



Science Vision & Intent

Overall Vision

At Elm Tree, we believe science should spark curiosity, deepen understanding, and empower pupils to make sense of the world around them. Our vision is to provide a rich, engaging science curriculum that nurtures inquisitive minds, builds strong scientific knowledge, and develops pupils' confidence to question, investigate and think critically.

We aim for every pupil to recognise the relevance of science in everyday life and its vital role in shaping the future—from protecting our planet to driving technological and medical innovation. Through hands-on enquiry, real-world contexts and high expectations, we inspire learners who are equipped with the skills, creativity and ambition to pursue further scientific learning and future STEM opportunities.

Our science curriculum encourages pupils not only to understand scientific ideas but to appreciate the excitement and possibilities of science, developing them into informed, responsible and curious citizens of the future.

By the end of Early years & Key Stage 1

By the end of EYFS, children will have understanding of the natural world, materials, life processes and how things move and change. They should be curious, willing to explore and willing to communicate about what they observe in practical, hands-on experiences.

KS1 Science should nurture curiosity, practical exploration and foundational scientific habits. Learning is built around observing, questioning, testing and exploring using age-appropriate tools and language. A rich curriculum allows children to experience science through environment, handling real materials, noticing change over time and developing the confidence to think scientifically.

At Elm Tree, pupils are taught to develop the following skills:

- Observation
- Questioning
- Identifying and classifying
- Experimenting and testing
- Measuring and recording
- Using evidence

In Biology, they will have knowledge and understanding of:

- Plants- Identify and name common wild and garden plants, trees and plant parts; understand seasonal growth and what plants need to grow.

- Animals including humans- Identify and classify animals (birds, mammals, reptiles, fish, amphibians, invertebrates) and describe survival needs.
- Living things and habitats- Explore local habitats; understand how animals/plants depend on each other.

In Chemistry, they will have knowledge and understanding of:

- Materials and their properties- Distinguish between common materials (wood, metal, plastic, glass, water, rock) and their uses.
- Changing materials- Explore how materials change when heated, cooled, mixed or squashed.

In Physics, they will have knowledge and understanding of:

- Seasonal changes- Observe and describe weather associated with seasons; day length variation.
- Light and sound- Explore light sources, shadows, sounds and vibrations.
- Movement and forces- Explore pushes, pulls and how things move on different surfaces.

At Elm Tree, we provide enrichment and learning opportunities through the following experiences:

- Nature walks, school garden, pond dipping
- Growing plants from seeds, growing food in school and eating the produce
- Weather stations and seasonal diaries
- Forest school sessions
- Visitors and workshops
- Use of digital tools- microscopes, data loggers, tablets
- Simple investigations
- Trips out of school
- STEM sessions
- Science club

By the end of Key Stage 2

KS2 science builds on early practical and observational skills to develop critical thinking, analysis and evaluation. Pupils learn to carry out structured investigations, gather reliable evidence and explain findings scientifically. A rich range of practical, outdoor, experiential and cross-curricular science opportunities encourages independence, curiosity and scientific confidence.

At Elm Tree, pupils are taught to develop the following skills:

- Planning Enquiries
- Measurement & Data Handling
- Recording & Presenting Data
- Using Evidence to Support Findings
- Evaluating Methods

In Biology, they will have knowledge and understanding of:

- Plants- Functions of parts of plants; processes of photosynthesis, transportation of water; life cycles.
- Animals Including Humans - Digestive system, nutrition, food chains, circulation, skeleton & muscles, puberty.
- Living Things & Habitats - Classification of living things using keys; adaptation, environmental change.
- Evolution & Inheritance- Variation, adaptation, fossils, survival and reproduction advantages.

In Chemistry, they will have knowledge and understanding of:

- States of Matter- Solids, liquids, gases; evaporation/condensation; water cycle.
- Rocks & Fossils- Compare and classify rocks; understand fossil formation & soil.
- Properties & Changes of Materials- Reversible/irreversible changes; filtering, dissolving, conductivity & insulation.

In Physics, they will have knowledge and understanding of:

- Forces - Gravity, friction, air resistance, water resistance; mechanisms like gears and pulleys.
- Magnets - Magnetic forces, materials, poles and attraction/repulsion.
- Sound- Vibrations, pitch, volume and how sound travels.
- Light- Reflection, shadows, how light travels, how we see.
- Electricity- Simple series circuits, conductors/insulators; circuit components and symbols.
- Earth & Space - Solar system, rotation and orbit, day & night cycle.

At Elm Tree, we provide enrichment and learning opportunities through the following experiences:

- Nature walks, school garden, pond dipping
- Growing plants from seeds, growing food in school and eating the produce
- Forest school sessions
- Visitors and workshops
- Trips out of school
- Science club
- STEM days, science fairs, project showcases
- Data logging for temperature, sound, light investigations
- School-based eco or wildlife project (bug hotels, pond areas)
- Model-making (digestive system, circuits, water cycle)
- Links with university science departments
- Residential trips
- Long-term observational studies (plant cycles, weather, shadows)