

Holme Community School – Long Term Curriculum Planning

Subject	Science	Cycle	A
What themes/ golden threads weave through the curriculum?		<ul style="list-style-type: none"> ➤ To link learning to four key conceptual models to support deeper understanding. (The particle model, the force-arrow model, the energy transfer model, the big picture model(advanced organiser) ➤ Biology: Plants, Animals Including Humans, Living Things and their habitats, Seasonal Changes, Evolution and Inheritance, Rocks and Soils ➤ Physical Processes (Physics): Everyday Materials, Forces and Magnets, Light, Sound, Electricity, Earth and Space ➤ Chemical Processes (Chemistry): States of Matter 	
Why were these themes chosen?		<p>These are the aims of the national curriculum. The four conceptual models allow children to connect learning from across the science curriculum and supports them to communicate abstract conceptual ideas.</p>	
What are the overall aims of this curriculum?		<ul style="list-style-type: none"> ➤ To ensure that content taught is underpinned by high quality and applicable scientific enquiry. ➤ To embed working scientifically skills within each unit taught, not taught in isolation. ➤ To embed clear vocabulary progression across each topic taught. ➤ To link learning to four key conceptual models to support deeper understanding. (The particle model, the force-arrow model, the energy transfer model, the big picture model) ➤ To develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics ➤ To develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them ➤ To ensure children are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future 	

Year Group		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	Topic Heading: Discovery in Design <div style="border: 1px solid black; padding: 5px; width: fit-content;"> What are the building blocks for this subject to ensure children are KS1 ready? </div>	<u>Understanding the World ELG</u> Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes.					

Year 1/2	Topic Heading:	Animals including humans	Forces	Plants	Everyday Materials	Light
	Link to themes/key concepts	Biology naming animals and body parts	Physics Pushes and Pulls	Biology Name and structure of plants	Chemistry Names and properties of materials	Physics Light and shadows
Key Knowledge (This is what they will learn over the topic sessions and what they will be assessed on)	<p>What are the parts of the body?</p>  <p>What are our senses? The 5 main senses are sight with our eyes, smell with our nose, sound with our ears, taste with our tongue and touch with our hands and feet.</p> <p>Are there different kinds of animals?</p> <p>Mammals -Mammals are warm-blooded creatures. Most have hair. They give birth to live young. They produce milk to feed them.</p> <p>Birds -Birds are warm-blooded. They lay eggs/ often have feathers and wings. Most have hollow bones & can fly.</p> <p>Reptiles -Reptiles are cold-blooded. They lay eggs/ have scales. They breathe through lungs.</p> <p>Fish -Fish are cold-blooded and live under water. They breathe through gills.</p> <p>Do animals feed in different</p>	<p>How do you move things? To move an object, you must place a force on it, this can be a push or pull to get the object to move.</p> <p>How can we make objects move further? Forces can make an object move or stop, speed them up or slow them down. If you push a toy car it moves, if you push it harder it moves faster. Forces can also make objects change direction or speed.</p> <p>How can we move heavy objects? A lighter object needs less force to move than a heavier object. For example, you could push an empty box easily, but a filled box would be heavier and that would make it harder, it would need more force to move.</p>	<p>What are the parts of the plants? The main parts of a plant are petal, stem, leaf, roots and anther. The main function of a leaf is to produce food</p> <p>Can you name different types of plants? Children can name a variety of common plants including; Daisy, dandelion, poppy, buttercup, dock, snowdrop, cow parsley, clover, shepherds' purse and rose.</p> <p>How do trees survive in winter? During Autumn leaves turn shades of yellow and red before falling off completely. It's a way of protecting the tree and making sure they survive winter. Leaves die during the winter months. If dead leaves stayed on the trees, and new, working ones didn't grow in their place, the trees would have no way of processing food for themselves.</p> <p>Where can I find certain plants? Plants can be found anywhere from gardens, parks, fields and the country side. Many plants are wild flowers</p> <p>Where can plants live? Plants grow nearly everywhere on Earth. Most plants grow in soil. They get the water and nutrients they need from the soil. But some plants do not need soil.</p>	<p>What are objects made from? A material is any substance that has a name. For example: chalk, paper, wood, iron, air, water, clay, plastic, rubber, stone, leather, wax. Everything is made up of materials.</p> <p>Naming everyday materials Materials are all around us! They're the substance or matter that every object is made from. Here are a few examples of materials we come into contact with daily: paper; wood; plastic; glass; water; chalk; ceramics; composites (two or more materials combined) rubber; stone</p> <p>What are the properties of materials? The property of a material is something about it that we can measure, see or feel and helps us decide whether or not it is the best material.</p> <p>Being able to compare the properties of materials</p> <p>Which materials work best for a given situation Each material can be used to make a range of different things; for example, wood can be used to make tables, chairs, spoons, pencils, shoes, doors, floors and many more things.</p>	<p>Where does light come from? Light comes from different sources called light sources; our main natural light source is the sun. Other sources include fire, stars and man-made light sources such as light-bulbs and torches.</p> <p>How can you make a dark place light? To make a dark place light you need to introduce a light source</p> <p>How can you make a light place dark? To make a light place dark you need to remove the light source</p> <p>Where do we find shadows? A shadow is created when an opaque material or object is placed in front of a light source and prevents the light from passing through.</p> <p>Are all the shadows the same? Shadows can change depending on the position of the light source. The closer to the light source an object is, the bigger the shadow will be. This is because the object blocks more of the light</p> <p>How can we stay safe in the dark?</p>	

