Science

Through teaching science we aim to provide our pupils with the foundations to understand the world around them. At Priory Woods, science is about enabling our pupils to experience and observe phenomena in the natural and humanly-constructed world. They should be encouraged to be curious and ask questions about what they notice and observe and should be helped to develop their understanding of scientific ideas by using different types of enquiry to answer their own questions.

Our aims in teaching Science include:

- Pupils develop a secure knowledge and understanding all areas of science
- Pupils develop an understanding of how to work scientifically through practical work
- Pupils develop the ability to create their own scientific enquiries
- Pupils understand how scientific knowledge and understanding has changed the world we live in and develop an understanding of the uses of science, today and in the future
- Pupils maintain an enthusiasm and curiosity in science through practical, hands-on, fun lessons

Enrichment Weeks and day -

At Priory Woods we take part in enrichment days and weeks, such as Science days, STEM days, Skills Builder weeks, challenge enterprise week, special events. These days and weeks enrich our pupil's knowledge and enjoyment for Science, and incorporate fun and unusual experiments.

Priory Woods School Curriculum

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Lower School

The lower school science curriculum is based on the EYFS Science framework. In lower school we expect to see science through play and exploration. The activities below will help to develop important skills such as observation, prediction and critical thinking. In the EYFS and Lower School science is not taught as a specific subject but is a key part of the World around me and Thinking and Learning area of the curriculum. It is also integral to many areas of daily exploration, learning and play. Alongside specific scientific knowledge and vocabulary pupils will develop the concept of 'working scientifically' appropriate to their developmental stage.

Curriculum Intent	What would we expect to see in the classroom?
• Topic based science activities- sessions to link to current topic work- some topics will lend themselves more to science based work. • Communication and language- understand 'why' questions. • Personal, Social, and Emotional Development- making healthy choices about food, drink, tooth brushing, etc. • Understanding the World - using all their senses. - exploring materials and changes. - explore how things work -plants - animals/living things	• Topic sessions linked to Science, topic days, enrichment weeks, Science days. • Learn new Science related vocabulary. • Learn new vocabulary in different contexts. • Pupils should have the opportunity to brush their teeth in class daily. • Talk about healthy eating- healthy eating activities, tasting activities, etc. • Take part in regular physical education. • Manage their own basic hygiene and personal needs- including dressing and going to the toilet.

-Understand the key features of the life cycle of a plant and an animal. - Being to understand the need to respect and care for the natural environment and all living things. -Explore and talk about different forces.	• Hands on exploration of natural materials, and begin to talk about any changed they notice. • Plant seeds and care for growing plants. • Taking care of animals- animals in school, living eggs, visits to farms. • Activities on how to care for animals. • Looking at the basic forces 'push' and 'pull'

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Upper School

In Upper School, pupils follow the national curriculum Science documents. We focus on the documents between Y1-Y4, as these are the levels most suitable for our students. Our formal students have a dedicated science lesson each week? And they take part in lots of enrichment activities.

Key Stage 3

Curriculum Intent	What would we expect to see in the classroom?
Plants • Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees • Identify and describe the basic structure of a variety of common flowering plants, including trees.	Plants • Use the local environment to explore and answer questions about plants- around school, forest schools, and in the community. • Plant flowers in the forest school area, grow vegetables in the greenhouse. • Learn basic flower names, and be able to identify basic parts of a plant- leaves, petals, roots, etc. • Draw plants, search for pictures of plants, and compare how they change over time- seasons.

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Animals, including humans • 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. • Identify parts of the human body and look at the different senses. • 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. Everyday materials • 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 the 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. Seasonal changes • Observe changes across the four seasons.	Animals, including humans • Learn how to take care of animals- animals in school, living eggs, and visits to farms. Begin to learn some of the common names of some fish, birds and mammals. • Learn about the basic needs of animals and humans- what do we need to survive- food/water, sunlight, etc. Work on activities on the whiteboard, ICT games, worksheets, etc. • Identify the main body parts through rhymes, drawings, actions, worksheets. • Look at hygiene and healthy living- taking part in regular physical exercise and how to maintain a healthy lifestyle. • Look at healthy and unhealthy foods- flashcards, visits to the shop, tasting sessions. • Work on identifying parts of the body- worksheets, ICT activities. • Looking at senses- practical activities to use all senses. Everyday materials • Question what an object is. • Look at objects and identify whether they are man-made or natural materials- practical sorting activities/worksheets. • Investigate the properties of materials and then look at different ways you can change materials.

• Observe and describe weather associated with the seasons and how day length varies.	<u>Seasonal changes</u> • Investigate the weather for each season. • Look at how the plants and trees change over the seasons. • Look at what clothes you would wear for the four different seasons. • Produce graphs based on data that is gathered about the weather and seasons. • Introduce scientific vocabulary, such as transparent.

<u>Key Stage 4</u>

Curriculum Intent	What would we expect to see in the classroom?
• <u>Plants</u> • 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 • 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.	• Plant their own flowers- watch them grow and identify the different parts of their flowers. Worksheets/labelling parts of the plants. • Set up their own investigations to find out what plants need to grow. • Record and present their own findings. • Experiment involving food colouring through a flower stem to see how water is transported.

	• Create their own life cycle (could be by posters) of a flower. Be able to discuss and explain the life cycle of a plant.
<u>Animals, including humans</u> • Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat • Identify that humans and some other animals have skeletons and muscles for support, protection and movement.	• Investigating what animals and humans need to stay healthy. Gather, classify and record data of a variety of ways. • Sort food into food groups and find out the different nutrients these foods provide. Practical activities could include looking at food labels to identify what each food contains. • Investigate animal and human skeletons- worksheets, ICT resources, videos. Compare the similarities and differences of human and animal skeletons. • Look at how bones and muscles work together to create movement- practical activities, videos, own investigations.
<u>Forces</u> • Compare how things move on different surfaces • Notice that some forces need contact between two objects, but magnetic forces can act at a distance • Observe how magnets attract or repel each other and attract 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	• Looking at pushing at pulling- practical activities • Practical activities, such as investigating the speed of a toy car over different surfaces. • Investigations with magnetic and non-magnetic materials- lots of practical activities with magnets- predict which will be magnetic and which won't be.

• Describe magnets as having two poles • Predict whether two magnets will attract or repel each other, depending on which poles are facing.	
<u>Light</u> • 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 an opaque object • Find patterns in the way that the size of shadows change.	• Games such as 'feeling bags', in which pupils feel inside a bag without looking and guess what might be in the bag- showing that you need light to see things. • Investigations with torches and mirrors, looking at reflections. • Practical investigations, looking at how shadows are formed. Recording their findings. • Looking at pushing at pulling- practical activities • Practical activities, such as investigating the speed of a toy car over different surfaces. • Investigations with magnetic and non-magnetic materials- lots of practical activities with magnets- predict which will be magnetic and which won't be.
<u>Rocks</u> • Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.	• Have rocks within the classroom and compare and contrast these rocks.

• Describe in simple terms how fossils are formed when things that have lived are trapped within rock • Recognise that soils are made from rocks and organic matter.	• Investigate fossils- trips to the beach, look at dinosaur fossils, fossil printing, watch videos, worksheets. • Investigate how soil is formed- experiments.