

Science (Foundation to Year 10)

The Foundation to Year 10 Australian Curriculum: Science is designed to develop students' interests in science and an appreciation of how science provides a means of exploring and understanding the changing world in which they live. It provides an understanding of scientific inquiry methods, a foundation of knowledge across the disciplines of science; and develops an ability to communicate scientific understanding and use evidence to solve problems and make evidence-based decisions.

How is the Foundation to Year 10 Australian Curriculum: Science structured?

The Foundation to Year 10 Australian Curriculum: Science is organised in three interrelated strands:

- *Science understanding* – which focuses on the important science concepts from across different areas of science.
- *Science as a human endeavour* – which focuses on the nature and influence of science.
- *Science inquiry skills* – which focuses on skills essential for working scientifically.

Content descriptions are organised into sub-strands to illustrate the development of concepts through and across the year levels. The sub-strands contained in each strand are listed:

| <i>Science understanding</i> | <i>Science as a human endeavour</i> | <i>Science inquiry skills</i> |
|---------------------------------|--|--|
| <i>Biological sciences</i> | <i>Nature and development of science</i> | <i>Questioning and predicting</i> |
| <i>Chemical sciences</i> | | <i>Planning and conducting</i> |
| <i>Earth and space sciences</i> | | <i>Processing and analysing data and information</i> |
| <i>Physical sciences</i> | | <i>Evaluating</i> |
| | | <i>Communicating</i> |

The *Science understanding* content descriptions are written by year level; the *Science as a human endeavour* and *Science inquiry skills* content descriptions are written for two-year bands.

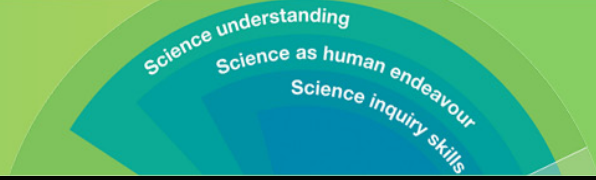
The **general capabilities** and **cross curriculum priorities** are explicitly included in the content descriptions and elaborations across the strands, as appropriate to the learning area.

What are the overarching ideas?

There are a number of overarching ideas that represent key aspects of a scientific view of the world and bridge knowledge and understanding across the disciplines of science.

In the Foundation to Year 10 Australian Curriculum: Science, six overarching ideas support the coherence and developmental sequence of science knowledge within and across year levels. The overarching ideas frame the development of concepts in the *Science understanding* strand; support key aspects of the *Science inquiry skills* strand and can contribute to developing students' appreciation of the nature of science.

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The six overarching ideas that frame the Foundation to Year 10 Australian Curriculum: Science are:

- *Patterns, order and organisation*
- *Form and function*
- *Stability and change*
- *Scale and measurement*
- *Matter and energy*
- *Systems.*

What international references have been drawn upon in developing the Foundation to Year 10 Australian Curriculum: Science?

Development of the Foundation to Year 10 Australian Curriculum: Science has drawn on high quality national and international curricula and research.

In addition to Australia, Finland, Canada and Singapore were in the top ten highest performing countries in scientific literacy of those participating in the 2009 Programme for International Student Assessment (PISA).

In relation to the Finland science curriculum, the Foundation to Year 10 Australian Curriculum: Science has a similar level of cognitive demand, a greater emphasis on Science as a human endeavour, more flexibility in choice of learning contexts, a greater focus on sustainability and ecosystems, inquiry skills presented in a more developmental sequence, less focus on human body systems and less specificity in relation to the chemical sciences.

In relation to the Ontario (Canada) science curriculum, the Foundation to Year 10 Australian Curriculum: Science has very similar overall content, except that the Australian Curriculum has a greater emphasis on

learning about the nature and use of science, and includes more references to measurement in science.

In relation to the Singapore science curriculum, the Foundation to Year 10 Australian Curriculum: Science has a similar level of cognitive demand and focus on inquiry-based learning, less factual content, more clearly defined inquiry skills, and a greater focus on Earth sciences.

Compared to other curricula, the Foundation to Year 10 Australian Curriculum: Science emphasises the 'big picture' ideas of science through overarching ideas and important science concepts. It also makes more explicit the use of digital technologies in science.

For more information please go to:

www.australiancurriculum.edu.au/Science/Rationale.