Malpas Alport Primary School – Science Curriculum

Purpose of Study	A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.
Aims	The national curriculum for science aims to ensure that all pupils: • develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics • 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 • are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.
Curriculum Design	The Malpas Alport Science Curriculum explicitly sets out the substantive and disciplinary knowledge children will learn in each lesson to ensure there is clear interplay between the types of knowledge. To support schema development, lessons are sequenced to build on prior learning with each lesson having clearly defined knowledge to revisit. The Malpas Alport Science curriculum is sequenced following the topics as they are set out in the National Curriculum for KS1 and KS2. At Malpas Alport, we prioritise the STEM subjects. All year groups have a STEM based topic that is covered for a full term each year. These topics make explicit links between the Design and Technology, Science and Computing curriculums.

Personal Development Links						
	RESPECT	SMSC	Rights Respecting	British Values	Jigsaw	Trips and Visits

Topic Overview Year 3

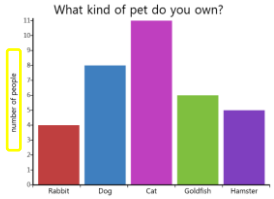
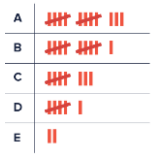
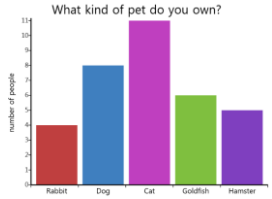
	HT1	HT2	HT3	HT4	HT5	HT6
Year 3	Animals including humans	Rocks and soil	STEM – Forces and magnets		Light	Plants

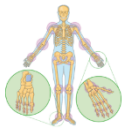
HT1 - Animals including humans

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Revisit of prior learning	Review the basic needs of animals for survival (water, food, air).	Review that food is a basic need for animals, including humans, to survive and that they cannot make their own food so get their nutrition from what they eat. Review the importance of eating the right amount of different types of food.	Review basic human body parts and the senses associated.	Review the role of the skeleton as support/protection for the body. Review vertebrate and invertebrate.	Review role of skeleton as support/protection for the body. Review major parts of the human skeleton. Review terms vertebrate and invertebrate.	Review role of skeleton to support and protect the body.
Lesson Sequence	Identify that animals, including humans cannot make their own food and need to get nutrition from what they eat.	Identify that animals, including humans, need the right types and amount of nutrition. Look at food groups and how to eat a balanced diet.	Identify that humans and some other animals have skeletons to support/protect their body. Introduce vertebrates and invertebrate.	Identify that humans and some other animals have skeletons to support/protect their body. Look at human skeletons - identify bones and their purposes.	Look at joints and how these work to allow movement.	Identify that humans and some other animals have muscles and look at how they help with movement.

Knowledge - Animals including humans

	Substantive knowledge			Disciplinary Knowledge			
	Personal Development			**Knowledge of methods that scientists use to answer questions** *(Observation over time, pattern seeking, identify/classify, comparative/fair test, research using secondary sources)*	**Knowledge of apparatus and techniques, including measurement**	**Knowledge of data analysis**	**Knowledge of how science uses evidence to develop explanations.**
	1		Animals (including humans) can't make their own food, they get food by growing, hunting or gathering it. **Nutrition** means getting the food needed to grow and be healthy. 	**Research** Research is an investigation or study to find out facts in order to reach a conclusion.		Know that you can present information from research as pictures with labels to make it easier to understand. Know that information texts use scientific language.	Know that scientific evidence has been used to classify how animals, including humans, get their food.

