# Content for Stage 1

## Stage 1

By the end of Stage 1, students engage in the processes of Working Scientifically, and Design and Production. They participate in guided investigations, pose and respond to questions and make predictions. Students collect and represent information using a variety of methods. They safely manipulate equipment and materials, making sustainable and time-efficient choices. Students generate and develop design ideas and solutions that they communicate with labelled drawings and models and through the use of digital technologies where appropriate. They provide explanations about what they have done and evaluate their ideas using predetermined criteria.

Students describe the external features, changes and growth of living things and how their environments provide for their needs. They identify how plants and animals are produced for food and fibre. Students investigate the characteristics and properties of materials, how they can be changed and combined for a purpose. Students identify heat, light and sound energy and explore how forces and energy can be used. They are able to identify observable changes that occur on the Earth and in the sky and how humans care for the environment and Earth’s resources. Students identify the components of digital systems and explore how data is represented through pictures, symbols and diagrams. They describe, follow and represent algorithms that are needed to solve problems.

## Living World

### Outcomes

**A student:**

* observes, questions and collects data to communicate and compare ideas ST1-1WS-S
* uses materials, tools and equipment to develop solutions for a need or opportunity ST1-2DP-T
* describes observable features of living things and their environments ST1-4LW-S
* identifies how plants and animals are used for food and fibre products ST1-5LW-T

### Content Focus

Stage 1 of the Living World strand focuses on the features of living things, their environment and how they change and reproduce. Students investigate how plants and animals are used to satisfy our needs for food and fibre. Stage 1 of this strand develops students’ understanding of how living things and their environment play a central role in the support for and survival of humans.

### Skills Focus

#### Working Scientifically

**Planning and conducting investigations**

* explore and answer questions through participation in guided scientific investigations (ACSIS025, ACSIS038)
* collect data from observations
* record observations accurately and honestly using observational drawings, labelling, informal measurements and digital technologies (ACSIS026, ACSIS039)
* compare observations with those of others (ACSIS041, ACSIS213)
* develop collaboration skills to effectively conduct investigations
* make safe choices when using materials and equipment

**Processing and analysing data**

* use a range of methods to sort and collate information
* represent information using drawings and simple tables, including digital representation methods (ACSIS027, ACSIS040)

#### Design and Production

**Researching and planning**

* generate ideas for design solutions for a defined purpose
* consider sustainable use of resources in planning design solutions
* develop design ideas in response to defined brief
* record design ideas using labelled and annotated drawings including simple digital graphic representations (ACTDEP006)

**Producing and implementing**

* effectively manage a variety of tools
* manipulate a range of materials for a purpose
* consider safety, sustainability and time constraints when producing solutions (ACTDEP007)
* segment and sequence steps for making designed solutions
* collaborate to develop designed solutions
* perform strategic roles within a group to solve a problem (ACTDEP009)

### Inquiry and Focus Questions

* What are the external features of living things?
* How can we improve a local environment to encourage living things to thrive?
* How do living things change as they grow?
* How do humans use plants and animals?

### Content

**External features of living things**

**Inquiry question:** What are the external features of living things?

Students:

* describe the external features of a variety of living things (ACSSU017) Literacy icon
* identify and group plants and animals using their external features, for example: **SciT** **SysT** Literacy iconCritical and creative thinking icon
  + native and introduced plants and animals
  + worms, insects, fish, reptiles, birds and mammals

**Living things live in different places**

**Inquiry question:** How can we improve a local environment to encourage living things to thrive?

Students:

* identify that living things live in different places that suit their needs (ACSSU211) Intercultural understanding icon Civics and citizenship icon
* design and produce an environment to cater for the needs of a living thing, for example: **DesT** Sustainability icon Critical and creative thinking icon Ethical understanding icon Civics and citizenship icon
  + encourage the growth of a plant, eg greenhouses, hydroponics
  + encourage the return of a living thing to a local habitat
* recognise that people use science and technology in their daily lives, including when caring for their environment and living things (ACSHE022, ACSHE035) Sustainability icon Critical and creative thinking icon Ethical understanding icon

