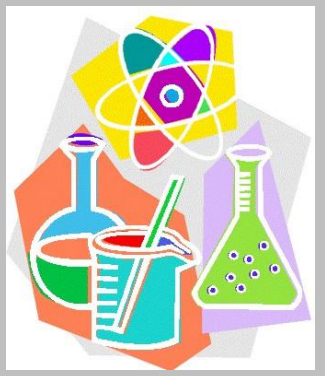
Characteristics: We are Scientists!

Science



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.

At Orchard, we are Scientists. We have…

- a developed a sense of excitement and curiosity about natural phenomena
- a developed scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- understanding of the nature, processes and methods of science through different types of scientific enquiries that helps us answer scientific questions
- become familiar with and use technical terminology accurately & precisely
- applied our knowledge of maths to collecting, presenting and analysing data
- planned different types of scientific enquiry questions and control variables
- taken measurements using a range of scientific equipment with increasing accuracy and recorded data of results with increasing complexity, using diagrams, charts & tables
- used test results to make predictions to set up further comparative and fair tests and reported and present findings from enquiries, including conclusions
- identified scientific evidence that has been used to support or refute ideas or arguments

<table>
<tr><th>Learning Opportunities in Key Stage 1</th><th colspan="2">Learning Opportunities in Key Stage 2</th></tr>
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Plants
• Identify, classify and describe their basic structure.
• Observe and describe growth and conditions for growth.
Habitats
• Look at the suitability of environments and at food chains.
Animals and humans
• Identify, classify and observe.
• Look at growth, basic needs, exercise, food and hygiene.
All living things
• Investigate differences.
Materials
• Identify, name, describe, classify, compare properties and changes.
• Look at the practical uses of everyday materials.
Light
• Look at sources and reflections.
Sound
• Look at sources.
Electricity
• Look at appliances and circuits.
Forces
• Describe basic movements.
Earth and space
• Observe seasonal changes.
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Plants
• Look at the function of parts of flowering plants, requirements of growth, water transportation in plants, life cycles and seed dispersal.
Evolution and inheritance
• Look at resemblance in offspring.
• Look at changes in animals over time and adaptation to environments.
• Look at differences in offspring and adaptation and evolution.
• Look at changes to the human skeleton over time.
Animals and humans
• Look at nutrition, transportation of water and nutrients in the body, and the muscle and skeleton system of humans and animals.
• Look at the digestive system in humans.
• Look at teeth.
• Look at the human circulatory system.
All living things
• Identify and name plants and animals.
• Look at the life cycle of animals and plants.
• Look at classification of plants, animals and micro-organisms.
• Look at reproduction in plants and animals, and human growth and changes.
• Look at the effect of diet, exercise and drugs.
Earth and space
• Look at the movement of the Earth and the Moon.
• Explain day and night
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Rocks and fossils
• Compare and group rocks and describe the formation of fossils.
States of matter
• Look at solids, liquids and gases, changes of state, evaporation, condensation and the water cycle.
Materials
• Examine the properties of materials using various tests.
• Look at solubility and recovering dissolved substances.
• Separate mixtures.
• Examine changes to materials that create new materials that are usually not reversible.
Light
• Look at sources, seeing, reflections and shadows.
• Explain how light appears to travel in straight lines and how this affects seeing and shadows.
Sound
• Look at sources, vibration, volume and pitch.
Electricity
• Look at appliances, circuits, lamps, switches, insulators and conductors.
• Look at circuits, the effect of the voltage in cells and the resistance and conductivity of materials.
Forces and magnets
• Look at contact and distant forces, attraction and repulsion, comparing and grouping materials.
• Look at poles, attraction and repulsion.
• Look at the effect of gravity and drag forces.
• Look at transference of forces in gears, pulleys, levers and springs.
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