**AUSVELS : Australian SCIENCE Curriculum, F-10:**

**Overarching ideas:** Patterns, order & organization; Form and function; Stability and change; Scale and Measurement; Matter and energy; Systems

There are **three strands** which are to be taught in an integrated way. The order & detail in which content descriptions are organized in to learning programs are decisions to be made by the teacher.

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| **Science Understanding** – content described by year level | **Science as Human Endeavour** – content described in 2 year bands | **Science Inquiry Skills** – content described in 2 year bands |
| **Sub strands:**Biological sciencesChemical sciencesEarth and Space sciencesPhysical sciences | **Sub strands:**Nature and development of scienceUse and influence of science | **Sub strands:**Questioning and predictingPlanning and conductingProcessing and analysing data and informationEvaluatingCommunicating |

**Year/Level 3 SCIENCE Students:**

* Observe heat and its effects on solids and liquids & begin to develop an understanding of energy flows through simple systems
* Develop an appreciation of regular and predictable cycles, such as day and night
* Order observations by grouping and classifying; in classifying things as living and non-living, realising that classifications are not always easy to define or apply
* Quantify observations to enable comparison & learn more sophisticated ways of identifying and representing relationships, including the use of tables and graphs to identify trends
* Use understanding of relationships between components of simple systems to make predictions

\*This document intends to assist teachers in their implementation of the Australian curriculum through AUSVELS– it combines description and elaboration statements. The blue elaborations are examples of how the learning can be achieved; not a list of tasks that have to be done. Teachers are advised to consult the online documentation to clarify further detail for themselves. The ‘AusVELS’ is the official documentation for Victorian schools.

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| **Science understanding:** | **Science as Human Endeavour:** | **Science Inquiry Skills:** |
| **Biological sciences:**Living things can be grouped on the basis of observable features and can be distinguished from nonliving things (ACSSU044)* recognising characteristics of living things such as growing, moving sensitivity and reproducing
* recognising the range of different living things
* sorting living and non-living things based on characteristics
* exploring differences between living, once living and products of living things

**Chemical sciences:**A change of state between solid and liquid can be caused by adding or removing heat (ACSSU046) * investigating how liquids and solids respond to changes in temperature, for example water turning into ice or melting chocolate
* exploring how changes from solid to liquid and liquid to solid can help us recycle materials
* predicting the effect of heat on different materials

**Earth and space sciences:**Earth’s rotation on its axis causes regular changes, including night and day (ACSSU048)* recognising the sun as a source of light
* constructing sundials and investigating how they work
* describing timescales for the rotation of earth
* modelling the relative sizes and movement of the sun, Earth and moon

**Physical sciences:**Heat can be produced in many ways and can move from one object to another (ACSSU049)* describing how heat can be produced such as through friction or motion, electricity or chemically (burning)
* identifying changes that occur in everyday situations due to heating and cooling
* exploring how heat can be transferred through conduction
* recognising the we can feel heat and measure its effects using a thermometer
 | **Nature & development of Science:**Science involves making predictions and describing patterns and relationships (ACSHE050) * making predictions about change and events in our environment
* researching how knowledge of astronomy has been used by some Aboriginal and Torres Strait Islander people
* considering how posing questions helps us plan for the future

**Use & influence of science:**Science knowledge helps people to understand the effect of their actions (ACSHE051) * considering how heating affects materials used in everyday life
* investigating how science helps people such as nurses, doctors, dentists, mechanics and gardeners
* considering how materials including solids and liquids affect the environments in different ways
* deciding what characteristics make a material a pollutant
* researching Aboriginal and Torres Strait Islander people’s knowledge of local natural environment, such as the characteristics of plants and animals
 | **Questioning & predicting:**With guidance, identify questions in familiar contexts that can be investigated scientifically and predict what might happen based on prior knowledge (ACSIS053)* choosing questions to investigate from a list of possibilities
* jointly constructing questions that may form the basis for investigation
* listing shared experiences as a whole class and identifying possible investigations
* working in groups to discuss things that might happen during an investigation

**Planning & conducting:**Suggest ways to plan and conduct investigations to find answers to questions (ACSIS054)* working with teacher guidance to plan investigations, to test simple cause-and-effect relationships
* discussing as a whole class ways to investigate questions and evaluating which ways might be most successful

Safely use appropriate materials, tools or equipment to make and record observations, using formal measurements and digital technologies as appropriate (ACSIS055)* recording measurements using familiar formal units and appropriate abbreviations, such as seconds (s), grams (g) and centimetres (cm)
* using a variety of tools to make observations, such as digital cameras, thermometers, rulers and scales
* discussing safety rules for equipment and procedures

**Processing & analyzing data & information:**Use a range of methods including tables and simple column graphs to represent data and to identify patterns and trends (ACSIS057)* using provided tables to organise materials and objects based on observable properties
* discussing how to graph data presented in a table
* indentifying and discussing numerical and visual patterns in data collected from students’ investigations and from other sources

Compare results with predictions, suggesting possible reasons for findings (ACSIS215)* discussing how well predictions matched results from an investigation and sharing ideas about what was learnt

**Evaluating:**Reflect on the investigation; including whether a test was fair or not (ACSIS058)* describing experiences of carrying out investigations to the teacher, small group or whole class
* discussing as a whole class the idea of fairness in testing

**Communicating:**Represent and communicate ideas and findings in a variety of ways such as diagrams, physical representations and simple reports (ACSIS060)* communicating with other students carrying out similar investigations to share experiences and improve investigation skills
* exploring different ways to show processes and relationships through diagrams, models and role play
* using simple explanations and arguments, reports or graphical representation to communicate idea to other students

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| **Level 3 Achievement Standard:**By the end of Level 3, students use their understanding of the movement of the Earth, materials and the behaviour of heat to suggest explanations for everyday observations They describe features common to living things. They describe how they can use science investigations to respond to questions and identify where people use science knowledge in their lives.Students use their experiences to pose questions and predict the outcomes of investigations. They make formal measurements and follow procedures to collect and present observations in a way that helps to answer the investigation questions. Students suggest possible reasons for their findings. They describe how safety and fairness were considered in their investigations. They use diagrams and other representations to communicate their ideas. |

Cross-curriculum priorities to be included in all learning areas: Aboriginal and Torres Strait Islander histories and cultures (); Asia and Australia’s engagement with Australia (ã ); Sustainability ()

Reference : <http://ausvels.vcaa.vic.edu.au/> This grid is an adaption of the information from the VCAA site to create a visual representation to assist teachers.