – food, water and air* *Match the animals to their offspring.* *Observe tadpoles as they grow*	*Observe how plants grow from a seed/bulb into a plant* (1) *Know that plants need water to survive* *Know plants need light to survive* (5) *Know plants need a suitable temperature to survive* (5) *Compare the growth of different sized seeds* (2) *Know that living things move, grow, consume nutrients and reproduce; that dead things use to do these things, but no longer do; and that things that never lived have never done these things.*	*Explore and compare the difference between living and dead things* (4) *Identify things that most living things live in a habitat to which they are best suited.* *Identify and name a variety of plans and animals including their micro habitat.* *Research to compare two different habitats* (3) *Describe the features of a habitat that are suitable for woodlouse growth* (1) *Create a simple food chain*
Key Vocabulary	absorbent waterproof stretch twist flexible rigid movement material metal brick Paper properties		exercise hygiene allergy vitamins minerals Protein Fats Dairy Carbohydrates portion balanced active perspire	reproduction frogspawn tadpole Offspring adult survival generation	germinate nutrients energy sunlight condition moisture produce	suited suitable habitat micro-habitat food chain shelter feature life cycle source environment
Observing over time	Would a paper boat float forever? (1)		How does a tadpole change over time? (1)		Do plants grow the same amount every day?	
Pattern seeking					Do bigger seeds grow into bigger plants? (2)	Which habitat do worms prefer – where can we find the most worms? (2)

Research	How are plastics made? (3)	Is all food good for us?	How can we identify the trees that we observed on our tree hunt? (3)	How does the habitat of the artic compare to the habitat of the rainforest? (3)
Identifying & classifying	What materials could be used to make a good bike shed?	Which offspring belongs to which animal? (4)	How would you group things to show which are living, dead or have never been alive? (4)	Is everything on Earth alive?
Comparative tests	What materials could be used to make a good raincoat?	Do all animals start off small?	Do cress seeds grow quicker inside or outside? (5)	

Year 3

	Autumn Term		Spring Term		Summer Term	
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Overview	**Rocks** 	**Forces and Magnets** 	**Light** 		**Plants** 	**Animals, including humans** 
Suggested Content - Yellow identifies NC statements	*Understand what rocks are and how they can be classified* *Classify fossils by type* *Explain how fossils are formed* *Know that there are three kinds of rocks: igneous, sedimentary and metamorphic* *Examine different types of soils and understand what it is made up of* *Examine absorption of different types of soil* *Understand what fossils are and the legacy of Mary Anning* (3)	*Examine which types of objects are magnetic* (4) *Undertake experiments to measure the strengths of different magnets* *Classify materials based on whether they are magnetic or not.* *Understand how one magnet reacts to another* *Understand that magnets have two poles* *Predict how magnets will react based on which poles are facing each other.*	*Understand how light allows us to see different objects* *Examine different sources of light* (3) *Notice that light is reflected from different surfaces.* *Understand how sight changes as people get older* (2) *Experiment with how light travels through different materials* *Vary the position, shape and size of a shadow by blocking the light source with a solid object.* (6) *Understand the dangers of light and how you can protect yourself from them*		*Understand what a plant needs for growth* (5) *Describe the function of roots* (1) *Describe the function of the stem* (6) *Including investigating how water is transported within plants* *Describe the function of leaves* *Describe the function of flowers* *Understand the life cycle of a plant* *Explore the life cycle of the plant including: pollination, seed transformation and seed dispersal.*	*Examine the structure of a skeleton* (2) *Describe the functions of a skeleton* *Examine how skeletons vary between animals* (4) *Describe how muscles and bones work together* *Compare strengths of muscles* (6) *Investigate voluntary and involuntary muscles* *Learn how to care for our bones*
Key Vocabulary	*fossil* *sedimentary rock* *metamorphic rock* *igneous rock* *palaeontologist,* *weathering,* *molten rock,* *crust,* *tectonic plates,* *magma* *preserved* *erosion*	*Magnetic,* Non-magnetic, Pole, North, South, Sliding friction, Static friction Resist, Attraction Repulsion.	*Wave* *Ultraviolet* *Beam* *Image* *ray* *concave* *convex* *emit* *reflect* *transparent* *translucent* *opaque*		*fruit,* *nectar,* *anther, ovary, ovule,* *petal, pollen, stigma,* *style, stamen,* *function,* *exchange,* *dispersal,* *fertilization, insect* *transpiration* *respiration*	*bone* *x-ray* *tendon* *cartilage ligament* *voluntary muscle* *reflex joint* *hollow fracture*
Observing over time	How does tumbling change a rock over time? (1)	If we magnetise a pin, how long does it stay magnetised for? (1)	Is the Sun the same brightness all day? *Why do shadows change during the day?*		What happens to celery when it is left in a glass of coloured water? (1)	
Pattern seeking		Does the size and shape of a magnet affect how strong it is? (2)				Do male humans have larger skulls than female humans? (2)
Research	Who was Mary Anning and what did she discover? (3)		How does the Sun make light? (3)		What are all the different ways that seeds disperse? (3)	
Identifying & classifying	*Are all rocks made in the same way?*	Which materials are magnetic? (4)				How do skeletons of different animals compare? (4)