		ways? Animals eat different diets and this is dependent on whether they are carnivores, omnivores or herbivores.			An object can be made out of different materials used together; for example, a chair can be made from metal and wood and plastic. Some materials maybe more suitable than others for particular uses or for manufacturing specific objects; for example, metal shoes wouldn't be very comfortable and a cardboard door wouldn't be very strong.	They are safer if they are visible, and you can easily add high-visibility reflective strips on their clothing, school bags or bike helmets. Additionally, they could carry a torch.
National Curriculum Objectives to be covered	National Curriculum Objectives to be covered	<ul style="list-style-type: none"> -identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. -identify and name a variety of common animals that are carnivores, herbivores and omnivores. -describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). -identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. 	<ul style="list-style-type: none"> -Recognise a push or a pull as a force needed to move an object. -Recognise that a force can be bigger or smaller and acts in a particular direction. -Explore how to push objects further with more force. -Explore how to push/pull heavier objects with more force. 	<ul style="list-style-type: none"> -Identify and name a variety of common plants, including garden plants, wild plants and trees, and those classified as deciduous and evergreen -Identify and describe the basic structure of a variety of common flowering plants, including roots, stem/trunk, leaves and flowers 	<ul style="list-style-type: none"> -Distinguish between an object and the material from which it is made -Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock -Describe simple physical properties of a variety of everyday materials -Compare and group together a variety of everyday materials on the basis of their simple physical properties 	<ul style="list-style-type: none"> -Observe the apparent movement of the sun during the day -Observe light coming from a light source. -Observe light being blocked by an object to create a shadow. -Investigate how to make a place lighter and darker. - Know light and dark safety.
Key Subject Specific Vocabulary to be taught	Key Subject Specific Vocabulary to be taught	Invertebrate, Insect, Amphibian, reptile, mammal, Carnivore, Herbivore, Omnivore, Senses	Push, pull, force, movement, light, heavy, lighter, heavier, more, less, direction	Plant, roots, stem, trunk, branches, leaves, flower, fruit, bulb, seed	Solid, bending, squashing, twisting, hard/soft, shiny/dull, transparent, opaque, waterproof, non-waterproof, absorbent/non,	Light, dark, lighter, darker, light source, light ray, shadow, day, length.
Areas of working scientifically covered	Areas of working scientifically covered	Explaining Science Classification	Explaining Science Designing experiments	Explaining Science Classification	Explaining science Classification	Explaining science Data, table and graphs

