



Science Curriculum

At Olive School Hackney, our young scientists will both learn essential science knowledge and acquire life-long investigative science skills in order to explore and understand the world they live in. They will also develop an understanding of the vital role that major scientific ideas and scientists have played in society. In doing so, all our children, regardless of their starting points, will be fully prepared for their next stage of science education, and beyond.

Science is taught discretely, with a focus on knowledge-rich content and the development of essential science enquiry skills. The National Curriculum programmes of study and Early Years Foundation Stage framework are fully adhered to and then supplemented with additional knowledge-rich content. This provides a coherent science curriculum that both prepares children extremely well for future learning and gives them the tools to independently investigate and explore the world further.

The science curriculum encourages children to be curious about natural phenomena and to be excited by the process of understanding the world. We want our children to remember the concepts they learn. Therefore, the curriculum focuses on the sequential development of essential knowledge underpinning biology, chemistry, and physics, as per the science progression map below. Over time, these building blocks of component learning are transformed into a deep scientific understanding, adding new core knowledge to existing schema. For example, the biology strand of 'plants' is revisited multiple times throughout the year groups, with the component learning of basic plant structure in Year 1 transforming into the composite learning of water transportation within plants in Year 3.

Procedures and concepts that underpin scientific methods are developed. Every unit of work contains opportunities to develop the skills of asking questions, predicting, observing, measuring, fair testing, classifying, thinking critically, and drawing conclusions, according to the science progression map. Thus, essential science concepts are developed whilst children practically investigate.

Key science concepts and *working scientifically* skills are taught according to the following whole school long term plan:

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer2
Y1	Seasonal Changes (NC)	Everyday Materials (NC) <i>John Dunlop, Charles Macintosh or John McAdam</i>	Plants (NC) <i>Joseph Banks (Botanist)</i>	Animals, Including Humans (NC) <i>Jane Goodall (studied chimps)</i>	Taking Care of the Earth (CKS)	Introduction to Magnetism (CKS) <i>Albert Einstein (physicist)</i>
<i>Seasonal Changes throughout the year as appropriate to the changing seasons</i>						
Y2	Animals, Including Humans (NC)	Living Things and their Habitats (NC)	Plants (NC)	Matter (NC) <i>John Dunlop or C. Macintosh (creating new materials)</i>	Electricity (CKS) <i>Thomas Edison (light bulb)</i>	Astronomy and The Earth (CKS) <i>Galileo Galilei (astronomer) Copernicus (solar system)</i>
Y3	Animals including humans (NC) <i>Louis Pasteur (vaccinations) A. Fleming (penicillin)</i>	Forces and Magnets (NC) <i>Albert Einstein (physicist)</i>	Rocks (NC) <i>Mary Anning (fossil hunter)</i>	Plants (NC)	Light (NC)	Insects (CKS)
Y4	States of matter (NC)	Sound (NC) <i>Alexander Bell (inventor of telephone)</i>	Animals, Including Humans (NC)	Living Things and Their Habitats (NC) <i>Rachel Carson (pollution)</i>	Electricity (NC) <i>Michael Faraday (invented electric motor)</i>	The Human Body: Systems, Vision and Hearing (CKS)
Y5	Forces (NC) <i>Isaac Newton (gravity) Albert Einstein (physicist)</i>	Properties and changes of materials (NC) <i>Spencer Silver (invented glue) Benerito (wrinkle free cotton)</i>	Earth & Space (NC) <i>Galileo Galilei (astronomer) Copernicus (solar system) Stephen Hawking (physicist)</i>	Living things and their Habitats (NC) [inc Animals inc Humans] <i>David Attenborough (naturalist)</i>	Geology (CKS) <i>Leonardo Da Vinci (anatomist and geologist)</i>	Meteorology (CKS)
Y6	Electricity (NC) <i>Michael Faraday (invented electric motor)</i>	Animals, Including Humans (NC)	Living Things and their habitats (NC) <i>Carl Linnaeus (classification)</i>	Evolution and Inheritance (NC) <i>Charles Darwin and Alfred Wallace (theory of evolution)</i>	Light (NC) <i>Ibn Al-Haytham (studied optics)</i>	Chemistry: Matter and Change (CKS) <i>Marie Curie (radiation) Ernest Rutherford (atom)</i>

These units are planned in conjunction with the Science Curriculum Plan, which signposts essential prior knowledge and ensures the careful sequencing of learning, in adherence to the National Curriculum.

Our children are given motivating and inspiring out-of-class opportunities and special experiences to embed essential learning. This enrichment is an essential element of our science curriculum offer.

For example:

- Science Museum
- Natural History Museum
- Science workshops
- External speakers

Related documentation:

- [Science Curriculum Plan](#)
- [Science Learning Journey](#)