	2		The human body needs a **balanced diet** to work properly. You need the right amount of food from the different food groups. **Fruit and vegetables** - Contain fibre which helps us to digest food  **Carbohydrates –** give us energy e.g. bread, potatoes, pasta  **Proteins** – help our bodies to repair e.g. fish, meat, nuts, seeds, eggs and cheese  **Fats** – help store energy for our bodies e.g. butter, cheese, fried foods 	**<u>Identify and classify</u>** To identify and classify, you make observations and collect data to find similarities and differences. This help to organise things into groups and make connections.	A ruler is a tool used to draw straight lines.  Axis are used to label areas of the bar chart to enable the reader to understand what is being shown. 	Know that tally charts are the best way to collate numbers quickly and effectively.  Know that bar charts show results clearly so that conclusions can be made.  Know that you need to use scientific language when identifying and classifying.	To draw a scientific conclusion you need to look at your results and identify patterns.
	3		Mammals, birds, fish, reptiles, amphibians are **vertebrates** this means they have a skeleton inside their body. 	**<u>Research</u>** Research is an investigation or study to find out facts.		Know that you can present information from research in a table to make it clearer and easier to understand. Know that information texts use scientific language.	Know that scientific evidence has been used to classify vertebrates and invertebrates, including exoskeletons and hydroskeletons.

			Invertebrates means they don't have a skeleton inside their bodies. Some examples of these are spiders, snails, jellyfish, crabs, worms.   				
4			The skeleton is made of bones. This protects and supports the body. **Skull** – protects the brain **Rib cage** – protects major organs (e.g. heart, lungs) **Humerus, radius, ulna** – bones in your arms **Femur, tibia, fibula** – bones in your legs 	**<u>Research</u>** Research is an investigation or study to find out facts in order to reach a conclusion.	A ruler is a tool used to measure length. Centimeter is a unit of measurement. Meter is a unit of measurement	Know that you can present information from research in a table to make it clearer and easier to understand.	Know that evidence can be used to draw conclusions has been used to classify solids, liquids and gasses.
5			Joints are where two or more bones join together. The skeleton can bend at these joints e.g. **knees, elbows.** Know the terms: ball and socket joint, hinge joint and gliding joint. 	**<u>Comparative testing</u>** Comparative testing is a way of making direct comparisons between different things. **<u>Pattern seeking</u>** Pattern seeking is when you carry out a simple test or observe closely to look for patterns in your results.		Know that you can present information from research in a table to make it clearer and easier to understand. Know that you can present information from pattern seeking in a table to make it clearer and easier to understand.	To draw a scientific conclusion you need to look at your results and identify patterns.
6			**Muscles** are attached to the skeleton to help us **move**. They **contract** and **relax** as they move with the bones. Know that **contraction** means to get smaller and **expansion** means to get bigger.  	**<u>Research</u>** Research is an investigation or study to find out facts in order to reach a conclusion			To draw a scientific conclusion you need to look at your results.

HT2 - Rocks and Soil

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Revisit of prior learning	Review rock as an everyday material - look at its properties and everyday uses.	Review three types of rock and how they are formed.	Review appearance and simple physical properties of sedimentary, metamorphic and igneous rocks.	Review appearance and simple physical properties of sedimentary, metamorphic and igneous rocks. Review how different materials are suited to different uses.	Review how the different types of rocks are formed. Look at how sedimentary rock is formed in layers.	Review how the Earth is made of many layers including rocks and soil.
Lesson sequence	Introduce the idea that the earth is made up of many layers including rocks and soil. Introduce sedimentary, metamorphic and igneous rocks and look at how these are formed.	Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.	Introduce terms permeable and impermeable and carry out investigations to find which rocks can be classified.	Look at common rocks and classify into the three different types. Look at common uses of these rocks and why the type of rock is suitable for its use.	Describe in simple terms how fossils are formed when things that have lived are trapped within rocks. *Link to Mary Anning as a famous fossil hunter.*	Look at how soil forms the top layer of the Earth. Recognise that soils are made from rocks and organic matter. Look at the types of soil and their properties. (Sandy, clay, loam).

