Year Level Description: Science
The science inquiry skills and science as a human endeavour strands are described across the 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 3 to 6, students develop their understanding of a range of systems operating at different times and geographic scales.

In Year 3, students observe heat and its effects on solids and liquids and begin to develop an understanding of energy flows through simple systems. In observing day and night, they develop an appreciation of regular and predictable cycles. Students order their observations by grouping and classifying; in classifying things as living or non-living they begin to recognise that classifications are not always easy to define or apply. They begin to quantify their observations to enable comparison, and learn more sophisticated ways of identifying and representing relationships, including the use of tables and graphs to identify trends. They use the understanding of relationships between components of simple systems to make predictions.

Year Level Description: Digital Technologies
In Year 3, students further develop understanding and skills in computational thinking, such as categorising and outlining procedures. They have opportunities to create solutions, such as interactive adventures and simple guessing games that may involve user choice. Students explore digital systems in terms of their components, and peripheral devices, such as digital microscopes, cameras and interactive whiteboards. They collect and present data, developing an understanding of the characteristics of data and their representation.

Students learn to define simple problems using techniques to deduce and explain simple conclusions. They learn to develop their design skills by following prepared algorithms to describe branching (choice of options). Students experiment with appropriate software, including visual programming environments that use graphical elements, such as symbols and pictures to implement their solutions.

Students continue to develop an understanding of communicating ideas and information safely when using digital technologies.

Year Level Description: Design Technologies
Learning in Design and Technologies builds on the range of concepts, skills and processes developed in previous years.

In Year 3, students have opportunities to learn about technologies in society as they create solutions in at least one of the following technologies contexts: Engineering principles and systems; Food and fibre production (includes Food specialisations in this year); and Materials and technologies specialisations. Students are provided with opportunities to produce products and develop an understanding that designs for services and environments meet community needs. Students have opportunities to develop self-ownership of their ideas. They explore creative, innovative and imaginative ideas and approaches to achieve solutions. Students begin thinking about their peers, their communities and themselves as consumers, and explore the need for services and environments within both the local and broader community.

Students plan with an awareness of the characteristics and properties of materials, and the use of tools and equipment. They have opportunities to reflect on their actions, and develop decision-making skills. Students explore aspects of the social implications of existing products and processes to develop an understanding of their place in the world.

Students communicate using a range of techniques for documenting design and production ideas.

Year Level Description: Mathematics
The proficiency strands understanding, fluency, problem-solving and reasoning are an integral part of mathematics content across the three content strands: number and algebra, measurement and geometry, and statistics and probability. The proficiencies reinforce the significance of working mathematically within the content and describe how the content is explored or developed. They provide the language to build in the developmental aspects of the learning of mathematics. The achievement standards reflect the content and encompass the proficiencies.

Personal and Social Capability Skills:

Self-awareness
describe the influence that people, situations and events have on their emotions
describe personal strengths and challenges and identify skills they wish to develop
describe factors and strategies that assist their learning
reflect on personal strengths and achievements, based on self-assessment strategies and teacher feedback

Self-management
identify and describe strategies to manage and moderate emotions in increasingly unfamiliar situations
explain the value of self-discipline and goal-setting in helping them to learn
consider, select and adopt a range of strategies for working independently and taking initiative
adapt and persist with tasks when faced with challenges and adapt their approach where first attempts are not successful

Social awareness
identify the various communities to which they belong and what they can do to make a difference
describe factors that contribute to positive relationships, including with people at school and in their community

Social management
identify communication skills that enhance relationships for particular groups and purposes
describe characteristics of cooperative behaviour and identify evidence of these in group activities
contribute to and predict the consequences of group decisions in a range of situations
identify a range of conflict resolution strategies to negotiate positive outcomes to problems
discuss the concept of leadership and identify situations where it is appropriate to adopt this role

Critical and Creative Thinking:
Inquiring – identifying, exploring and organising information and ideas
post questions to expand their knowledge about the world
identify main ideas and select and clarify information from a range of sources collect, compare and categorise facts and opinions found in a widening range of sources

Generating ideas, possibilities and actions
expand on known ideas to create new and imaginative combinations
explore situations using creative thinking strategies to propose a range of alternatives
experiment with a range of options when seeking solutions and putting ideas into action

Reflecting on thinking and processes
reflect on, explain and check the processes used to come to conclusions
identify pertinent information in an investigation and separate into smaller parts or ideas
transfer and apply information in one setting to enrich another

Analysing, synthesising and evaluating reasoning and procedures
identify and apply appropriate reasoning and thinking strategies for particular outcomes
draw on prior knowledge and use evidence when choosing a course of action or drawing a conclusion

explain and justify ideas and outcomes

Information and Communication Technology Skills

Applying social and ethical protocols and practices when using ICT
acknowledge when they use digital products created by someone else, and start to indicate the source
independently apply standard guidelines and techniques for particular digital systems to secure digital information
apply standard guidelines and take action to avoid the common dangers to personal security when using ICT and apply appropriate basic social protocols when using ICT to communicate with unknown audiences
identify the value and role of ICT use at home and school

Investigating with ICT
use ICT to plan an information search or generation of information, recognising some pattern within the information, locate, retrieve or generate information from a range of digital sources
explain why located data or information was selected

Creating with ICT
use ICT to generate ideas and plan solutions
create and modify simple digital solutions, creative outputs or data representation/transformation for particular purposes

Communicating with ICT
use appropriate ICT tools safely to share and exchange information with appropriate known audiences
understand that computer mediated communications are directed to an audience for a purpose

Managing and operating ICT
identify and independently operate a range of devices, software, functions and commands, taking into consideration ergonomics when operating appropriate ICT systems, and seek solutions when encountering a problem
identify and compare the use of the main components of different ICT systems
manage and maintain digital data using common methods

STEM: Planning for Integration

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<th>Year</th>
<th>Term 1</th>
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Interpret and compare data displays without the use of digital technologies. Graphs and simple column graphs, with and without the use of digital technologies, can be used to represent data. Lists, tables, and diagrams are also useful for displaying data. Collect data, organise it into categories and describe key features. Identify symmetry in the environment. Match positions on maps with given information. Students use their understanding of the movement of Earth, materials and the behaviour of heat to suggest explanations for everyday observations. They group living things based on observable features and distinguish them from non-living things. They describe how they can use science investigations to respond to questions. Students use their experiences to identify questions and make predictions about scientific investigations. They follow procedures to collect and record observations and suggest possible reasons for their findings, based on patterns in their data. They describe how science and fairness were considered and they use diagrams and other representations to communicate their ideas.

By the end of Year 3, students use their understanding of the movement of Earth, materials and the behaviour of heat to suggest explanations for everyday observations. They group living things based on observable features and distinguish them from non-living things. They describe how they can use science investigations to respond to questions. Students use their experiences to identify questions and make predictions about scientific investigations. They follow procedures to collect and record observations and suggest possible reasons for their findings, based on patterns in their data. They describe how science and fairness were considered and they use diagrams and other representations to communicate their ideas.

By the end of Year 3, students recognise the connection between addition and subtraction and solve problems using efficient strategies for multiplication. They model and represent unit fractions. They represent money values in various ways. Students tell time to the nearest minute. Students make models of three-dimensional objects. Students conduct chance experiments and list possible outcomes. They conduct simple data investigations for categorical variables.

Mathematics: Achievement Standard
To be developed in 2015 using (assessment) work sample evidence to ‘set’ standards through paired comparisons.