	Assessment Activities/ Key knowledge	Children to produce a poster that reflects all the key knowledge covered	Children to independently create a pictogram showing the force used to move different objects	Plan an investigation independently using a template for support involving plants	Use their knowledge to design an umbrella to keep a teddy bear dry using their knowledge of materials	Review an investigation (which material blocks the light?)
Year 3/4	Topic Heading:	Electricity	Sound	Animals including humans	Plants	Light
	Link to themes/ key concepts	Physics simple circuit, switches, conductors and insulators Model: Energy Transfer	Physics fainter sounds further away, vibrations, pitch and volume Model: Energy Transfer	Biology Teeth, eating and digestion Model: Energy Transfer & Big Picture	Biology Function of plants and lifecycles Model: AO	Physics Dark is the absence of light and shadows Model: Energy Transfer
	Key Knowledge (This is what they will learn over the topic sessions and what they will be assessed on)	Electricity in our homes Electricity is a type of energy, electricity is used to power numerous household appliances, for example laptops, TVs, fridges, microwaves, toasters, ovens and lights/ lamps. Life would be very different without it! Making a working circuit A circuit is a device made of other, smaller electrical devices that can move the flow of electricity through itself to power larger devices. Every complete circuit must have a power supply. The power supply could be the mains, or it could be a battery . Using a switch in a circuit Switches are used to control circuits. They can break a circuit - and so switch bulbs, motors and buzzers off - or complete a circuit - and so switch them on again. Many products work by using electricity. Electrical conductors and insulators Conductors allow electricity to flow freely through it, whereas an insulator is a material that doesn't allow electricity to pass through. In conductors, some of the	What is sound? Sound is an energy that is made by vibrations. Sounds are made when objects vibrate the air nearby. When any sort of object vibrates, it causes air particles to move. Whilst doing so, these particles bump into each other, which makes them vibrate and causes sound waves. How does sound travel to our ears? Sound (or vibrations) enters the ear through the ear canal. When sound waves reach our ear, it travels through the ear canal and hits the eardrum, causing vibrations. The eardrum sends these vibrations to three tiny bones in the middle of the ear. These are called the malleus, incus, and stapes. How can we change the volume of sound? The volume of a sound is how loud or quiet the sound is. Sounds are vibrations that travel through the air. A nail hit	Different types of teeth There are different types of teeth: -Incisors are used for biting and cutting food. They are at the front of your mouth and you have eight of them, four at the top and four at the bottom. -Canines are used for ripping and tearing food. Your canines are either side of your incisors and you have four of them. The word 'canine' means 'something connected to dogs'. As you can see, canine teeth are often pointy, a bit like the teeth of a dog or wolf. -Premolars and molars are towards the back of your mouth. They are bigger and wider than incisors and canines and this is because of their functions. Premolars are used for holding and crushing food. At the very back of the mouth, are molars (bigger versions of premolars). They chew and grind up food, working with your tongue to prepare food for swallowing. How do you care for your teeth? Keeping our teeth clean is important for good dental health. A regular routine will help keep teeth healthy and decay-free. Brush your teeth with fluoride toothpaste twice a day for about 2 minutes to help keep your teeth and mouth healthy. (You should start brushing your baby's teeth as soon as the first tooth comes through. This is	Naming the parts of a plant There are several parts of a plant, such as: flower; stem; leaf; roots. There are even more parts of a plant that has flowered, including: style; ovary; stamen; ovule; pollen; anther; filament What conditions do plants need to grow? Plants need: water, light, soil (nutrients), air and space to stay alive. But why? If a plant is not watered enough, its stem will be fragile and have very dry leaves. It will eventually die. If a plant does not have enough light, it will grow to be tall and flimsy as it searches for light. It will probably die. How does water get around the plant? Roots absorb water from the soil where the plant is planted. Then, the water travels through the plant to the stem. Water is sucked up through the stem (just like the way you suck up a drink through a straw!) and then the stem passes water on to the leaves. Water evaporates from the leaves into the atmosphere. This process is called transpiration. The plant then sucks up more water with its roots,	What is light and where does it come from? Light comes from a light source, like the sun, stars and flames, as well as electric bulbs and lamps. Without light, we wouldn't be able to see the world around us What materials reflect light? When light from an object is reflected by a surface, it changes direction. It bounces off the surface at the same angle as it hits it. Smooth, shiny surfaces such as mirrors and polished metals reflect light well. Dull and dark surfaces such as dark fabrics do not reflect light well What materials let light through? Materials that allow most all light to pass through them are called transparent. Examples of transparent items are glass, water, and air. Those materials that allow some light to pass through them are called translucent and include