Knowledge – Rocks and Soil

	Substantive knowledge		Disciplinary Knowledge			
	Personal Development		**Knowledge of methods that scientists use to answer questions** ***(Observation over time, pattern seeking, identify/classify, comparative/fair test, research using secondary sources)***	**Knowledge of apparatus and techniques, including measurement**	**Knowledge of data analysis**	**Knowledge of how science uses evidence to develop explanations.**

	1		Children can identify the 3 different types of rock and know how they are formed. **Sedimentary:** rock made from layers of sediment that have formed through pressure. **Igneous:** formed when molten lava cools and solidifies. **Metamorphic:** When sedimentary rock is changed due to heat and pressure.	**Identify and Classify** Classifying is when you sort items into groups based on similarities and differences. Identifying means that you find out what something is. Observing means to look closely.		Know that you can present information as pictures with labels to make it easier to understand.	Know that scientific evidence has been used to classify different types of rocks and how they are formed.
	2		Children can identify the three types of rocks from their appearance: **Sedimentary** – small grains, layers, soft **Igneous** – shiny, crystals, air bubbles **Metamorphic** – layers,, crystals, hard	**Identify and Classify** Classifying is when you sort items into groups based on similarities and differences. Identifying means that you find out what something is. Observing means to look closely.	A ruler is a tool used to draw straight lines. 	When you collect data it needs to be presented in a way that is clear and easy to understand. A table is a simple way to present data.	Know that evidence can be used to draw conclusions to classify rocks from their appearance.
	3		**Permeable** is when a material absorbs liquid. **Impermeable** is when a material does not absorb a liquid.	**Research** Research is an investigation or study to find out facts in order to reach a conclusion. **Comparative Testing** A comparative test is when you test and compare different cases and situations. Using existing knowledge, you can make a prediction about what the outcome of your scientific enquiry will be.	A ruler is a tool used to draw straight lines. 	Know that you can present information from research in a table to make it clearer and easier to understand. A table is a simple way to present data.	Know that evidence can be used to draw conclusions to classify rocks from their appearance. To draw a scientific conclusion you need to look at your results and identify patterns.
	4		Children can identify the following rocks and classify them into either sedimentary, igneous or metamorphic: **Sedimentary:** sandstone, chalk, limestone	**Identify and Classify** Classifying is when you sort items into groups based on similarities and differences.	A ruler is a tool used to draw straight lines. 	Know that you can present information from research in a table to make it clearer and easier to understand.	Know that evidence can be used to draw conclusions to classify rocks from their appearance.

			Igneous: granite, basalt **Metamorphic:** slate, marble	Identifying means that you find out what something is. Observing means to look closely. **Comparative Testing** A comparative test is when you test and compare different cases and situations. Using existing knowledge, you can make a prediction about what the outcome of your scientific enquiry will be		A table is a simple way to present data.	Know that results from a scientific enquiry can be used to answer a scientific question. To answer a scientific question, you should include evidence from your scientific enquiry. Know that conclusions drawn from scientific enquires can be used to make recommendations.
	5		Understand how **fossils** are formed over millions of years: 1. An animal dies and the soft parts of the body rot away. 2. The remains get buried under layers of sediment. 3. The sediment around the bones are pressurised into sedimentary rock. 4. The bones start to be dissolved by water (as sediment rock is permeable) 5. Materials in the water replace the bones, making a rock replica of the bones.	**Identifying and Classifying** Identifying means that you find out what something is. Observing means to look closely. Classifying is when you sort items into groups based on similarities and differences.		A diagram is a picture that is usually labelled.	Know that a conclusion is when you answer a question using what you have found out in your scientific enquiry.
	6		Soil makes up the top layer of the Earth's crust and is made from rocks and organic matter.	**Comparative Testing** A comparative test is when you test and compare different cases and situations. A scientific enquiry is carried out to answer a scientific question. **Observation over time**	You can measure the volume of a liquid using a measuring cylinder. The volume of a liquid is measured in milliliters and litres. 1litre = 1000ml	When you collect data it needs to be presented in a way that is clear and easy to understand.	Know that results from a scientific enquiry can be used to answer a scientific question. To answer a scientific question, you should include evidence from your scientific enquiry. Know that you can gather, record and present data in a

				Observing over time is when you make systematic and careful observation to identify and measure changes in materials over a period of time. Regular observations/ measurements need to be made at set intervals	You can measure the amount of a solid in teaspoons. You can use time-lapse on an iPad to observe changes over time.		variety of ways to help answer a question. Know that findings from enquires can be reported in different ways e.g. orally, written, results presentation or as a conclusion. Know that a conclusion is when you answer a question using what you have found out in your scientific enquiry.

