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| NSW Education Standards Authority |  |

**Technology 7–8 (2023)**

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# **Technology 7–8 (2023)**

## **Implementation from 2026**

The new Technology 7–8 Syllabus (2023) is to be implemented from 2026 and will replace the [****Technology Mandatory 7–8 Syllabus (2017)****](https://educationstandards.nsw.edu.au/wps/portal/nesa/k-10/learning-areas/tas/technology-mandatory-7-8-new-syllabus)****.****

****2025**** – Plan and prepare to teach the new syllabus

****2026**** – Start teaching the new syllabus

School sectors are responsible for implementing syllabuses and are best placed to provide schools with specific guidance and information on implementation given their understanding of their individual contexts. Schools may choose to implement the new syllabus during the planning and preparation phase.

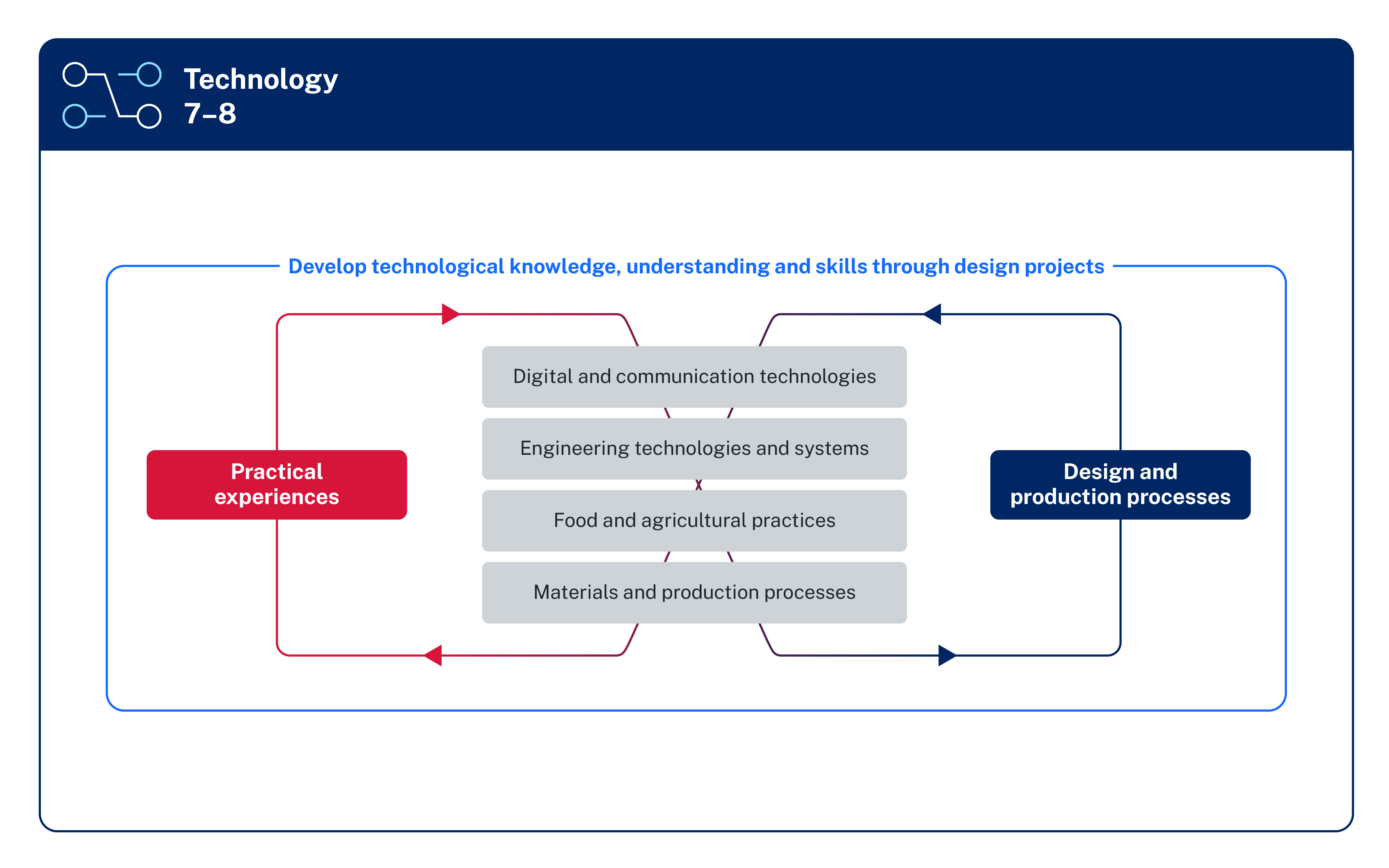
## **Overview**

### **Syllabus overview**

#### **Organisation of Technology 7–8**

The organisation of outcomes and content for Technology 7–8 illustrates the important role of practical experiences and design and production processes in the development of technological knowledge, understanding and skills.

Outcomes and content are organised under focus areas.  
  
Figure 1 shows the organisation of Technology 7–8.



*Figure 1: The organisation of Technology 7–8*

*Image long description:* The 4 focus areas are identified in the centre of the diagram. They are Digital and communication technologies, Engineering technologies and systems, Food and agricultural practices, and Materials and production processes. A figure-eight loop intersecting the focus areas at the centre is labelled Practical experiences on the left and Design and production processes on the right. A single continuous line is labelled Develop technological knowledge, understanding and skills through design projects, and it encircles all content.

#### **Life Skills outcomes and content**

Students with disability can [access](https://educationstandards.nsw.edu.au/wps/portal/nesa/k-10/diversity-in-learning/special-education/accessing-the-curriculum) the syllabus outcomes and content in a range of ways. Decisions regarding curriculum options should be made in the context of [collaborative curriculum planning.](https://educationstandards.nsw.edu.au/wps/portal/nesa/k-10/diversity-in-learning/special-education/collaborative-curriculum-planning)