		<p>electrons are free electrons and move. In insulators, the electrons cannot move freely and therefore no electric current can be produced.</p>	<p>hard with a hammer will make a strong vibration, which means it will make a loud sound. A nail hit gently with a hammer will make a weak vibration, which means it will make a quiet sound.</p> <p>How can we change the pitch of a sound? The pitch of a sound is how high or low the sound is. A high sound has a high pitch and a low sound has a low pitch. A tight drum skin gives a higher pitched sound than a loose drum skin.</p>	<p>usually at about 6 months old, but can be earlier or later.)</p> <p>What is digestion? The food that we eat has to be broken down into other substances that our bodies can use, and any waste removed. This is called digestion. If we didn't digest our food, we couldn't use our food and turn it into energy. The digestive system is the system for digestion in the human body, it describes how we break down our food. The digestive system is the name given to all the apparatus which enables our bodies to do this.</p> <p>Parts of the digestive system There are seven parts to the digestive system, each playing a vital role in transporting our food through the human body, absorbing important nutrients, and removing waste. Digestion in the human body involves the following body parts, organs and muscles mouth, oesophagus, stomach, small intestine, liver, gall bladder, large intestine.</p> <p>What is a food chain? Food chains show how energy from the sun is used by animals in a chain from plants through to animals and even humans. All food chains start with a producer which is always a green plant that converts the sun's energy into food. Animals then eat the producer and are called consumers. Sometimes animals eat other animals. These are called predators.</p>	<p>to replace the water it has lost. As a result, water is constantly moving through plants.</p> <p>What is pollination? Pollination in plants is the act of transferring pollen grains from the male anther of a flower to the female stigma. This leads to fertilisation and the production of seeds.</p> <p>How do plants spread their seeds? Plants disperse their seeds in lots of different ways. Some seeds are transported by the wind and are shaped to float, glide or spin through the air. Plants growing near a river may use the flowing water to transport their seeds. (Some seed pods are designed to explode and throw the seeds a good distance from the parent plant. Many plants also use animals to carry their seeds.)</p>	<p>things like frosted glass and wax paper.</p> <p>What is a shadow? A shadow is a dark shape made when light is stopped or blocked by an object or person.</p> <p>Why can strong light be dangerous? If too much light comes through the pupil, it can damage the retina. It causes pain, so that you instantly close your eyes, or turn away from a bright light. It is very important that you never look directly at the sun, as the light can damage your eyes very quickly.</p>
<p>National Curriculum Objectives to be covered</p>	<ul style="list-style-type: none"> -Identify common appliances that run on electricity -Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. -Identify whether or not a lamp will light in a simple series circuit based on whether or not the lamp is part of a complete loop with a battery -Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights 	<ul style="list-style-type: none"> -Identify how sounds are made, associating some of them with something vibrating -Recognise that vibrations from sounds travel through a medium to the ear. -Find patterns between the pitch of a sound and features of the object that produced it -Find patterns between the volume of a sound and the strength of the vibrations that produced it. 	<ul style="list-style-type: none"> -Describe the simple functions of the basic parts of the digestive system in humans -Identify the different types of teeth in humans and their simple functions. -Construct and interpret a variety of food chains, identifying producers, predators and prey 	<ul style="list-style-type: none"> -Identify & describe the functions of different parts of flowering plants: roots, stem, leaves and flowers -Explore the requirements for plant life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant -Investigate the way in which water is transported within plants -Explore the role of flowers in the life cycle of flowering plants, including pollination, seed formation and seed dispersal 	<ul style="list-style-type: none"> -Recognise that they need light in order to see things and that dark is the absence of light. -Notice that light is reflected from surfaces. -Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. -Recognise that shadows are formed when the light from a light source is blocked by a solid object. -Find patterns in the way that the size of shadows change 	