Comparative tests	Which soil absorbs the most water? (5)	Which magnet is the strongest? (5)		Which conditions help seeds germinate faster? (5)	
Fair Tests			How does the distance between the object and the screen affect the size of the shadow? (6)	How does the length of the carnation stem affect how long it takes for the food colouring to dye the petals? (6)	How does the angle that your elbow is bent affect the circumference of your upper arm?

Year 4

	Autumn Term		Spring Term		Summer Term	
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Overview	**Electricity** 	**Sound** 	**Animals, including humans** 	**States of matter** 	**Living things and their habitats** 	
Suggested Content - Yellow identifies NC statements	*Identify and group appliances that run on electricity (4)* *Construct simple series cells using common electrical parts* *Identify whether a lamp will light in a circuit including using a switch to open and close the circuit* *Investigate whether materials are conductors or insulators or electricity (5)* *Examine the thickness of a conductor on the brightness of a bulb* *(6) Investigate battery life*	*Investigate the volume of sound at different points in the day (1)* *Explore how sounds are made by vibrations* *Explore how sounds travel through different objects (5)* *Investigate how sounds change with distance from the source (6a)* *Find patterns between the volume of a sound and the strength of the vibrations it produces* *Explore how the pitch of an object can be changed(6b)*	*Identify types of teeth in humans (4b)* *Describe the functions of different teeth types* *Compare teeth between carnivores and herbivores* *Examine tooth decay (1)* *Describe how teeth should be cared for (3)* *Understand the purpose of the digestive system* *Describe the functions of the parts of the digestive system (4a)* *Examine and describe a food chain* *Construct a food chain using provided information*	*Examine features of the three states of matter* *Classify materials and objects by state of matter* *Investigate how quickly solids melt (2)* *Find out if all liquids freeze at the same temperature (5)* *Investigate evaporation pace (6) (1)* *Understand condensation Examine how water changes state in nature*	*Recognise different ways animals can be grouped* *Classify animals using classification keys (4)* *Add animals to a classification key (3)* *Examine how a light changes the behaviour of woodlice (6)* *Recognise that environments can change and that this can sometimes pose dangers to living things.*	
Key Vocabulary	*electricity* *electron* *battery* *motor* *bulb* *circuit* *switch* *insulator* *conductor* *national grid*	*Eardrum* *sound waves* *decibel* *frequency* *transverse wave* *longitudinal wave* *muffle* *vibration* *vacuum* *volume* *pitch*	*digestion,excretion, peristalsis, anus, duodenum, small intestine, large intestine, stomach, rectum, oesphagus, tongue, saliva, acid, bile, enzymes, incisors, canines, molars, predator, prey, producer, consumer, primary, secondary, tertiary*	*solid* *liquid* *gas* *grains* *melting* *freezing* *evaporation* *condensation* *transpiration* *precipitation*	*habitat* *ecology* *bacteria* *reintroduce* *pesticide* *complacent* *woodland* *ecosystem* *interdependent*	
Observing over time	*How long does a battery light a torch for?*	*When is our classroom the quietest?*	*How does an eggshell change when it is left in cola?*	*How does the level of water in a glass change when left on the windowsill?*		
Pattern seeking				*Is there a pattern in how long it takes different sized ice cubes to melt?*		
Research			*How do dentists fix broken teeth?*		*Can we find other animals to add complexity to our classification key?*	