Some students with intellectual disability may find the Years 7–10 Life Skills outcomes and content the most appropriate option to follow in Stage 4 and/or Stage 5. Before determining whether a student is [eligible](https://educationstandards.nsw.edu.au/wps/portal/nesa/k-10/diversity-in-learning/special-education/life-skills/eligibility) to undertake a course based on Life Skills outcomes and content, consideration should be given to other ways of assisting the student to engage with the Stage 4 and/or Stage 5 outcomes, or prior stage outcomes if appropriate. This assistance may include a range of [adjustments](https://educationstandards.nsw.edu.au/wps/portal/nesa/k-10/diversity-in-learning/special-education/adjustments) to teaching, learning and assessment activities.

Life Skills outcomes cannot be taught in combination with other outcomes from the same subject. Teachers select specific Life Skills outcomes to teach based on the needs, strengths, goals, interests and prior learning of each student. Students are required to demonstrate achievement of one or more Life Skills outcomes.

#### **Protocols for collaborating with Aboriginal and Torres Strait Islander Communities and engaging with Cultural works**

NESA is committed to working in partnership with Aboriginal Communities and supporting teachers, schools and schooling sectors to improve educational outcomes for young people.

It is important to respect appropriate ways of interacting with Aboriginal Communities and Cultural material when teachers plan, program and implement Technology learning experiences that focus on Aboriginal and Torres Strait Islander Priorities.

Indigenous Cultural and Intellectual Property (ICIP) protocols need to be followed. Aboriginal and Torres Strait Islander Peoples’ ICIP protocols include Cultural Knowledges, Cultural Expression and Cultural Property and documentation of Aboriginal and Torres Strait Islander Peoples’ Identities and lived experiences. It is important to recognise the diversity and complexity of different Cultural groups in NSW, as protocols may differ between local Aboriginal Communities.

Teachers should work in partnership with Elders, parents, Community members, Cultural Knowledge Holders, or a local, regional or state Aboriginal Education Consultative Group. It is important to respect Elders and the roles of men and women. Local Aboriginal Peoples should be invited to share their Cultural Knowledges with students and staff when engaging with Aboriginal histories and Cultural Practices.

#### **Creating written texts supports learning**

The development of the *Technology 7–8 Syllabus* follows Recommendation 2: ‘Clarify and strengthen writing content in syllabus documents’ from [*Teaching writing: report of the thematic review of writing*](https://www.nsw.gov.au/education-and-training/nesa/about/research/reports/teaching-writing/teaching-writing-report) (NESA 2018).