		in a simple series circuit -Recognise some common conductors and insulators, and associate metals with being good conductors.	-Recognise that sounds get fainter as the distance from the sound source increases			
	Key Subject Specific Vocabulary to be taught	Electricity, energy, source, renewable/non-renewable, circuit, component, battery, buzzer, motor, series	Sound, vibration, volume, pitch, high/low, quiet/loud, tension	Incisor, canine, molar, acid, bacteria, plaque, enamel, gullet, stomach, small/large intestine, pancreas, predator, prey, carnivores, herbivores, omnivores,	Seed, bulb, root, stem, flower, sepals, stamen, ovary, pollen, germination, nutrients, reproduction, pollination, fertilisation, seed dispersal	Light, light source, dim, reflect, reflective, shiny, dull shadow, transparent, opaque
	Working scientifically focus	Explaining Science & Making Conclusions	Explaining Science & Designing Experiments	Explaining Science Making Conclusions	Explaining Science Making Conclusions	Designing Experiments
	Assessment Activities/Key Questions	A plan, do & review investigation involving circuits	To create a poster/presentation that reflects all the key knowledge that has been covered and what the children can independently recall	To independently create their own food chain for the animal of their choice	A plan, do & review investigation on conditions for plants growth	Following an investigation create a detailed bar chart to show results collected
Year 5/6	Topic Heading:	Earth & Space	Forces	Properties and changes of materials	Animals including humans	Living things and their habitats
	Link to themes/ key concepts	<u>Physics</u> Earth and other planets Model: Energy Transfer, Force-Arrow and Big Picture	<u>Physics</u> Gravity, friction, air-resistance, levers, pulleys and gears Model: Force Arrow	<u>Physics:</u> separating reversible and irreversible MODEL: Particle Model	<u>Biology</u> Changes in humans as they grow MODEL: AO (Human Life Cycle)	<u>Biology</u> Lifecycles and reproduction Model: AO (Life Cycles)
	Key Knowledge (This is what they will learn over the topic sessions and what they will be assessed on)	<u>What is the Solar System Like?</u> The solar system consists of the Sun and everything that orbits, or travels around, the Sun. This includes the eight planets and their moons, dwarf planets, and countless asteroids, comets, and other small, icy objects.	Contact Forces The following forces are contact forces: Frictional force- Whenever objects rub against each other they cause friction.	How does a material's properties suit its role? All materials have properties. This means the things about them you can measure that can be different to other materials. Different materials are good for different jobs based on their properties. Examples of properties you need to know about are: Hardness – the ability of a material to resist being dented Solubility – how easily a material a material will dissolve Magnetism – if a material is magnetic or not	What happens as we get older? Baby - all babies are born helpless. They drink milk and need a parent to do everything for them. Toddler - at about one year old, babies start to develop lots of new skills. They learn to walk and talk. They are a bit wobbly on their feet.	Comparing animal life cycles The life cycles of mammals, birds, amphibians and insects have similarities and differences. For example, amphibians and insects go through the process of metamorphosis. Reproduction in plants

