

Science Intent and Overview

At Maple Tree (MTPS), our intent is to spark children's curiosity as scientists, developing a thirst for learning and finding out why things happen in the way that they do, including exploring significant events and scientists throughout history. We value science as a core subject and want our pupils to learn key scientific vocabulary and knowledge as well as the skills linked to scientific working. We want our pupils to develop the ability to think independently and raise scientific questions, developing an enthusiasm and enjoyment of scientific learning and discovery.

We hope children will have an excitement and passion to pursue science in further education, which can lead to a career in the field of science and medicine, such as marine biologist, astrophysicist or chemist. Throughout the curriculum we embed our science lessons with opportunities for asking scientific questions, using a wide range of resources, and developing vocabulary and scientific terminology. We promote both independence and team work through regular practical investigations, including celebrating national Science Week each year.



		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Reception - Understanding the World	Senses, changes in seasons Cooking, Forest Schools	Seasons, light and dark Cooking, Forest Schools	Materials of toys Cooking, Forest Schools	Growth, change and decay Cooking, Forest Schools	Life cycles inc. caterpillar Cooking, Forest Schools	Floating/sinking Cooking, Forest Schools
Y e a r 1	Science <i>(including study of key scientists)</i>	Animals including humans identify and name common animals inc. carnivores, herbivores, omnivores	Seasonal changes observe and describe weather, day length, observe changes across seasons	Everyday materials Martin Brock, Charles Macintosh identify and name everyday materials, describe properties, compare/group properties, distinguish objects from materials	Seasonal changes observe and describe weather, day length, observe changes across seasons	Plants identifying flowers and plants	Plants basic structure of plants/trees Seasonal changes observe and describe weather, day length, observe changes across seasons
	Science Practical Investigation	Investigation - understanding offspring	experiencing weather	comparing materials	experiencing weather	seeds and plants	Investigation – weather vane
Y e a r 2	Science <i>(including study of key scientists)</i>	Everyday Materials Julie Brusaw, John Loudon McAdam how some materials can change shape	Everyday materials Zoe Zekoski, John Boyd Dunlop identify/compare suitability of materials	Plants what plants need to grow observe/describe how plants grow and mature	Living Things and Their Habitats differences between dead and alive Amphibians, mammals, insects, birds, fish habitats meeting animal needs name a variety plants	Animals including humans diet and exercise offspring grow into adults	Animals including humans basic needs of animals/human/animals simple food chains Seasonal changes, weather
	Science Practical Investigation	Investigating waterproof and non-waterproof materials Investigation – materials linked to the Emperor’s New Clothes	Bending and changing of materials	Observe the growth of a hyacinth	looking at plants	Investigating food	experiencing weather
Y e a r 3	Science <i>(including study of key scientists)</i>	Rocks and soils Holly Betts, Mary Anning compare/group rocks how fossils are formed that rocks/organic matter make soils	Animals, including humans need nutrition from what they eat skeletons and muscles	Light light is needed to see surfaces reflect light sun light is dangerous shadows from blocked light patterns in shadow	Forces and magnets William Gilbert compare movement on different surfaces magnets act at a distance magnets can attract or repel group magnetic materials describe magnet having 2 poles predict if magnet attract/repel	Plants George Washington Carver identify/describe function of different parts requirement for life and growth how water is transported within plants flowers in the life cycle	
	Science Practical Investigation	Investigate the composition of soil	looking at skeletons and bones	Investigate how shadows are formed	Raising questions and carrying out tests to find out how far objects move on different surfaces. Make a magnetic game	Investigate what plants need to grow well Investigate how water is transported within plants	

Year 4	Science <i>(including study of key scientists)</i>	Sound Alexander Graham Bell how sounds are made vibrations travel to the ear patterns between pitch/object patterns between volume/vibrate sounds get fainter w distance	Animals including humans describe human digestive system functions of diff. types of teeth food chains inc producers/predators/prey	Living things and their habitats Joy Adamson, Serian Summer explore/use classification keys group living things in a variety of ways environments can change and pose a threat to living things		Electricity Michael Faraday, Thomas Edison appliances that use electricity construct/name simple circuit lamps light in complete circuit w battery switches open/close a circuit conductors/insulators inc metal	States of matter Marie Curie group solids/liquid/gases change of state cooled/heated water cycle inc. temperature
	Science Practical Investigation	Investigate sources of sound	Investigate function of different teeth in animals including humans	Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment		Construct simple series circuits – troubleshoot.	Observe and record evaporation over a period of time. Investigate irreversible and reversible changes
Year 5	Science <i>(including study of key scientists)</i>	Living things and their habitats Rosalind Franklin Jane Goodall life cycles of mammals, insects, birds, amphibians reproduction process	Animals including humans Andreas Vesalius changes as humans grow old	Earth and Space Galileo Galilei Nicolaus Copernicus, Helen Sharman, Tim Peake movement of planets relative to the sun movement of moon relative to Earth Sun, moon, Earth are spherical bodies day/night and Earth's rotation	Forces Isaac Newton gravity effects of resistance/ friction mechanisms inc levers, pulleys, gears.	Properties and changes of materials Frederick Lindemann compare/group properties of everyday materials some materials dissolve in liquid to form solutions separation through filtering, sieving, evaporation test and give reasons for the uses of everyday materials that dissolving, mixing and changes of state are reversible that some changes result in the formation of new materials	
	Science Practical Investigation	Investigate different life cycles Investigate taking cuttings of different plants	Explore gestation periods and patterns between animals. Life cycles	Investigating the use of satellite dishes and tracking data	Investigating air resistance	Exploring how to safely filter and 'clean' dirty water. Explore water collection	
Year 6	Science <i>(including study of key scientists)</i>	Light Ernesta Jonkute, Ibn al-Haytham light travels in straight lines objects give out or reflect light light travels to our eyes objects cast shadows of the same shape	Electricity Peter Rawlinson, Thomas Edison brightness/volume is associated with cells/voltage compare variations in the function of bulbs, buzzers, switches using symbols to draw circuits	Evolution and Inheritance Charles Darwin, Mary Anning Alfred Wallace living things change over time and fossils provide clues adults produce offspring that vary adaptation to environments may lead to evolution	Living things and their habitats Carl Linnaeus, Sir David Attenborough classify according to common observable characteristics classify plants/animals on specific characteristics, giving reasons	Animals, including humans Wilhelm Roentgen name parts of circulatory system describe function of heart, blood vessels and blood recognise the impact of diet, exercise, drugs on body function describe how water/nutrients are transported in bodies	
	Science Practical Investigation	Investigate how light travels	Create a circuit board christmas decoration – investigating electricity Create a dimmer switch.	Family tree investigation	Classification in our backyard	Nutrient detectives	Investigate different exercises and the effects on their bodies