Key understandings
As students learn through and about science they need to be able to understand the world around them, make rational decisions on important issues, to explain phenomena (how and why they occur) and apply scientific principles to life choices.
The Australian Science Curriculum has three interrelated strands: Science Understanding, Science as a Human Endeavour and Science Inquiry Skills. Together, the three strands provide students with understanding, knowledge and skills. Students are challenged to explore science, its concepts, nature and uses through clearly described inquiry processes.

(Australian Curriculum, Content Structure)

Implications
Teachers of science at St Joseph’s will be active models and provide opportunities for students to develop:

- an interest in science as a means of expanding their curiosity and willingness to explore, ask questions about and speculate on the changing world in which they live
- an understanding of the vision that science provides of the nature of living things, of the Earth and its place in the cosmos, and of the physical and chemical processes that explain the behaviour of all material things
- an understanding of the nature of scientific inquiry and the ability to use a range of scientific inquiry methods, including questioning; planning and conducting experiments and investigations based on ethical principles; collecting and analysing data; evaluating results; and drawing critical, evidence-based conclusions
- an ability to communicate scientific understanding and findings to a range of audiences, to justify ideas on the basis of evidence, and to evaluate and debate scientific arguments and claims
- an ability to solve problems and make informed, evidence-based decisions about current and future applications of science while taking into account ethical and social implications of decisions
- an understanding of historical and cultural contributions to science as well as contemporary science issues and activities and an understanding of the diversity of careers related to science
- a solid foundation of knowledge of the biological, chemical, physical, Earth and space sciences, including being able to select and integrate the scientific knowledge and methods needed to explain and predict phenomena, to apply that understanding to new situations and events, and to appreciate the dynamic nature of science knowledge.

(Australian Curriculum, Aims)
Teaching, Learning and Assessing in Science

The science curriculum emphasises inquiry-based teaching and learning. A balanced and engaging approach to teaching will typically involve context, exploration, explanation and application. This requires a context or point of relevance through which students can make sense of the ideas they are learning. Opportunities for student-led open inquiry should also be provided within each phase of schooling. Play based, inquiry learning should be at the focus of teaching and learning in the early years.

In the practice of science the 3 strands Science Understanding, Science as a Human Endeavour and Science Inquiry Skills are closely integrated. Students’ experiences of school science would mirror and connect to this multifaceted view of science. (Australian Curriculum) Best practices are closely associated with student success.

Science Understanding
Link scientific concepts with other disciplines; provide depth and breadth when investigating; provide opportunities for students to observe, explore, and test hypotheses; practise learned skills and scientific methods.

Science as a Human Endeavour
Collaborative investigations respect for others: individual and groups including Asia, Aboriginal and Torres Strait Islander culture and history; interconnectedness of people with the natural environment to appreciate sustainable futures.

Science Inquiry Skills
Provide questions to be explored (open-ended and closed); begin instruction with what students know (constructivism); active learning – contemporary, manageable, meaningful, scientific, ‘real world’, interdisciplinary investigations using higher order thinking skills.

In years 4-7, Science is taught discretely by a specialist teacher.
In years P-3, science is either integrated or taught in discrete units by the classroom teacher. Once a term all students at St. Joseph's experience an enrichment day dedicated to Science.

Science learning can occur in three contexts: out-of-school contexts, at-school contexts and as a subject in itself. Teachers believe that it is necessary for students to have the ability to apply the pure Science that they experience in the classroom to the real life contexts in which they live. Therefore, units of work will reflect the range of real life contexts that exist in our community.

The following approaches are evident in classroom:
- Learner centred;
- Direct teaching of individuals, groups and whole classes;
- Activity based learning by individuals, groups and whole classes;
- Discussions between the teacher and students as well as between the students themselves;
- Technologically enhanced opportunities;
- Open ended investigations;
- Consolidation and practice;

At St Joseph’s School we acknowledge that we have students with different needs and learning styles. Teachers respond to these needs prior to planning by reflecting on:
- How to challenge and extend individuals.
- How to support those with learning difficulties e.g. provision of alternative ways for demonstrating achievement standards, use of learning support personnel.
- How to respond to different learning styles e.g. provision of opportunities for negotiating learning and assessment activities and within each unit, development of activities which respond to multiple intelligences.