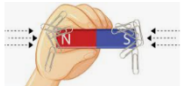
HT3 and HT4 - Forces

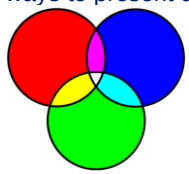
	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
Revisit of prior learning		Review a force as a push or pull.	Review a force as a push or a pull.	Review friction.	Review magnetic force	Review magnets as having two poles. Review that magnets create two forces - attract and repel. Review properties of everyday materials.	Review magnets as having two poles. Review that magnets create two forces - attract and repel. Review properties of everyday materials.
Lesson sequence	Understand a force as a push or pull.	Introduce term friction. Compare how things move on different surfaces depending on the amount of friction created.	Investigate pushes and pulls and how they make an object move.	Observe how magnets attract or repel each other. Describe magnets as having two poles. Predict whether two magnets will attract or repel each other, depending on which poles are facing.	Children learn that magnets have a north and south pole. They are then to investigate how magnets can attract and repel.	Observe how magnets attract or repel some materials and not others.	Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials

Knowledge – Forces and magnets (STEM topic - Trains)

	Substantive knowledge		Disciplinary Knowledge			
			Knowledge of methods that scientists use to answer questions *(Observation over time, pattern seeking, identify/classify,*	Knowledge of apparatus and techniques, including measurement	Knowledge of data analysis	Knowledge of how science uses evidence to develop explanations.

	Personal Development			*comparative/fair test, research using secondary sources)*			
1	EVOLVE	Some forces need contact with objects and this is **push** and **pull.**  	**Identifying and classifying** Know that classifying is when you sort items into different groups based on their similarities and differences. Know that to identify and classify you need to observe closely. Know that you can sort activities/actions into push and pull forces.		A Venn diagram uses circles to show the relationship between things. Where the circles cross over shows that the items sorted fit into both categories.	
2		An object will move differently on different surfaces due to **friction (the resistance that one surface or object receives when moving over another).** An object will move more smoothly on the table or corridor floor compared to the carpet or grass.	**Fair test** A fair test is when one variable is changed and the others remain constant. A variable is a factor that can be changed.	We can measure mass using electronic scales.  Grams and kilograms are units used for measuring mass. 1kg = 1000g We measure force using a Newton metre.  Newtons is the unit of measure used for force. You can measure longer lengths using metre sticks.	A table is a clear way to present data collected when carrying out a fair test.	Results from fair test can be used to answer a scientific question. Conclude that an object will need a lesser force to move it when there is less friction on the surface it is moving across.
3		Some forces need contact with objects and this is **push** and **pull.**	**Comparative testing** A comparative test is when you test and compare different cases and situations. A comparative test can be used to investigate the distance travelled when using a push forces applied by different parts of the body (foot stamping on bottles/blowing straws).		A table is a clear way to present data collected when carrying out a comparative test.	To draw verbal conclusions

					Centimetres and millimetres are units of measure we use for length. 1cm = 10mm. Metres is a unit of measure we use for length. 1m = 100cm .		
4		Some forces do not need contact with objects and can act at a distance. This is a **magnetic force.** 	**Pattern seeking** Pattern seeking is when you observe variables that cannot be controlled to notice patterns. Pattern seeking can be used to investigate whether you need contact with an object to make it move.				Observations from pattern seeking observations can be used to draw conclusions. Conclude that some forces do not need contact with objects and can act at a distance.
5		Some forces do not need contact with objects and can act at a distance. This is a **magnetic force.** A magnet has two poles. These are the **North Pole** and **South Pole.**  The same poles **repel** each other but opposite poles **attract. This is known as a magnetic force.** 	**Fair test** A fair test is when one variable is changed and the others remain constant. A variable is a factor that can change. You can carry out a fair test to investigate how close a magnetic object needs to be to a magnet in order for it to attract.	A magnet is an object that has a magnetic field. A magnet attracts and repels other items.  Centimetres and millimetres are units of measure we use for length. 1cm = 10mm.	When you collect data it needs to be presented in a way that is clear and easy to understand. A table is a simple way to present data.	Know that results from a scientific enquiry can be used to answer a scientific question. To answer a scientific question, you should include evidence from your scientific enquiry
6		Magnets attract or repel each other. Magnets are attracted to **iron, nickel** and **metals that contain iron e.g. steel**.   	**Identifying and classifying** Classifying is when you sort items into groups based on similarities and differences. You can classify materials as magnetic or non-magnetic.	A magnet is an object that has a magnetic field. A magnet attracts and repels other items.	Know that a table is the best way to present the results when you identify and classify.	

