







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	<p>The national curriculum for science aims to ensure that all pupils:</p> <ul style="list-style-type: none"> 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	<p>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.</p> <p>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.</p>					
Personal Development Links						
	RESPECT	SMSC	Rights Respecting	British Values	Jigsaw	Trips and Visits

Topic Overview EYFS






	HT1	HT2	HT3	HT4	HT5	HT6
Reception	Animals including humans	Seasons	STEM – Things with Wings		Discovering the UK (habitats)	Explorers (habitats)




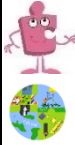


HT1 Animals including humans

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Revisit of			Revisit how to describe similarities and difference between people.		Revisit the different parts of the body. Revisit how to keep yourself healthy.	

Lesson sequence				
	Children learn about themselves. They learn to recognize and write their name. They think about what they look like how they are all different from one another. Children will explore the different emotions that we feel and how we can look after one another.	Children learn about their bodies. They will learn the different parts of the body, their senses and how to take care of themselves to ensure they stay healthy.		Children will learn the human life cycle. They will learn that we grow over time and go through different life stages. Children will be able to talk about these stages and order them.

Knowledge – EYFS (Animals including humans)

Substantive knowledge		Disciplinary Knowledge			
Personal Development		Knowledge of methods that scientists use to answer questions <i>(Observation over time, pattern seeking, identify/classify, comparative/fair test, research using secondary sources)</i>	Knowledge of apparatus and techniques, including measurement	Knowledge of data analysis	Knowledge of how science uses evidence to develop explanations.
1					
2	 Use language to talk about similarities and differences amongst themselves and others. For example, 'I have blonde hair and they have brown hair.'  Recognise their emotions (happy, sad, excited worried, nervous, cross)  Use the language of emotion to talk about how situations have made them feel.				
3	 Know that the body is made up of different body parts.  Identify the different body parts and name them. (Head, face, neck, arms, hands, legs, feet) Know that our bodies need to be looked after and we need to take care of ourselves by	<u>Identify and classify</u> Sorting is when we group things by similarities and differences Foods can be sorted into healthy and unhealthy.	We can use scissors to cut. To use scissors effectively you need to: <ul style="list-style-type: none"> • Hold them with your thumb and finger • Point away from your body 		







		<p>washing, eating healthy, exercising and brushing our teeth.</p> <p>Children explore the 3 senses in their environment outside and can name them (see, feel and hear).</p> 		<ul style="list-style-type: none"> • Open and close them as you move your arm forward • Keep your elbow bent and close to your body 	
4					
5	  <p>Know that the human life cycle is made up of stages (baby, toddler, child, teenager, adult, elderly).</p> <p>Know the special life stages that each cycle may go through. (Walking, talking, starting school, starting high school, getting a job, finishing work.).</p>	<p>We can use scissors to cut.</p> <p>To use scissors effectively you need to:</p> <ul style="list-style-type: none"> • Hold them with your thumb and finger • Point away from your body • Open and close them as you move your arm forward • Keep your elbow bent and close to your body 	<p>Life stages can be ordered from youngest to oldest.</p>		
6					






HT2 – Seasons and celebrations

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Revisit of prior			Revisit parts of the body.	Revisit what hibernation and migration are.	Revisit the harvest festival. What it is and why it is important.	
Lesson sequence			Children will continue to learn about the season Autumn. During this week, they Children will learn that animals change their behavior during this time. Children will know what hibernation and migration are and can name animals that	Know that during Autumn time we celebrate the harvest festival. Children will learn the importance of Harvest and will be able to explain what it is.	Children will be introduced to Winter. They will identify what the weather is like and the key features associated with Winter. Children will explore the concept of freezing and melting	

do this during the Autumn months.