	<p>Why does the sun move across the sky? The apparent movement of the sun across the sky is caused by the rotation of the Earth on its axis and its orbit around the sun. This rotation changes the angle at which light from the sun directs itself at the Earth. The path the sun makes across the sky during the day is known as the sun path, or day arc.</p> <p>Why do we have day and night? We get day and night because the Earth rotates on an imaginary line called an axis. During daytime, your part of the Earth is facing the sun. As the Earth rotates you move away from the sun until eventually, the sun is no longer visible. For you, this is now nighttime, but for the other side of the planet, day has just begun</p> <p>What are the phases of the moon? The four phases of the moon, or Luna phases, are; Waning Gibbous. Waxing Crescent. Waning Half Moon. Waning Crescent.</p> <p>Exploring the solar system</p> <p>On the 21st of July 1969, was a historic day for the whole world! The American astronaut Neil Armstrong took the first steps for men who walked on the moon. At 2:56am, he stepped out of the Apollo 11 lunar module and onto the Moon's surface, in an area of the moon called the Sea of Tranquility</p>	<p>Normal force- the force that supports the weight of an object on a surface.</p> <p>Tension force- A pulling force exerted by a string or chain on an object.</p> <p>What is the effect of Friction?</p> <p>Friction causes the molecules on rubbing surfaces to move faster, and this causes them to have more energy. Having more energy creates a higher temperature and the substances feel warmer.</p> <p>What is the effect of air resistance?</p> <p>Air resistance is a type of friction between air and another material. For example, when an aeroplane flies through the air, air particles hit the aeroplane making it more difficult for it to move through the air</p> <p>Non-Contact forces These are gravitational force, magnetic force and electrostatic force.</p> <p>What is up thrust?</p> <p>Up thrust force is not a type of friction. It is a force that pushes things upwards. This happens when a gas or liquid has an object floating in it. A leaf floating on a pond is getting up thrust from the water, causing it not to sink. Solid objects can give up thrust too however, for example, a</p>	<p>Conduction of Heat – how easily heat passes through</p> <p>Conduction of Electricity – how easily electricity passes through</p> <p>Transparency - if a material allows light to pass through or not.</p> <p>What is a solution?</p> <p>A solution is a mixture of two or more substances that stays evenly mixed. Substances that are combined to form a solution do not change into new substances. Some examples of solutions include seawater, gasoline, glass, steel and air</p> <p>How can mixtures be separated?</p> <p>Separation</p> <p>Mixtures can be separated by methods like sieving, filtering and evaporating.</p> <p>Sieving</p> <p>A mixture made of solid particles of different sizes, for example gravel and sand, can be separated by sieving.</p> <p>Filtering</p> <p>You can separate a mixture of sand and water by passing it through a piece of filter paper. The water is able to pass through the tiny gaps in the paper but the sand particles are too big and are left on the surface of the filter paper.</p> <p>Evaporating</p> <p>By dissolving salt in water you make a solution. You can separate the salt from the water again by boiling the solution. The water will evaporate until it is all gone. The salt will be left behind.</p> <p>Reversible and irreversible change</p> <p>Irreversible changes can't be undone, however, a reversible change means that the original substance can be retrieved. This means that the original substance may look or feel different but the materials are not new. Reactions that are reversible include: dissolving, evaporation, melting and freezing.</p>	<p>They start trying to do things for themselves.</p> <p>Child- Children are aged 3-12 year old. During these years, they can learn lots of new skills, such as reading and writing.</p> <p>Teenager - teenagers are aged between 13 and 19 years old. Teenagers are getting ready to become adults. They want to try things on their own. Teenagers eat a lot because they grow and change a lot.</p> <p>Adult - once you are an adult you are fully grown. Everybody ages differently - people's bodies might look different, even though they're the same age.</p> <p>Elderly - adults continue to age throughout their lives. You are classed as elderly after the age of 60, but many adults of this age don't feel old!</p> <p>What happens to our bodies as we get older?</p> <p>As people age, their hair often thins and turns gray, and their skin wrinkles. Their muscles begin to shrink and their bones become more fragile. They often lose some of their height or part of their vision or hearing. They think more slowly, and their short-term memory may suffer. Scientists are not exactly sure what causes the effects of aging.</p> <p>What are our reproductive organs?</p> <p>In men the main reproductive organs are the testes. The two oval-shaped testes sit behind the penis in a pouch called the scrotum. The testes make the male sex cells, called sperm. Sperm are too tiny to see without a</p>	<p>Plants can also reproduce. Male gametes can be found in the pollen, and female gametes can be found in the ovary (ovules). Pollination occurs when pollen from the anther is transferred to the stigma by insects. The pollen then travels down and meets the ovule, seeds are then formed (fertilisation). Seeds are dispersed so that germination can begin again.</p> <p>Life Process's of animals</p> <p>-Mammals have a three stage life cycle: the gestation period, grows and develops independence and the adults mate to reproduce. -Many amphibians have a five stage life cycle, e.g. the frog: the female lays eggs fertilised by the male, breathes in water through gills, grows fins and develops lungs, grow front legs and can breathe out of the water, and starts to eat insects and plants.</p> <p>-Most insects have a four stage life cycle: eggs laid by female insect, eggs hatch into lava, the pupa is formed and the adult breaks out of the pupa and matures.</p> <p>-Birds have a three stage life cycle: eggs laid by the mother and cared for until hatching, the bird is fed until independent and the adult mates to reproduce.</p>
--	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

chair will give you up thrust if you're sitting in it!