			Magnets repel the following materials: **copper, silver** and **gold.**  				
	7		To know that a paper clip, a staple, the iPad locker are all magnetic. To know that tinfoil, door handles and copper coins are not magnetic.	**<u>Fair testing</u>** A fair test is when one variable is changed and the others remain constant. A variable is a factor that can change.	Centimetres and millimetres are units of measure we use for length. 1cm = 10mm.	Know that a Venn diagram and bar chart are different ways to present data.  A Venn diagram uses circles to show the relationship between things. A bar chart is a chart that has rectangles of different sizes to represent values.	

HT5 - Light

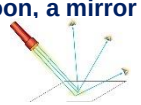
	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Revisit of prior learning	Review how daylight comes from the sun. Review how it is light in the daytime and dark at night.	Review the sun as a source of light.	Review that light is needed in order to see and that darkness is the absence of light.	Review that light is needed in order to see and that darkness is the absence of light. Review that an opaque object does not let light pass through.	Review what a fossil is and how they are formed. Review that shadows are formed when light from a light source is blocked by an opaque object.	Review that a light source is need in order to see. Review terms opaque, translucent and transparent. Review properties of everyday materials.
Lesson sequence	Understand that light comes from a light source (e.g. the sun). Recognise that they need light in order to see things and that	Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.	Introduce the terms opaque, translucent and transparent. Investigate how different materials allow different amounts of light to pass through them.	Recognise that shadows are formed when the light from a light source is blocked by an opaque object.	Find patterns in the way that the size of shadows change.	Investigate how light is reflected from surfaces.

	dark is the absence of light.					

Knowledge – Light and shadows

Substantive knowledge			Disciplinary Knowledge			
Personal Development			**Knowledge of methods that scientists use to answer questions** *(Observation over time, pattern seeking, identify/classify, comparative/fair test, research using secondary sources)*	**Knowledge of apparatus and techniques, including measurement**	**Knowledge of data analysis**	**Knowledge of how science uses evidence to develop explanations.**
1		Dark is the absence of light. You need to use a light source to see objects. These include **the sun, a torch and a light bulb.**   	**<u>Identifying and classifying</u>** Classifying is when you sort items into groups based on similarities and differences. Items can be sorted into things that are light sources and non-light sources.		Know that a table is the best way to present the results when you identify and classify.	
2		Understand that the sun can be dangerous to our eyes and there are ways to protect your eyes such as **wearing sunglasses and shades for your eyes.**	**<u>Observation over time</u>** Observing over time is when you watch or measure something over a period of time to see how it changes. You can observe the effects of a UV source (the sun) on a UV bead (skin) over time to help understand the importance of protection from the sun.	UV beads change colour when exposed to a UV light source.  A UV torch provides a UV ray which effects the UV beads. You can use time-lapse on an iPad to observe changes over time.	When you collect data it needs to be presented in a way that is clear and easy to understand. A table is a simple way to present data collected through an observation over time.	Know that results from a scientific enquiry can be used to answer a scientific question. To answer a scientific question, you should include evidence from your scientific enquiry