Knowledge – Seasons and celebrations

Substantive knowledge		Disciplinary Knowledge			
Personal Development		Knowledge of methods that scientists use to answer questions <i>(Observation over time, pattern seeking, identify/classify, comparative/fair test, research using secondary sources)</i>	Knowledge of apparatus and techniques, including measurement	Knowledge of data analysis	Knowledge of how science uses evidence to develop explanations.
1					
2					
3	   <p>Name animals they are likely to see in autumn (Hedgehog, squirrel, fox, robin, door mouse).</p> <p>Recognise woodland animals through sounds, prints and appearances.</p> <p>Through investigating 1 animal (hedgehog) describe and make comments about a hedgehog. It hibernates, its nocturnal, it has spikes to protect itself live in a den.</p> <p>Children know how to care for animals in their environment.</p>	<p><u>Research using secondary sources</u></p> <p>You can collect facts about hedgehogs from watching videos.</p> <p><u>Identify and classify</u></p> <p>Sorting is when we group things by similarities and differences</p> <p>Animals can be sorted into those that hibernate and those that don't.</p>			Facts about animals can be shared in a fact file.
4	   <p>Exploring food that is harvested in Autumn. Children to explore these in garden area through sensory activities.</p> <p>Use harvested ingredients to make a soup.</p> <p>Sort vegetables and fruit into 2 categories</p> <p>Can name 3 vegetables Carrot, potato, broccoli.</p> <p>Can name 3 fruits Apples, bananas, strawberries</p>	<p><u>Research using secondary sources</u></p> <p>You can look at books and online videos to find information about what foods can be harvested foods that are harvested</p>	<p>We can use a knife to cut.</p> <p>To use a knife safely you need to:</p> <ul style="list-style-type: none"> • hold the handle • keep the sharp bit away from your body • keep your fingers out of the way • move with an up and down motion 	<p>When we find out information we can show it by putting it in a list.</p> <p>A list is a clear way to show which foods are harvested.</p> <p>When we sort food we can put them into categories such as fruit and vegetables.</p>	Know that you can use information you have found out to answer questions.






5	 	Observe and interact with natural processes through the observation of ice melting When its cold water freezes and when it warms up it begins to melt. When we add salt things melt quicker.	You can watch for changes over time.	 To use a pipettes correctly you need to: <ul style="list-style-type: none"> • Point pipette downwards and into the water • Squeeze the top of the pipette gently • Keep pipette in the water as you stop squeezing • Lift pipette out 	When explaining what happens you need to use the correct words 'melt' 'freeze'. 
		6			

HT3 – Things with Wings

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Revisit of prior learning	Revisit hibernation and migration.	Revisit the different types of transport.	Revisit the different parts of a plane.			
Lesson sequence	Children will look at different forms of transport. They will be able to sort transport into groups and think about how transport has changed over time.	Children will go on a trip to their airport. Here they will learn the different parts of a plane, The jobs you might have on a plane and how planes have changed over time.	Children will learn about hot air balloons. They will Learn the different parts of a hot air balloon and will compare different ones. Children will then design their own hot air balloon using patterns.			

Knowledge – Things with wings


Substantive knowledge	Disciplinary Knowledge
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Personal Development			Knowledge of methods that scientists use to answer questions <i>(Observation over time, pattern seeking, identify/classify, comparative/fair test, research using secondary sources)</i>	Knowledge of apparatus and techniques, including measurement	Knowledge of data analysis	Knowledge of how science uses evidence to develop explanations.
1	 	<p>Know that transport is manmade</p> <p>Know that there are different types of manmade transport: (car, van, bus, train, boat, plane, bicycle, helicopter, hot air balloon, submarine, jet ski)</p> <p>Through observation and interaction, know how to use language to explain how transport moves. A plane has wings so it can fly a car has wheels so it can move along the road.</p>	<p><u>Identify and classify</u></p> <p>Sorting is when you put things into groups based on similarities and differences.</p> <p>You can sort transport into ground, air, sea, space.</p>	<p>You can use scissors to cut.</p> <p>To use scissors effectively you need to:</p> <ul style="list-style-type: none"> • Hold them with your thumb and finger • Point away from your body • Open and close them as you move your arm forward • Keep your elbow bent and close to your body 	<p>Information can be presented in a table.</p>	
2	<p>EVOLVE</p> 	<p>Name the different parts of plane. (wings, nose, jet engines, cockpit, wheels, doors, windows fuselage)</p> <p>Describe and demonstrate how a plane lands and takes off. Planes take off from the nose first and land on their back wheels.</p>	<p><u>Research using secondary sources</u></p> <p>You can look at books and online videos to find information about aero planes.</p> <p>You can ask questions to find out information about aero planes.</p>			
3		<p>Name and label parts of a hot air balloon. Basket, burner, envelope, ropes</p> <p>Hot air balloons have patterns on them</p> <p>Hot air balloons have differences and similarities</p>	<p><u>Research using secondary sources</u></p> <p>You can look at books and online videos to find information about hot air balloons.</p>		<p>Information can be shown by a labelling a picture.</p>	
4						
5						
6						

