Dimensions of teaching and learning
General Capabilities **Literacy** Students will: • Listen to, read and view published and self created texts and work towards evaluation of its content. • Technical vocabulary and everyday language used in science contexts (e.g. reflection, refraction, transmission, absorption) • Procedural vocabulary (e.g. identify, explain, analyse, measure, predict, collect) • Visual representations (e.g. scientific diagram, tables, graphs) • Conventions and symbols (e.g. degrees (°), ray diagrams).

Numeracy

Students will:

- use practical measurements, collect, represent and analyse first- and second-hand data from investigations and research
- identify trends and patterns from tables and graphs.

ICT competence

Students will have opportunities to demonstrate *Student ICT Expectations* in:

Operating with ICT

- Navigate virtual and software environments, including learning objects, games, websites and publishing software

Critical and creative thinking

Students will:

• generate and evaluate knowledge, ideas and possibilities

• pose questions, make predictions, speculate and solve problems through investigation

• analyse and evaluate evidence and summarise information.

Personal and social competence

Students will:

• make responsible decisions

• work effectively in teams

• follow procedures and work safely

• make informed choices about issues that impact their lives.

Intercultural understanding

Students will consider how different cultures have contributed to the development of light science and devices.

Cross-curriculum priorities

Aboriginal and Torres Strait Islander histories and cultures

Students will explore how Aboriginal peoples and Torres Strait Islander peoples have used an understanding of refraction while spear fishing

The embedding of Aboriginal and Torres Strait Islander perspectives into the curriculum requires more than addressing curriculum and pedagogy. To ensure holistic learning, teachers need to address the other realms of the Embedding Aboriginal and Torres Strait Islander Perspectives in Schools (EATSIPS) framework; these are: personal and professional accountability, community engagement and organisational environment.

For further information refer to the sheet Delivering Aboriginal & Torres Strait Islander perspectives in the classroom.

Asia and Australia's engagement with Asia

Students will:

• explore how the communities of Asia have used an understanding of refraction while spear fishing

• consider how the peoples from the communities of Asia have contributed to the development of light science and devices.

Relevant prior curriculum

Students require prior experience from Year 1 with:

Science Understanding

Physical sciences

• Light and sound are produced by a range of sources and can be sensed

Students require prior experience from Year 3 with:

Science Understanding

Earth and space sciences

• Earth's rotation on its axis causes regular changes, including night and day

Students require prior experience from Year 4 with:

Science as a Human Endeavour

Nature and development of science

• Science involves making predictions and describing patterns and relationships

Use and influence of science

• Science knowledge helps people to understand the effect of their actions

Science Inquiry Skills

Questioning and predicting

Planning and conducting

Processing and analysing data and information

Evaluating

Communicating

Curriculum working towards

The teaching and learning in this unit works towards the following in Year 6:

Science Understanding

Physical sciences

• Energy from a variety of sources can be used to generate electricity

Science as a Human Endeavour

Nature and development of science

• Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena

• Important contributions to the advancement of science have been made by people from a range of cultures

Use and influence of science

• Scientific knowledge is used to inform personal and community decisions

Science Inquiry Skills

Questioning and predicting

Planning and conducting

Processing and analysing data and information

Evaluating

Communicating

The teaching and learning in this unit works towards the following in Year 9:

Science Understanding

Physical sciences

• Forms of energy can be transferred in a variety of ways through different mediums

Australian Curriculum, Assessment and Reporting Authority, 2013, '*The Australian Curriculum: Science for Prep (F)-10' Retrieved 8th October 2013*

< *http://www.australiancurriculum.edu.au/Science/Curriculum/F-10*>