Creating written texts facilitates learning as it promotes explicitness, encourages the integration of ideas, supports reflection, fosters personal engagement and aids learners to think about the significance and implication of ideas. Each subject has particular and specific writing demands relevant for communicating within and about the discipline. Writing about content enhances understanding across subjects and stages.

The secondary curriculum includes:

* systematic development of expectations for creating written texts which align with the *English K–10 Syllabus* (2022)
* explicit writing content to support students to become fluent creators of texts and to deepen their understanding of the subject area
* opportunities to practise the process of creating written texts to develop and communicate knowledge, understanding and ideas
* a focus on development of word consciousness and precise use of subject-specific terminology.

Creating written texts refers to the act of composing and constructing a text for a particular purpose, audience and context.

Various methods of transcription may be employed, and a student’s preferred communication form(s) should be considered when teaching.

#### **Balance of content**

The content groups describe the knowledge and skills students develop to become creative, safe and responsible users of technologies. The practical application of knowledge and skills is embedded in the outcomes and content to support the foundation for learning in technologies through projects.

The amount of content associated with a given outcome is not necessarily indicative of the amount of time spent engaging with the respective outcome. Teachers use formative and summative assessment to determine instructional priorities and the time needed for students to demonstrate expected outcomes.

The content groups describe in more detail how the outcomes are to be interpreted and demonstrated, and the intended learning appropriate for the stage. Teachers may make decisions about the sequence and emphasis to be given to groups of content based on the needs and abilities of their students. Projects may include content points from multiple focus areas or within one focus area.

### **Course description**

The Technology 7–8 syllabus includes 2 courses:

* Technology 7–8 200 hours
* Technology 7–8 Life Skills 200 hours

The focus of learning for all courses in the *Technology 7–8 Syllabus* is described below.

The *Technology 7–8 Syllabus* enables students to develop the essential knowledge, understanding and skills of technological learning. Students engage in project work and practical experiences to investigate design opportunities, organise and apply knowledge, conceptualise and develop inspired ideas into sustainable, quality solutions. Students develop their technological skills through the design and production of creative solutions.

#### **What students learn**

Students learn to use technologies to design and produce solutions. Through practical experiences and project work students learn to interpret, develop, manage and create products, systems and environments. Students learn about Aboriginal and Torres Strait Islander People’s use of technologies, including examples of design, innovation, technologies and sustainable resource management practices. Students investigate how the application of technologies can contribute to sustainability.

#### **Course requirements**

To meet the mandatory curriculum requirements for students by the end of Year 10, schools must timetable 200 hours of mandatory Technology in Years 7 and 8.

##### **Technology 7–8**

* All focus areas must be delivered across Years 7–8.
* Students must undertake practical learning and project work for most of the course time.
* Projects developed must ensure that all content can be experienced across Years 7–8. Some students with disability may require [adjustments](https://educationstandards.nsw.edu.au/wps/portal/nesa/k-10/diversity-in-learning/special-education/adjustments) and/or additional support in order to engage in practical experiences.
* Students must document, communicate and evaluate design and production processes for projects across Years 7–8.

##### **Life Skills**

For Technology Life Skills 7–8:

* Students are required to demonstrate achievement of one or more Technology Life Skills 7–8 outcomes.
* Outcomes and content should be selected to meet the particular needs of individual students.
* The focus areas provide possible frameworks for addressing the Technology Life Skills 7–8 outcomes and content and are suggestions only. Teachers have the flexibility to select, group and sequence outcomes and content to meet the needs, strengths, goals, interests and prior learning of their students.
* Where appropriate, students should have the opportunity to engage in practical learning or project work. Some students with disability may require [adjustments](https://educationstandards.nsw.edu.au/wps/portal/nesa/k-10/diversity-in-learning/special-education/adjustments) and/or additional support in order to engage in practical experiences.

##### **Project work and practical experiences**

To satisfy the requirements of the syllabus, students undertake project work and a range of practical experiences. These experiences should be used to develop the skills designing, collaborating, communicating, documenting and using technologies.