				**<u>Fair test</u>** A fair test is when one variable is changed and the others remain constant. A variable is a factor that can change. A fair test can be used to investigate which materials will protect the UV beads (skin) from the UV source (sun) When carrying out a fair test it is important that you have a scientific question e.g. To ask relevant scientific question e.g. Do different materials provide better protection for the UV bead from the UV source? Using existing knowledge, you can make a prediction about what the outcome of your scientific enquiry will be.	UV beads change colour when exposed to a UV light source. A UV torch provides a UV ray which effects the UV beads.	When you collect data it needs to be presented in a way that is clear and easy to understand. A table is a simple way to present data collected through an observation over time. A scientific diagram is a picture that is usually labelled.	Know that results from a scientific enquiry can be used to answer a scientific question. To answer a scientific question, you should include evidence from your scientific enquiry
	3		**Opaque** is when you cannot see through something, **transparent** is when you can see through something and **translucent** is only when the light can be seen through something.	**<u>Identifying and classifying</u>** Classifying is when you sort items into groups based on similarities and differences. You can make careful observations to help you classify objects. Materials can be sorted into those that are: transparent, translucent and opaque. Using existing knowledge, you can make a prediction		Know that a table is the best way to present the results when you identify and classify. A scientific diagram is a picture that is usually labelled.	

				about what the outcome of your scientific enquiry will be.			
	4		Opaque objects such as **cups, tables and books** create a shadow when they block the light source. Notice that the size of shadows increase the closer the light source depending on the distance of the light source to the object. 	**<u>Fair test</u>** A fair test is when one variable is changed and the others remain constant. A variable is a factor that can change. A fair test can be used to investigate how the length of a shadow changes depending on the distance the object is from the light source. When carrying out a fair test it is important that you have a scientific question e.g. As the distance from the light source increases, will the height Using existing knowledge, you can make a prediction about what the outcome of your scientific enquiry will be.	You can measure longer lengths using metre sticks. Centimetres and millimetres are units of measure we use for length. 1cm = 10mm.	When you collect data it needs to be presented in a way that is clear and easy to understand. A table is a simple way to present data collected in a fair test. A scientific diagram is a picture that is usually labelled.	Know that results from a scientific enquiry can be used to answer a scientific question. To answer a scientific question, you should include evidence from your scientific enquiry Conclude that as the distance from the light source increases, the shadow size decreases.
	5		Children understand that light can be reflected from surfaces such as **the moon, a mirror and water.** 	**<u>Pattern seeking</u>** Pattern seeking is when you observe variables that cannot be controlled to notice patterns. You can carry out a pattern seeking investigation to see which materials reflect light. You can use your observations from a pattern seeking enquiry to classify	A torch is a light source. 	When you collect data it needs to be presented in a way that is clear and easy to understand. A table is a simple way to present data collected in a pattern seeking investigation. A scientific diagram is a picture that is usually labelled.	Know that results from a scientific enquiry can be used to answer a scientific question. To answer a scientific question, you should include evidence from your scientific enquiry Conclude that some materials reflect light from a

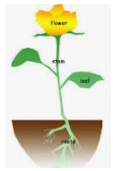
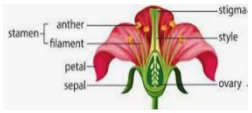
				materials into reflective and non-reflective.			light source and some materials do not.

HT6 - Plants

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Revisit of prior learning	Review basic structure of a flowering plant.	Review how plants need water, light and a suitable temperature to grow and stay healthy.	Review how plants need water, light and a suitable temperature to grow and stay healthy.	Review what a fossil is and how they are formed. Review how plants need water to survive. Review the parts and functions of a flowering plant. Review growth of a sunflower from year 1.	Review that seeds and bulbs grow into mature plants.	Review the life cycle of a flowering plant.
Lesson sequence	Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.	Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant - carry out investigation to observe these requirements showing what happens if they are not all fulfilled.	Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant - review results from investigation.	Investigate the way in which water is transported within plants.	Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	Explore methods of seed dispersal.

Knowledge - Plants

	Substantive knowledge		Disciplinary Knowledge			
	Personal Development		Knowledge of methods that scientists use to answer questions *(Observation over time, pattern seeking, identify/classify, comparative/fair test, research using secondary sources)*	Knowledge of apparatus and techniques, including measurement	Knowledge of data analysis	Knowledge of how science uses evidence to develop explanations.

