Year 7 Syllabus

Year Level Description

The science inquiry skills and science as a human endeavour strands are described across a two-year band. In their planning, schools and teachers refer to the expectations outlined in the achievement standard and also to the content of the science understanding strand for the relevant year level to ensure that these two strands are addressed over the two-year period. The three strands of the curriculum are interrelated and their content is taught in an integrated way. The order and detail in which the content descriptions are organised into teaching and learning programs are decisions to be made by the teacher.

Incorporating the key ideas of science

Over Years 7 to 10, students develop their understanding of microscopic and atomic structures; how systems at a range of scales are shaped by flows of energy and matter and interactions due to forces, and develop the ability to quantify changes and relative amounts.

In Year 7, students explore the diversity of life on Earth and continue to develop their understanding of the role of classification in ordering and organising information. They use and develop models such as food chains, food webs and the water cycle to represent and analyse the flow of energy and matter through ecosystems and explore the impact of changing components within these systems. They consider the interaction between multiple forces when explaining changes in an object's motion. They explore the notion of renewable and non-renewable resources and consider how this classification depends on the timescale considered. They investigate relationships in the Earth-sun-moon system and use models to predict and explain events. Students make accurate measurements and control variables to analyse relationships between system components. They explore and explain these relationships through appropriate

representations and consider the role of science in decision making processes.

Science Understanding

BIOLOGICAL SCIENCES

Classification helps organise the diverse group of organisms (ACSSU111)

Interactions between organisms can be described in terms of food chains and food webs; human activity can affect these interactions (ACSSU112)

CHEMICAL SCIENCES

Mixtures, including solutions, contain a combination of pure substances that can be separated using a range of techniques (ACSSU113)

EARTH AND SPACE

Science as a Human Endeavour

NATURE AND DEVELOPMENT OF SCIENCE

Scientific knowledge has changed peoples' understanding of the world and is refined as new evidence becomes available (ACSHE119)

Science knowledge can develop through collaboration across the disciplines of science and the contributions of people from a range of cultures (ACSHE223)

Personal and social capability

USE AND INFLUENCE

Science Inquiry Skills

QUESTIONING AND PREDICTING

Identify questions and problems that can be investigated scientifically and make predictions based on scientific knowledge (ACSIS124)

Literacy

Critical and creative thinking

PLANNING AND CONDUCTING

Collaboratively and individually plan and conduct a range of investigation types, including fieldwork and experiments, ensuring safety and

SCIENCES

Predictable phenomena on Earth, including seasons and eclipses, are caused by the relative positions of the sun, Earth and the moon (ACSSU115)

Numeracy

Some of Earth's resources are renewable but others are non-renewable (ACSSU116)

Water is an important resource that cycles through the environment (ACSSU222)

PHYSICAL SCIENCES

Change to an object's motion is caused by unbalanced forces, including Earth's gravitational attraction, acting on the object

OF SCIENCE

Solutions to contemporary issues that are found using science and technology, may impact on other areas of society and may involve ethical considerations (ACSHE120)

Ethical understanding

People use science understanding and skills in their occupations and these have influenced the development of practices in areas of human activity (ACSHE121)

Ethical understanding

ethical guidelines are followed (ACSIS125)

Literacy

Critical and creative thinking

Personal and social capability

Ethical understanding

Measure and control variables, select equipment appropriate to the task and collect data with accuracy (ACSIS126)

Numeracy

Information and Communication Technology (ICT) capability

PROCESSING AND ANALYSING DATA AND INFORMATION

Construct and use a range of representations, including graphs, keys and models to

(ACSSU117)

Literacy

represent and analyse patterns or relationships in data using digital technologies as appropriate (ACSIS129)

Literacy

Numeracy

Information and Communication Technology (ICT) capability

Critical and creative thinking

Summarise data, from students' own investigations and secondary sources, and use scientific understanding to identify relationships and draw conclusions based on evidence (ACSIS130)

Literacy

Numeracy

Critical and creative

thinking

EVALUATING

Reflect on scientific investigations including evaluating the quality of the data collected, and identifying improvements (ACSIS131)

Literacy

Numeracy

Critical and creative thinking

Use scientific knowledge and findings from investigations to evaluate claims based on evidence (ACSIS132)

Literacy

Critical and creative thinking

COMMUNICATING

Communicate ideas,

findings and evidence based solutions to problems using scientific language, and representations, using digital technologies as appropriate (ACSIS133)

Literacy

Information and Communication Technology (ICT) capability

Year 7 Achievement Standard

Science Understanding

At Standard, students describe techniques to separate pure substances from mixtures. They represent and predict the effects of unbalanced forces, including Earth's gravity, on motion. Students explain how the relative positions of Earth, the sun and moon affect phenomena on Earth. They analyse how the sustainable use of resources depends on the way they are formed and cycle through Earth systems. Students classify and organise diverse organisms based on observable differences and predict the effect of human and environmental changes on interactions between organisms.

Science as a Human Endeavour

Students describe situations where scientific knowledge has been used to

solve a real-world problem.

Science Inquiry Skills

Students identify questions that can be investigated scientifically. They plan fair experimental methods, identifying variables to be changed and measured. Students select equipment that improves fairness and accuracy and describe how they considered safety. They draw on evidence to support their conclusions. Students summarise data from different sources, describe trends and refer to the quality of their data when suggesting improvements to their methods. They communicate their ideas, methods and findings using scientific language and appropriate representations.

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