Practical experiences should be designed to be accessible to all students. Practical experiences may include fieldwork, investigation, experimentation, prototyping and production activities.

Students can be supported and extended as they develop skills for design and production processes in technology. Individual interests can be fostered through participation in a range of technology contexts, including school-developed technology contexts.

##### **Safety, risk management and animal welfare**

Schools are required to ensure they follow [safety and risk management, including the welfare of animals](https://curriculum.nsw.edu.au/about-the-curriculum/safety-and-risk-management), in delivering the *Technology 7–8 Syllabus*.

##### **Biosecurity**

Schools have a legal responsibility in relation to plant and animal biosecurity. The production of plants and animals, including all practical activities involving plants and animals, must comply with relevant guidelines and legislation that are interpreted for schools on the [*Animals in Schools – Biosecurity*](https://education.nsw.gov.au/teaching-and-learning/animals-in-schools/animals-in-schools-issues/biosecurity) website (NSW Department of Education 2023).

#### **Further information for Technology 7–8**

* Course number: N/A
* Course hours: 200
* Enrolment type: Mandatory
* Endorsement type: Board developed
* Study via self-tuition: No

##### **Exclusions**

Students may not access Life Skills outcomes and other outcomes from the same subject.

#### **Further information for Technology 7–8 Life Skills**

* Course number: N/A
* Course hours: 200
* Enrolment type: Mandatory
* Endorsement type: Board developed
* Study via self-tuition: No

##### **Exclusions**

Students may not access Life Skills outcomes and other outcomes from the same subject.

#### **RoSA information**

To meet the mandatory curriculum requirements for RoSA by the end of Year 10, schools must timetable 200 hours of mandatory Technology 7–8 in Years 7 and 8.

More information about the [mandatory curriculum requirements](https://curriculum.nsw.edu.au/ace-rules/ace5/curriculum-requirements#acerule=n5_1) is available on the NSW Curriculum website.

## **Rationale**

The study of technology prepares students to embrace emerging technological opportunities and challenges, enabling them to thrive in a contemporary world. Students are inspired to design innovative local and global solutions that can influence the lives of people and societies. Technological knowledge, skills and processes are used to interpret, develop, manage and create products, systems and environments.

The *Technology 7–8 Syllabus* provides students with opportunities to develop their technological literacy through the design and production of creative solutions. Students investigate resource management practices to understand how the application of technologies can contribute to sustainability. The exploration of sustainable design and production practices enables them to understand the challenges, limitations and consequences of developing designed solutions.

Students explore ideas that address changing societal values and expectations, leading to opportunities for enterprise, including Aboriginal and Torres Strait Islander designs and technologies. They engage in design and production independently and collaboratively. Students learn about and apply safe practices and refine their skills working with varied materials and production technologies. Practical and project management experiences support students to analyse problems or challenges, organise and apply knowledge, conceptualise, and transform creative ideas into sustainable, quality solutions.

The syllabus provides opportunities for students to develop their digital literacy and ethical understanding and to apply principles of sustainable design. Students develop a knowledge and appreciation of the properties, characteristics and finite nature of materials, and explore the interrelationship between design, technology, society and the environment.

By making personal, local and global connections, students are supported to recognise the role of technology in solving real-world problems in familiar and unfamiliar situations. They may apply their knowledge of a variety of technological experiences to further education, work and career opportunities in design, technology, engineering, science, mathematics and related fields.

Technological understanding helps students realise that success in design is measured through accessibility, functionality and the degree to which a solution meets the specific needs of people in diverse contexts and societies.

## **Aim**

The aim of the *Technology 7–8 Syllabus* is to enable students to:

* develop knowledge and skills to enhance creativity and innovation in technologies
* become safe and responsible users of technologies and materials
* develop skills using technologies to design, produce and evaluate creative solutions
* understand the interrelationships between sustainability, technology, materials and the environment.