**Living things change**

**Inquiry question:** How do living things change as they grow?

Students:

* explore how living things grow, change and have offspring similar to themselves (ACSSU030) **SciT**
* record the changes in growth of a common plant or animal, using uniform informal units and appropriate technologies **ComT SysT** Information and communication technology capability icon Literacy icon Numeracy icon

**Plants and animals used for food and fibre**

**Focus question:** How do humans use plants and animals?

Students:

* identify some plants and animals that are grown and used for food production (ACTDEK003) **SysT** Sustainability icon Information and communication technology capability icon Literacy icon
* explore the plants and animals used in customary practices of Aboriginal and Torres Strait Islander Peoples Aboriginal and Torres Strait Islander histories and cultures icon Information and communication technology capability icon Difference and diversity icon
* explore the tools, equipment and techniques used to prepare food safely and hygienically for healthy eating (ACTDEK003) **SysT** Ethical understanding icon Civics and citizenship icon Work and enterprise icon
* investigate ways people use scientific and technological knowledge and skills to sustainably grow plants and animals to produce fibre for clothing and/or shelter **SciT** Aboriginal and Torres Strait Islander histories and cultures iconAsia and Australia’s engagement with Asia icon Sustainability icon Information and communication technology capability icon Literacy icon

## Material World

### Outcomes

**A student:**

* observes, questions and collects data to communicate and compare ideas ST1-1WS-S
* uses materials, tools and equipment to develop solutions for a need or opportunity ST1-2DP-T
* identifies that materials can be changed or combined ST1-6MW-S
* describes how the properties of materials determine their use ST1-7MW-T

### Content Focus

Stage 1 of the Material World strand focuses on how materials can be changed, manipulated and combined. Students have the opportunity to develop a design solution demonstrating the suitability of materials for a purpose. Stage 1 of this strand develops students’ understanding of the properties of materials and their uses.

### Skills Focus

#### Working Scientifically

**Questioning and predicting**

* pose questions about familiar objects and events
* respond to questions and make predictions about familiar objects and events (ACSIS024, ACSIS037)

**Planning and conducting investigations**

* explore and answer questions through participation in guided scientific investigations (ACSIS025, ACSIS038)
* collect data from observations
* record observations accurately and honestly using observational drawings, labelling, informal measurements and digital technologies (ACSIS026, ACSIS039)
* compare observations with those of others (ACSIS041, ACSIS213)
* develop collaboration skills to effectively conduct investigations
* make safe choices when using materials and equipment

#### Design and Production

**Producing and implementing**

* effectively manage a variety of tools
* manipulate a range of materials for a purpose
* consider safety, sustainability and time constraints when producing solutions (ACTDEP007)
* segment and sequence steps for making designed solutions
* collaborate to develop designed solutions
* perform strategic roles within a group to solve a problem (ACTDEP009)

**Testing and evaluating**

* evaluate the success of design ideas, processes and solutions according to a scale of personal preference
* identify the positive and negative impact of a design solution within an environment (ACTDEP008)

### Inquiry and Focus Questions

* What changes occur when materials are combined?
* How do the properties of materials determine their use?

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**Materials can be combined and changed**

**Inquiry question:** What changes occur when materials are combined?

Students:

* investigate how materials can be changed by bending, twisting and stretching (ACSSU018) **DesT SysT** Critical and creative thinking icon Literacy icon
* investigate how different materials can be combined (ACSSU031) **SciT** Critical and creative thinking icon Numeracy icon

**Materials are used for a specific purpose**

**Focus question:** How do the properties of materials determine their use?

Students:

* identify a range of natural materials available locally or through trade used by Aboriginal and/or Torres Strait Islander Peoples for a specific cultural purpose **DesT SysT** Aboriginal and Torres Strait Islander histories and cultures icon Literacy icon Intercultural understanding icon Difference and diversity icon
* design and evaluate a product, demonstrating understanding of the suitability of materials for a purpose **DesT SysT** Critical and creative thinking icon Literacy icon Personal and social capability icon Work and enterprise icon