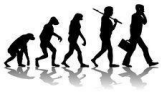
Identifying & classifying	*How would you group these electrical devices based on where the electricity comes from?*		*What are the names for all of the organs involved in the digestive system?* *How can we organise our teeth into groups?*		*Can we use the classification key to identify all the animals that we caught in the pond?*
Comparative tests	*Which materials is the best conductor for electricity?*	*Which material is the best to use for muffling sound?*		*Do all liquids freeze at the same temperature?*	
Fair Tests	*How does the thickness of a conducting material affect how bright the lamp is?*	*How does the volume of a drum change as you move further away?*		*How does the surface area of a container of water affect how long it takes to evaporate?*	

Year 5

	Autumn Term		Spring Term		Summer Term	
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Overview	**Earth and Space** 	**Forces** 	**Properties of materials and changes of state** 		**Animals, including humans** 	**Living things and their habitats** 
Suggested Content - Yellow identifies NC statements	*Describe the movements of the planets in the solar system* *Compare key features of the planets in the solar system (2)* *Describe how our knowledge of the solar system has changed over time (3)* *Explain why day and night occur* *Investigate how shadows change throughout the day* *Identify and order the phases in the cycle of the moon (4)*	*Understand what a force is and how it can affect an object* *Investigate friction caused by different materials* *Investigate whether the mass of an object affects how quickly it falls to the ground* *Explore the effects of air resistance (5)* *Understand the effects of water resistance and up-thrust (2) (6)* *Explain how simple levers work*	*Consolidate our knowledge of state of matter* *Classify materials based on their conductivity* *Understand and explain how simple solutions are made* *Investigate how the temperature of water affects how much sugar can be dissolved? (6)* *Investigate which type of sugar dissolves the fastest (5)* *Examine how a container of salt changes over time (1a)* *Utilise evaporation as a method for separation of a solution* *Make informed decisions about how to separate solutions and mixtures* *Examine how a nail in salt water changes over time (1b)* *Understand that some changed can be reversed whilst others cannot*		*Identify all stages in the human life cycle (4)* *Understand changes which happen during adolescence* *Compare growth by both age and gender (2) (5)* *Describe changes that happen as humans develop to old age* *Investigate how age affects a human's reaction time (6)* *Examine gestation in a variety of animals*	*Research about a famous naturalist (3)* *Order the life cycle of a house fly* *Seek patterns in life cycles of different animals (4)* *Classify and group animals based on their life cycles* *Grow plants from parts of a parent plant (1)* *Describe the life processes of reproduction in some plants and animals.*
Key Vocabulary	*universe* *orbit* *Planet* *solar system* *axis* *spherical* *revolve* *rotate* *gravitational pull* *solar eclipse* *lunar eclipse,* *star,* *universe,* *constellation* *rotation*	*air resistance* *water resistance* *Acceleration* *Buoyancy* *upthrust* *friction* *Pivot* *newton* *mass* *lever* *fulcrum* *pulley* *equilibrium*	*chemical change* *physical change* *particle* *solution* *substance* *sieve* *filter* *evaporate* *polymers* *reversible/irreversible* *dissolve,* *soluble,* *insoluble,* *solvent,* *saturation,* *crystallization,* *thermal,* *chemistry*		*gestation* *memory* *puberty* *dormant* *fertilisation* *chromosome* *degeneration* *reproduce* *adolescence* *hormone* *life cycle,* *life span,* *embryo,* *womb,* *weaned,* *adolescence,* *pupa,* *larva,* *chrysalis,* *caterpillar,* *tadpole,* *hatchling,* *fledgling,* *insect*	*mammal* *amphibian* *insect life-cycle* *naturalist* *asexual reproductio n sexual* *tuber* *diversity*
Observing over time	*How does shadow length change over the day?*		*How does a container of salt water change over time?* *How does a nail in saltwater change over time?*			*How does a bean change as it germinates?*

Pattern seeking	*Is there a pattern between the size of a planet and the time it takes to orbit the sun?*	*Do all objects fall through water in the same way?*		*Are the oldest children in our school the tallest?*	
Research	*What unusual objects did Jocelyn Bell Burnell discover?*				*Can you explain the work of Sir David Attendborough?*
Identifying & classifying	*Can you observe and identify all the phases in the cycle of the moon?*	*Can you label and name all of the forces acting on the objects in each of these situations?*		*Can you identify all of the stages in the human life cycle?*	*What are the difference between the lifecycle of an inset and a mammal?*
Comparative tests		*Which shape parachute takes the longest to fall?*	*What type of sugar dissolves the fastest?*	*Who grows the fastest, girls or boys?*	
Fair Tests		*How does the surface area of a container affect the time it takes to sink?*	*How does the temperature of tea affect how long it takes for a sugar cube to dissolve?*	*How does age affect the human reaction time?*	