## **Table of outcomes**

*The table below displays the Technology 7–8 focus areas and their associated outcomes. The relationship between Stage 4 and Life Skills outcomes is shown in the Related Life Skills column. Life Skills focus areas and their associated outcomes are listed in full in the Life Skills section of the syllabus.*

### **Secondary (7–10)**

| **Focus area** | **Stage 4** |
| --- | --- |
| **Digital and communication technologies** | **TE4-SDP-01**  explains relationships between sustainability, design and production  **TE4-DES-01**  communicates and evaluates design ideas and solutions  **TE4-PPM-01**  applies processes in the planning, management and production of projects  **TE4-SAF-01**  selects and safely uses tools, materials, technologies and processes  **TE4-DIG-01**  demonstrates technological literacy to safely interact in digital environments  **TE4-DIG-02**  uses data and digital systems to code, design and produce projects |
| **Engineering technologies and systems** | **TE4-SDP-01**  explains relationships between sustainability, design and production  **TE4-PDP-01**  describes the practices and processes of designers and producers  **TE4-MSC-01**  explains how materials, systems and components contribute to solutions  **TE4-DES-01**  communicates and evaluates design ideas and solutions  **TE4-PPM-01**  applies processes in the planning, management and production of projects  **TE4-SAF-01**  selects and safely uses tools, materials, technologies and processes |
| **Food and agricultural practices** | **TE4-SDP-01**  explains relationships between sustainability, design and production  **TE4-PDP-01**  describes the practices and processes of designers and producers  **TE4-DES-01**  communicates and evaluates design ideas and solutions  **TE4-PPM-01**  applies processes in the planning, management and production of projects  **TE4-SAF-01**  selects and safely uses tools, materials, technologies and processes |
| **Materials and production processes** | **TE4-SDP-01**  explains relationships between sustainability, design and production  **TE4-PDP-01**  describes the practices and processes of designers and producers  **TE4-MSC-01**  explains how materials, systems and components contribute to solutions  **TE4-DES-01**  communicates and evaluates design ideas and solutions  **TE4-PPM-01**  applies processes in the planning, management and production of projects  **TE4-SAF-01**  selects and safely uses tools, materials, technologies and processes |

Before deciding that a student should undertake a course based on Life Skills outcomes and content, consideration should be given to other ways of assisting the student to engage with the Stage 4 or Stage 5 outcomes. Further information in relation to planning, implementing and assessing Life Skills outcomes and content can be found on the [NESA website](https://educationstandards.nsw.edu.au/wps/portal/nesa/k-10/diversity-in-learning/special-education/life-skills).

## **Outcomes and content for Stage 4**

### **Digital and communication technologies**

#### **Outcomes**

A student:

* explains relationships between sustainability, design and production ****TE4-SDP-01****
* communicates and evaluates design ideas and solutions ****TE4-DES-01****
* applies processes in the planning, management and production of projects ****TE4-PPM-01****
* selects and safely uses tools, materials, technologies and processes ****TE4-SAF-01****
* demonstrates technological literacy to safely interact in digital environments ****TE4-DIG-01****
* uses data and digital systems to code, design and produce projects ****TE4-DIG-02****

**Related Life Skills outcomes:** TELS-SDP-01, TELS-SDP-02, TELS-DES-01, TELS-PPM-01, TELS-PPM-02, TELS-PPM-03, TELS-SAF-01, TELS-DIG-01, TELS-DIG-02

#### **Content**

##### **Identifying and defining digital and communication technologies**

* Identify appropriate hardware and software to develop design ideas and solutions
* Describe secure methods to share data and information safely online

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| ****Example(s):****  Privacy, access and group settings, curating posts. |

* Outline factors affecting the design of digital solutions

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| ****Example(s):****  Accessibility, aesthetics, ethics, functionality, resources, safety, sustainability. |

##### **Researching and planning ideas and solutions**

* Investigate data transmission and security through wired, wireless and mobile networks
* Collect, use and store data and information from a range of sources

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| ****Example(s):****  Use existing datasets and information, gather target market information, collect data using sensors. |

* Assess cybersecurity and privacy risks

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| ****Example(s):****  Phishing techniques, passive digital footprints, social media algorithms, culturally sensitive issues, approval to use photographs. |

* Explain ethical considerations for the ownership of data, information and artificial intelligence (AI) applications

