

YEAR 9 ASTRONOMY

The two strands of the Victorian Curriculum Science, Science Understanding and Science Inquiry Skills are taught in an integrated way. The Science Understanding strand includes students recognising that the universe contains features including galaxies, stars and solar systems and the Big Bang theory can be used to explain the origin of the universe. It also includes learning that gravity is a force that attracts objects and can act across large distances. It also includes students recognising that predictable phenomena on Earth, including seasons and eclipses, are caused by the relative positions of the sun, Earth and the moon. The Science Inquiry Skills strand includes students learning to select and use appropriate equipment, including digital technologies, to systematically and accurately collect and record data. It also includes students analysing patterns and trends in data, including describing relationships between variables and identifying inconsistencies and using their knowledge of scientific concepts to draw conclusions that are consistent with the evidence.

Science understanding

Students will learn:

- To identify the evidence supporting the Big Bang theory, for example, Edwin Hubble's observations and the detection of microwave radiation
- To recognise that the age of the Universe can be derived by applying knowledge of the Big Bang Theory
- To describe how the evolution of the Universe, including the formation of galaxies and stars, has continued since the Big Bang
- To consider how information technology can be applied to different areas of science, for example, bioinformatics, the Square Kilometre Array, DNA sequencing and the analysis of radio astronomy signals
- To recognise the contribution of Australian scientists, for example, Brian Schmidt and Penny Sackett, in the exploration and study of the Universe

Science Inquiry Skills

Students will be able to:

- Explain the choice of variables to be controlled, changed and measured in an investigation
- Using modelling and simulations, including using digital technologies, to investigate situations and events
- Using the internet to facilitate collaboration in joint projects and discussions
- Designing and constructing appropriate graphs to represent data and to look for trends and patterns
- Using secondary sources as well as their own findings to help explain a scientific concept