microscope. They are shaped like tadpoles with long tails

In women the main reproductive organs are the ovaries. The two almond-shaped ovaries sit inside the lower belly. When a girl is born her ovaries contain up to 500,000 egg cells. Two tubes, called fallopian tubes, connect the ovaries to the uterus. The uterus is a muscular organ that holds a growing baby.

What happens during puberty?

Girls' hips get wider and breasts develop. Girls can also grow taller. Periods start as girls begin to menstruate. Girls might notice changes to their skin, such as oiliness increasing and producing more sweat. They can experience hair growth on different parts of the body, including: arms, legs, armpits, and in the pubic area.

The male body grows taller and broader and becomes more muscular. Hair begins to grow on the face, chest, arms, armpits, legs and in the pubic area. Boys may start to sweat more as sweat glands produce more sweat. Boys' voices get deeper. This is sometimes known as the voice 'breaking'. The scrotum, testes and penis develop.

Where do babies come from?

Some males and females conceive a baby through sexual intercourse. This is when a male releases sperm

					into a female so that they can fertilise the female's egg.	
National Curriculum Objectives to be covered	<ul style="list-style-type: none"> -Describe the movement of the earth, and other planets, relative to the sun in the solar system -Describe the movement of the moon relative to the earth -Describe the sun, earth and moon as approximately spherical bodies -Use the idea of the earth's rotation to explain day and night and the apparent movement of the sun across the sky 	<ul style="list-style-type: none"> -Explain that unsupported objects fall towards the earth because of the force of gravity acting between earth and the falling object -Identify the effects of air resistance, water resistance and friction, that act between moving surfaces -Recognize that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect 	<ul style="list-style-type: none"> -Compare and group together everyday materials on the basis of properties (e.g. their hardness, solubility, transparency, conductivity (electrical/thermal) and response to magnets -Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution -Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating -Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic -Demonstrate that dissolving, mixing and changes of state are reversible changes -Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda 	<ul style="list-style-type: none"> -Describe the changes as humans develop to old age(link to school policy on sex education) 	<ul style="list-style-type: none"> -Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird -Describe the life process of reproduction in some plants and animals(sexual/asexual) 	
Key Subject Specific Vocabulary to be taught	Solar Eclipse, solar system, gravity, axis, equator, leap year, northern/southern hemisphere, luminous, eclipse	Force, push, pull, friction, air resistance, water resistance, up-thrust, gravity, balance, unbalanced, force arrow, accelerate, decelerate, Newton, force meter, lever, pulley, gear	Properties, solids, liquids, gas, mixture, particle, energy, dissolve, solute, solvent, saturation, filtering, sieving, evaporating, reversible, irreversible	Adolescent, offspring, puberty, pubic hair, egg, sperm, testes, ovaries, oviduct, uterus, cervix. Vagina, vulva, sperm, foreskin, scrotum, glands, erection, ejaculation, intercourse	Lifecycle, reproduction, gamete, petals, sepals, stigma, ovary, anther, stamen, pollen, pollination, fertilisation, dispersal	
Working scientifically focus	Explaining Science & Making Conclusions	Explaining Science Data, Tables & Graphs	Explaining science Designing Experiments	Explaining Science Data, Tables & Graphs	Explaining Science Designing Experiments	
Assessment Activities/Key Questions	To create a scientific diagram of the solar system with relevant labels	To create a plan, do & review investigation focusing on the key forces covered	Following an investigation independently create a table a graph to show the results	Create a poster that recalls all the key learning for that topic	Choose an animal of your choice and create a labelled lifecycle for that animal	