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| ****Example(s):****  Aboriginal Cultural Knowledge protected by Indigenous Cultural and Intellectual Property (ICIP), intellectual property (IP). |

* Describe how digital solutions and communication technologies can contribute to sustainability

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| ****Example(s):****  Blockchain end-to-end traceability, Internet of Things (IoT) sensors, 3D printing, marine telemetry. |

* Apply computational and systems thinking to assess ideas and develop quality solutions
* Investigate how Aboriginal communication practices inform current and emerging digital and communication technologies

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| ****Example(s):****  Graphics, pictographs, petroglyphs, Songlines, Aboriginal Language and Cultural apps, yarning circles, Indigenous artistic symbols. |

* Use hardware and software to design, communicate and manage the development of digital solutions

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| ****Example(s):****  Computer-aided design (CAD), use of graphics tablets and stylus, keyboarding skills, hand gesture recognition (HGR), 3D scanners and printers, laser cutters, interactive infographics, spreadsheets, databases, flow charts in accessible forms. |

* Create written texts and use graphics applications to communicate design ideas and solutions

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| ****Example(s):****  Digital writing, technical writing, procedural writing. |

##### **Producing and implementing processes, solutions and projects**

* Use algorithms to solve problems and design solutions
* Select data, information, tools, systems and technologies to make digital solutions and projects
* Design user interfaces (UI) considering the user experience (UX) of digital systems

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| ****Example(s):****  Design accessible user interfaces, consideration and application of Web Content Accessibility Guidelines (WCAG), virtual reality (VR), augmented reality (AR). |

* Develop and trace algorithms using branching, iteration and a range of data types

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| ****Example(s):****  Diagrammatic and tactile representations using flow charts and pseudocode, checking logic of ‘if–then’ statements. |

* Use control structures and functions to implement, modify and test programs using coding

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| ****Example(s):****  Block-based, text-based. |

* Demonstrate safe practices when using and developing digital and communication technologies

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| ****Example(s):****  Multifactor authentication, passphrases and measures used to prevent unauthorised access. |

* Document design processes when using digital and communication technologies

##### **Testing and evaluating data, tools, systems and technologies**

* Evaluate authenticity, accuracy and timeliness of data and information
* Use data and digital systems to code, test and evaluate design ideas and quality solutions
* Work collaboratively to optimise digital solutions and algorithms

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| ****Example(s):****  Trace algorithms, error detection and rectification, systematic troubleshooting. |

* Use factors affecting design to evaluate user interfaces (UI) and user experiences (UX)

### **Engineering technologies and systems**

#### **Outcomes**

A student:

* explains relationships between sustainability, design and production ****TE4-SDP-01****
* describes the practices and processes of designers and producers ****TE4-PDP-01****
* explains how materials, systems and components contribute to solutions ****TE4-MSC-01****
* communicates and evaluates design ideas and solutions ****TE4-DES-01****
* applies processes in the planning, management and production of projects ****TE4-PPM-01****
* selects and safely uses tools, materials, technologies and processes ****TE4-SAF-01****

**Related Life Skills outcomes:** TELS-SDP-01, TELS-SDP-02, TELS-PDP-01, TELS-MSC-01, TELS-DES-01, TELS-PPM-01, TELS-PPM-02, TELS-PPM-03, TELS-SAF-01

#### **Content**

##### **Identifying and defining engineering technologies and systems**

* Identify the characteristics and properties of components in engineered systems
* Describe products, systems and technologies developed by engineers and manufacturers
* Outline factors affecting the design of engineered systems

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| ****Example(s):****  Accessibility, aesthetics, durability, ergonomics, ethics, functionality, performance, safety, sustainability. |

##### **Researching and planning ideas and solutions**

* Investigate engineered systems created by Aboriginal and Torres Strait Islander Peoples

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| ****Example(s):****  Brewarrina fish traps, Budj Bim eel traps, Kalwa raft, weirs, David Unaipon’s straight-line motion shearing machine. |

* Describe how engineered solutions use materials, components and systems

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| ****Example(s):****  Circuits, simple machines, microcontrollers, electronics, mechatronics. |

