Science

At West Newcastle Academy, we intend to develop a life-long curiosity and interest in Science through investigating, observing and questioning. The curriculum provides opportunities to enhance and develop student's scientific knowledge and skills. Throughout our school we encourage student voices during science and empower children to think like scientists. There are opportunities for children to build their problem solving skills and resilience through practical experiments. Throughout the year groups we use post it note planning to support the children in learning how to plan and conduct scientific enquiries. We aim for children to be actively curious and explore the environment around them. Opportunities for science on outdoor and community learning support this as children are able to explore different environments and habitats in the wider local area.

EYFS Cycle A	**Saving the planet** Children will think about saving the planet through reduce, reuse, recycle and the impact of plastic waste. They will learn about animals that hibernate and how trees help to clean our air. On outdoor learning they will look at how to help the environment on visits to the beach, woodlands and parks.	**Life Cycles** Children will learn about different plant, animal and mini beast life cycles, including those of a butterfly and a frog. On outdoor learning children will look at trees, plants and flowers; learning their names and parts. They will also learn about different animals and mini beasts.	**Summer Holidays** Children will learn about the seasons and the weather with a focus on summer. They will look at how shadows are formed. They will also explore changing temperatures including freezing/ melting.
EYFS Cycle B	**Our World** Children will think about looking after our planet and helping the environment, as well as contrasting environments and habitats They will also look at the effects of seasons and the weather on our world with a focus on Winter.	**Growing** Children will learn what plants need to grow and they will grow their own plants. They will also explore mini beasts and animals. On outdoor learning children will look at trees, plants and flowers; learning their names and parts.	**Under the sea** Children will think about how we can look after our oceans and beaches. They will look at boats and think about floating and sinking.

KS1 Cycle A	**Humans** Children will learn about different parts of the human body and why we need to exercise to stay healthy. They will also look at the human life cycle	**Everyday materials** Children will identify the materials different objects are made from and sort them based on their properties. They will look at how materials age and what different materials are useful for. They will then find a material suitable for a time capsule.	**Seasonal changes** Children will learn about the different seasons and how humans and animals are affected by them. They will look at day length and weather.	**Healthy eating and plants** Children will learn about the different food groups and how they make a healthy balanced diet. They will then grow and fruit or vegetable plants and observe what plants need to grow.	**Living things and their habitats** Children will look at the seven characteristics of living things and identify things that are dead, alive or never alive. They will learn how to look after pets and wildlife in the local area. They will look at the life cycle of a butterfly. They will develop their knowledge on outdoor learning sessions where they will observe animals in their natural habitats and visit farms and zoos to find out how to take care of different animals.	**Living things and their habitats and plants** Children will look at seeds and have the opportunity to plant some. They will look at the life cycle of a plant and learn the names of different plants. They will learn about simple food chains and think about how to make the local area attractive to wildlife.
KS1 Cycle B	**Senses** Children will look at the five different	**Animals** Children will learn about different	**Materials** Children will sort toys based on the	**Living things and their habitats**	**Living things and their habitats**	

	senses and carry out investigations based around each one.	animal groups and compare animals within them. They will also learn about animal's diets. They will look at different offspring and the life cycles of animals from different groups.	properties of the materials they are made from. They will carry out an investigation to find out how to change the shape of materials. They will look at the suitability of different materials and find the right material for a toy.	Children will look at what plants and animals need in their habitats. They will look at tress and name their parts. They will then compare local habitats and contrasting habitats.	Children will look at the life cycle of a tree and consider how plants and animals depend on each other. They will look at food chains and micro-habitats in the school grounds.	

LKS2 Cycle A	**Plants** Children will look at the different parts of a plant and the role they play in the plants survival. They will find out how plants have adapted to survive in the rainforest and different methods of seed dispersal.	**Animals including humans** Children will learn about the human skeleton and muscles. They will look at how animal skeletons can differ. They will look at food groups and nutrients and interpret and construct food chains.	**Animals including humans** Children will learn about eyes, teeth and the digestive system. They will carry out an investigation around tooth decay.	**Living things and their habitats** Children will learn to identify and classify different plants and animals. They will look at different habitats and consider the way human behaviour affects environments.	**States of matter** Children will learn about solids, liquids, and gases and the melting points of different solids. They will look at the water cycle and the different states of water.	

	During outdoor learning sessions children will consider the impact of deforestation and pollution on plants and animals. They will investigate how to protect the forest and care for plants and animals.					
LKS1 Cycle B	**Rocks and fossils** Children will look at the different types of rocks and their properties. They will learn about the fossilization process and why Mary Anning's findings were important. They will look at soil layers and investigate soil permeability.	**Light** Children will find out how our eyes work and how we can protect ourselves from the sun. They will look at reflective surfaces and learn how to change the direction of light. They will look at how to make and change shadows.	**Electricity** Children will identify electrical appliances and think about how electricity helps us. They will build circuits and investigate electrical insulators and conductors.	**Forces and magnets** Children will learn about friction and measure forces. They will investigate magnetic materials and the different uses of magnets.	**Living things and their habitats** Children will look in depth at water habitats and the plants and animals that live within them. They will classify these organisms and construct food chains and food webs.	**Sound** Children will learn how sounds are made and how they travel. They will investigate changing pitch and volume.

UKS1 Cycle A	**Classifying organisms** **Living things and their habitats** Children will classify different organisms including ones found in the local area. They will look at the Linnaen system for classifying and learn about microorganisms.	**Life cycles** **Living things and their habitats** Children will learn how different plants and animals reproduce. They will learn about the life cycles of different animals and look at the work of Jane Goodall.	**Forces** Children will learn about gravity, friction, water resistance and air resistance. They will measure the force it takes to make different objects move and look at how levers, pulleys, cogs and wheels work.	**Light** Children will learn how our eyes work and how light travels. They will look at how light can be reflected to travel in a different direction and the colour of light.	**Changes and reproduction** Children will learn about human reproduction and life cycles. They will look at changes in childhood, puberty and adulthood.	**Earth and space** Children will learn about the Earth's rotation and orbit around the sun. They will learn about the moon's movements and the names of the different planets.
Community Learning	**Living things and their habitats** Extending on their learning in Science children will observe the characteristics and behaviours of local animals and identify what they need to survive and thrive in their habitat. They will also explore the work of conservationists and their role in protecting animal diversity					
UKS1 Cycle B	**Animals, including humans** Children will learn about blood circulation and the heart. They will investigate what happens to these when we exercise. They will look at how food and	**Animals including humans** Children will learn what is needed for a healthy lifestyle. They will learn what is in a balanced diet and the negative effects of drugs, alcohol and tobacco.	**Electricity** Children will learn how circuits work and how different voltages affects them. They will investigate how wire length can impact circuits.	**Properties and changes of materials** Children will learn about reversible and irreversible changes and how mixtures can be separated. They will look at the properties of	**Evolution and inheritance** Children will learn about inherited characteristics and adaptations. They will learn about the theory of evolution and the evidence behind it.	

	nutrients get absorbed by the body and how different body parts use them.			materials including whether they are heat conductors or insulators and electrical conductors or insulators.		
Community learning	**Electricity** Children will learn about renewable energy sources and design an eco-town. They will also make their own turbines.					