	1		**Parts of a plants** The main parts of a plant are: flowers, leaves, stem and roots. **Flowers** – have colour and smell to attract insects **Leaves** – change carbon dioxide and water into food for the plant and oxygen. **Stem** – this holds the plant up and carries water to the rest of the plant. **Roots** – hold the plant in the ground and soak up water and minerals from the soil. 	**Identifying** Identifying means that you find out what something is. You can identify the main parts of a flowering plant. To do this you need to observe them closely. **Research using secondary sources** Research is an investigation or study to find out facts in order to reach a conclusion. Secondary sources are works such as textbooks, encyclopedia and scientific books. Secondary sources can help you to identify parts of a flowering plant.		A scientific diagram is a picture that is usually labelled.	
	2		**Parts of a flower** A flower's job is to create seeds so that new plants can be grown. **Anther** –part that makes pollen. **Filament** –holds up the anther. **Ovule** – a small egg **Stigma** – takes in the pollen **Style** –Pollen travels down the style to the ovary. **Ovary** – contains the eggs **Petal** – brightly coloured and sweetly scented to attract insects. 	**Identifying** Identifying means that you find out what something is. You can identify the main parts of a flowering plant. To do this you can dissect them and then observe each part closely.	Tweezers can be used to dissect an object. They help you to pick up very small parts. 		

	3		**What plants need to grow** Air, light, water, nutrients from the soil, room to grow.	**Fair testing** A fair test is when one variable is changed and the others remain constant. A variable is a factor that can change. You can set up a fair test to investigate how plants grow when one of the variables is removed. **Observation over time** Observing over time is when you watch or measure something over a period of time to see how it changes. You can observe how a plant grows over time, recording your observations at set time intervals.	You can take photographs on an iPad to record changes over time.	When you collect data it needs to be presented in a way that is clear and easy to understand. You can record observations in a table. Photographs can be used as a method of recording changes over time. These need to be in time order to show the changes.	Know that results from a scientific enquiry can be used to answer a scientific question. To answer a scientific question, you should include evidence from your scientific enquiry. Conclude that in order to grow and be healthy, plants need: air, light, water, nutrients from soil and room to grow.
	4		**Life cycle of flowering plants** **Germination** – the seed starts to grow. **Growing** – the plant grows bigger and forms a flower. **Pollination** – pollen from the anther lands on the stigma and travels down the style. **Fertilisation** – the pollen joins with an ovule and a seeds starts to form. **Seed dispersal** – the fully formed seeds are moved away from the parent plant.  	**Observation over time** Observing over time is when you watch or measure something over a period of time to see how it changes. You can observe the changes to a sunflower seed after it has been planted. **Research using secondary sources** Research is an investigation or study to find out facts in order to reach a conclusion. Secondary sources are works such as textbooks,	You can access secondary sources of information on an ipad.		Know that findings from enquires can be reported in different ways e.g. orally, written, results presentation or as a conclusion. A powerpoint is a clear way to present information collected when using secondary sources.

				encyclopedia and scientific books. Secondary sources of information can be used to find out about germination, growing, pollination, fertilization and seed dispersal in a flowering plant.			
	5		**<u>Water transportation</u>** Roots absorb water from the soil. The stem transports water to the leaves.	**<u>Observation over time</u>** Observing over time is when you watch or measure something over a period of time to see how it changes. You can carry out an observation over time to see how water is transported from the soil, to the stem, to the leaves of a plant.			Know that findings from enquires can be reported in different ways e.g. orally, written, results presentation or as a conclusion. Know that a scientific write up can include: a question, prediction, method, results and conclusion.
	6		**<u>Seed dispersal</u>** Seeds can be dispersed by: - **Wind** – seeds are blown by the wind. - **Animals** – seeds are eaten by animals and then excreted. Seeds also hook onto an animal's fur and are then transported. - **Explosion** – dry seed pods split open and shoot out the seeds. - **Water** – seeds fall into the water and move with the current.			Model making is a clear way to represent scientific ideas.	