HT4 – Explorers (Habitats)

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Revisit of prior learning				Revisit the different types of transport.	Revisit the animals you find at the seaside.	
Lesson sequence				Children know that our country is made up of different landscapes. They will explore the seaside They will look at features and animals associated with the seaside	Children will learn about the season summer. They will be able to talk about what the weather is like in summer. They will be able to discuss what type of clothes they wear. Children will know how to keep safe in summer.	

Knowledge – Explorers (Habitats)

Substantive knowledge		Disciplinary Knowledge			
Personal Development		Knowledge of methods that scientists use to answer questions <i>(Observation over time, pattern seeking, identify/classify, comparative/fair test, research using secondary sources)</i>	Knowledge of apparatus and techniques, including measurement	Knowledge of data analysis	Knowledge of how science uses evidence to develop explanations.
1					
2					
3					
4	 <p>Name 5 seaside animals (crab, starfish, seagull, fish, jellyfish) Name 5 ocean animals (whale, dolphin, turtle, shark, octopus)</p>	<p><u>Identify and classify</u> You can look at books and watch videos to find out information about animals.</p>		<p>You need to use the correct words when describing the features of an animal.</p>	<p>Information about what we find at the seaside can be written in a sentence e.g. I can see a....</p>









5		Name the season summer	<u>Observation</u> You can use your eyes to look outside to see what the weather is like in each season.	You need to use the correct words when describing the weather outside.
		Explore the weather associated with summer. (hot, sunny, dry) Observe and interact with natural processes that occur in summer (an object casting a shadow) To create shadows you need to block the sunlight.		
6				

HT6 – Explorers (Habitats)

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Revisit of prior learning	Revisit the different types of landscape.		Revisit the sea and land on a globe.		Revisit the items needed to go on an adventure and the materials these were made from.	
Lesson sequence	Children will be introduced to the vocabulary explorer. They will learn what an explorer is and where they would go. They will look at a globe and know that this represents the world. Children will be able to identify land, sea and the Arctic.		Children will learn that explorers need certain things before they go on a mission. Children will look at an important figure and what he needed on his adventure. They will explore these items and look at how they have changed over time.		Continue building on the knowledge of the Arctic and talk about the different animals in the Arctic and how they are adapted to suit their environment	

Knowledge – Habitats

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

1	  	<p>An explorer is someone who explores a new unfamiliar area.</p>	<p><u>Research uses secondary sources</u></p> <p>You can look at a globe to find out about new places.</p> 	<p>To be an explorer you need hats, bags, torches, maps and binoculars.</p>	<p>When we find out information we can show it by putting it in a list</p> <p>A list is a clear way to show what an explorer needs.</p>	<p>You can use information you have found out to answer questions.</p>
2						
3		<p>Explore materials and sort into groups.</p> <p>Waterproof an not waterproof Fluffy and rough Hard and soft</p> <p>Look at different types of boats and compare them, talking about their similarities and differences by sorting them into different groups</p> <p>Old and new Purpose Materials</p> <p>Explore the concept of floating and sinking using natural and manmade in the environment</p>	<p><u>Identify and classify</u></p> <p>Sorting is when you put things into groups based on similarities and differences.</p> <p>You can sort materials into different groups.</p>	<p>Scissors are used to cut.</p> <p>To use scissors effectively you need to:</p> <ul style="list-style-type: none"> • Hold them with your thumb and finger • Point away from your body • Open and close them as you move your arm forward • Keep your elbow bent and close to your body 		
4						
5	  	<p>Name 5 Arctic animals (polar bear, walrus, arctic fox)</p> <p>Explain how animals are adapted to live in colder climates.</p> <p>They have blubber. They have thick coats.</p> <p>Talk about the similarities and differences between animals from the UK and those from the Arctic.</p>	<p><u>Research using secondary sources</u></p> <p>You can look at books and watch videos to find out about arctic animals.</p>	<p>You can use information you have found out to answer questions.</p>		
6						