

SCIENCE

Science provides an empirical way of answering interesting and important questions about the biological, physical and technological world. The knowledge it produces has proved to be a reliable basis for action in our personal, social and economic lives. Science is a dynamic, collaborative and creative human endeavour arising from our desire to make sense of our world through exploring the unknown, investigating universal mysteries, making predictions and solving problems. Science aims to understand a large number of observations in terms of a much smaller number of broad principles. Science knowledge is contestable and is revised, refined and extended as new evidence arises.

The Australian Curriculum: Science provides opportunities for students to develop an understanding of important science concepts and processes, the practices used to develop scientific knowledge, of science's contribution to our culture and society, and its applications in our lives. The curriculum supports students to develop the scientific knowledge, understandings and skills to make informed decisions about local, national and global issues and to participate, if they so wish, in science-related careers.

In addition to its practical applications, learning science is a valuable pursuit in its own right. Students can experience the joy of scientific discovery and nurture their natural curiosity about the world around them. In doing this, they develop critical and creative thinking skills and challenge themselves to identify questions and draw evidence-based conclusions using scientific methods. The wider benefits of this "scientific literacy" are well established, including giving students the capability to investigate the natural world and changes made to it through human activity.

The science curriculum promotes six overarching ideas that highlight certain common approaches to a scientific view of the world and which can be applied to many of the areas of science understanding. These overarching ideas are patterns, order and organisation; form and function; stability and change; systems; scale and measurement; and matter and energy.

The Australian Curriculum: Science has three interrelated strands: Science Understanding, Science as a Human Endeavour and Science Inquiry Skills.

Together, the three strands of the science curriculum provide students with understanding, knowledge and skills through which they can develop a scientific view of the world. Students are challenged to explore science, its concepts, nature and uses through clearly described inquiry processes.

By the end of the Foundation year, students

- describe the properties and behaviour of familiar objects
- suggest how the environment affects them and other living things
- share observations of familiar objects and events

By the end of Year 6, students

- compare and classify different types of observable changes to materials
- analyse requirements for the transfer of electricity and describe how energy can be transformed from one form to another to generate electricity
- explain how natural events cause rapid change to the Earth's surface
- describe and predict the effect of environmental changes on individual living things
- explain how scientific knowledge is used in decision making and identify contributions to the development of science by people from a range of cultures
- follow procedures to develop investigable questions and design investigations into simple cause-and-effect relationships
- identify variables to be changed and measured and describe potential safety risks when planning methods
- collect, organise and interpret their data, identifying where improvements to their methods or research could improve the data
- describe and analyse relationships in data using graphic representations and construct multi-modal texts to communicate ideas, methods and findings