Year 6

	Autumn Term		Spring Term		Summer Term	
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Overview	**Evolution and Inheritance** 	**Living things and their habitats** 	**Light** 	**Electricity** 	**Animals, including humans** 	
Suggested Content - Yellow identifies NC statements	*Understand how animals are adapted to their environment* (4b) *Explain the discoveries of Charles Darwin* (3) (4a) *Describe how variations become adaptations* (2) *Describe types of fossils* *Understand the evidence for evolution* *Detail the process of fossilisation* *Explain how selective breeding in animals is utilised*	*Know that there are three types of micro-organism: viruses, fungi and bacteria* *Know that germs are disease-causing micro-organisms* *Know how living things are classified into broad groups according to common observable characteristics.* *Give reasons for classifying plants and animals based on specific characteristics*	*Examine brightness over the day in different locations* (2) *Explore the reflectiveness of materials including the understanding that we can see as a result of light reflecting off of objects and back to our eyes.* (4) *Understand that light travels in straight lines* *Predict light direction using mirrors* (6) *Investigate shadow length and understand how shadow size can be altered* *Explore the shapes of shadows of different objects* *Experiment with light refraction* (4)	*Understand how static electricity is created* *Investigate the creation of static electricity* *Understand how the understanding of electricity developed* (3) *Investigate resistance in bulbs* (5a) (6) *Measure amplitude from different energy sources* (5b) *Use recognised symbols when representing simple circuits in a diagram.* *Create an electromagnet*	*Summer 1* *Describe the ways in which nutrients and water are transported within animals including humans* *Describe the respiratory system* (6) *Know and understand the importance of the skeleton recalling the key parts of the skeleton.* *Know that the heart and lungs are organs protected by the ribcage and understand this as a part of the skeleton* *Summer 2* *Describe the circulatory system* (4) *Describe how the heart pumps blood around the body* (1) *Examine the effects of exercise on the pulse* (5) *Understand the impact of smoking on the lungs* *Explain the impact of a poor diet on the circulatory system*	
Key Vocabulary	*variation offspring, ancestor natural selection fossilisation decompose sediment dissolve inherit*	***micro-organism, virus, thorax, arthropod, abdomen, arachnid, antenna, jointed limbs***	*light rays haze distort primary colour secondary colour variance obstruct alteration refraction fluorescent*	*static electricity charge electron insulator conductor short circuit fuse electromagnet detector synchronise*	*displace trachea cilia heart attack body, cranium, mandible, sternum, vertebrae, femur, tibia, fibula, patella, humerus, radius, ulna* *artery, aorta, atrium, blood vessels capillary, circulatory system, vein, pulse, ventricle, replenished, resting heart rate, circulation, blood vessels, pulse, BPM, oxygen debt, body, cranium, mandible, sternum, vertebrae, femur, tibia, fibula, patella, humerus, radius, ulna*	

Observing over time		What happens to a piece of bread if you leave it on the windowsill for two weeks? (1)			How does my heart rate change over the day? (1)
Pattern seeking	Is there a pattern between the size and shape of a bird's beak and the food it will eat? (2)		Is there a pattern to how bright it is in school over the day? Is it the same in every classroom? (2)		
Research	What happened when Charles Darwin visited the Galapagos islands? (3)	What do different microorganisms do? Are they always harmful? (3)		How has our understanding of electricity changed over time? (3)	
Identifying & classifying	Compare the skeletons of apes, humans and Neanderthals(4a) How are certain animals adapted to their environments? (4b)		Can you identify all the colours of light that make white light when mixed together? What colours do you get if you mix different colours of light together? (4)		Which organs of the body make up the circulatory system? (4)
Comparative tests		Where in the school are the most microorganisms found? (5)	Which material is most reflective? (5)	Which make of battery lasts the longest? (5a) Which type of fruit makes the best fruity battery? (5b)	Which types of exercise has the greatest effect on our heart rate? (5)
Fair Tests			How does the angle that a light ray hits a plane mirror affect the angle at which it reflects off the surface? (6)	How does the voltage of the batteries in a circuit affect the brightness of the lamp? (6)	Can exercising regularly affect your lung capacity? (6)