# Queensland Studies Authority logoScience Years 1 to 10 Syllabus

## Nature of the Science key learning area

Science as a ‘way of knowing’ is used by people to explore and explain their experiences of phenomena of the universe. It is a process for constructing new knowledge.

Scientific knowledge is viewed as a set of explanations, made by communities of scientists which attempts to account for phenomena and experiences. These explanations are tentative and continue to be modified.

‘Working scientifically’ is the term used in the Science syllabus to describe the practices and dispositions of science. These include a complex assortment of activities, mental processes, routines and protocols that are the essence of the scientific enterprise. In this syllabus, ‘working scientifically’ encompasses three aspects: investigating, understanding and communicating (page 33). ‘Working scientifically’ contributes to students’ sense of awe and wonder about the beauty and power of the universe.

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| The Science key learning area is organised into five conceptual strands:   * Science and Society * Earth and Beyond * Energy and Change * Life and Living * Natural and Processed Materials   Each of the strands of the science syllabus makes an equivalent contribution to the key learning area.  Each strand is described by three key concepts. Hence there are a total of 15 key concepts. These are developed over the ten years of compulsory schooling.  In the core learning outcomes, higher levels represent increasing complexity of the science key concepts, not working scientifically. Information about levelness of working scientifically can be found in the Initial In-service Materials pp 53 – 57.  The science syllabus promotes a learner-centred approach to learning and teaching, and views learning as the active construction of meaning and teaching as the act of facilitating learning (page 7). | **The science syllabus strands and**  **key concepts:**  **Science and Society**   * *Historical and cultural factors influence the nature and direction of science which, in turn, affects the development of society.* * *Science as a ‘way of knowing’ is shaped by the ways humans construct their understandings.* * *Decisions about the ways that science is applied have short- and long-term implications for the environment, communities and individuals.*   **Earth and beyond**   * *The Earth, solar system and universe and dynamic systems.* * *Events on Earth, in the solar system and in the universe occur on difference scales of time and apace.* * *Living things use the resources of the Earth, solar system and universe to meet their needs.*   **Energy and Change**   * *The forces acting on objects influence their motion, shape, behaviour and energy.* * *In interactions and changes, energy is transferred and transformed but is not created or destroyed.* * *There are different ways of obtaining and utilising energy and there have different consequences.*   **Life and Living**   * *The characteristics of an organism and their functioning are interrelated.* * *Evolutionary processes have given rise to a diversity of living things which can be grouped according to their characteristics.* * *Environments are dynamic and have living and non-living components which interact.*   **Natural and Processed**   * *The properties and structure of materials are interrelated.* * *Patterns of interactions between materials can be identified and used to predict further interactions.* * *The uses of materials are determined by their properties, some of which can be changed.* |