* Explain how force, motion and energy apply to engineered systems

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| ****Example(s):****  Gears, levers, pulleys, wind turbines, water turbines and water wheels. |

* Investigate how engineering technologies and systems can improve production quality
* Explore engineered solutions that address societal needs and contribute to sustainability

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| ****Example(s):****  Public transport systems using renewable energy, accessibility features, community battery-sharing, smart water grids. |

* Apply design and systems thinking to assess ideas and develop quality solutions
* Collect data and information to develop engineered solutions
* Use graphical communication techniques to present ideas for products and systems

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| ****Example(s):****  Computer-aided design (CAD), interactive media, sketching, pictorial drawing, orthogonal drawing, AS 1100. |

##### **Producing and implementing processes, solutions and projects**

* Use materials, components, processes and technologies to develop engineering skills
* Select components, technologies and systems to make engineering solutions and projects
* Demonstrate safe practices when selecting and using tools, processes and technologies
* Document design and production processes when developing projects

##### **Testing and evaluating tools, materials, systems and technologies**

* Apply engineering processes to create and evaluate prototypes and working models
* Justify materials and components used when testing engineering technologies and systems
* Work collaboratively to test, modify and improve engineered solutions
* Use results of testing and evaluating to contribute to an engineering report
* Evaluate engineering technologies and systems developed to improve sustainability
* Use factors affecting design to evaluate the quality of engineered solutions

### **Food and agricultural practices**

#### **Outcomes**

A student:

* explains relationships between sustainability, design and production ****TE4-SDP-01****
* describes the practices and processes of designers and producers ****TE4-PDP-01****
* communicates and evaluates design ideas and solutions ****TE4-DES-01****
* applies processes in the planning, management and production of projects ****TE4-PPM-01****
* selects and safely uses tools, materials, technologies and processes ****TE4-SAF-01****

**Related Life Skills outcomes:** TELS-SDP-01, TELS-SDP-02, TELS-PDP-01, TELS-DES-01, TELS-PPM-01, TELS-PPM-02, TELS-PPM-03, TELS-SAF-01

#### **Content**

##### **Identifying and defining food and agricultural practices**

* Identify the characteristics and properties of food, fibre and agricultural products

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| ****Example(s):****  Nutrient composition, functional properties, sensory characteristics. |

* Describe food and agricultural industries in New South Wales

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| ****Example(s):****  Agriculture, aquaculture, fisheries, fibre production, food manufacturing, animals and livestock, forestry. |

* Outline factors affecting the design of food and agricultural practices

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| ****Example(s):****  Aesthetics, ergonomics, ethics, finance, functionality, safety, sustainability. |

##### **Researching and planning ideas and solutions**

* Investigate how Aboriginal and Torres Strait Islander Peoples select and use plants and animals to improve nutrition

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| ****Example(s):****  Bush foods high in nutritional density, including fibre and micronutrients. |

* Compare Aboriginal and Torres Strait Islander Peoples’ sustainable resource management practices with emerging agricultural practices

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| ****Example(s):****  Budj Bim National Heritage Landscape, fire for biodiversity, Spiritual attachment to plants and animals. |

* Describe how food and agricultural products are grown, harvested, manufactured, packaged and distributed
* Investigate current and emerging technologies used to improve quality in production and distribution

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| ****Example(s):****  Genetically modified (GM) foods, ecologically sustainable production methods, organic farming practices, smart tracking devices. |

* Explain social, ethical and legal considerations associated with food and agricultural production

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| ****Example(s):****  Animal welfare, the Australian Dietary Guidelines, Australian food security, biosecurity, the Australia New Zealand Food Standards Code. |

* Investigate nutritional needs of individuals and groups with specific needs

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| ****Example(s):****  Cultural considerations, lifecycle stages, religious beliefs, medical needs, lifestyle choices. |

* Describe community food initiatives used to contribute to sustainability
* Apply critical and creative thinking to assess ideas for quality food and/or agricultural solutions

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| ****Example(s):****  Concept maps, mind maps, graphic organisers, flow charts. |

* Create written texts to document food production processes and/or agricultural practices

##### **Producing and implementing processes, solutions and projects**

* Use equipment, tools, techniques, technologies and processes to develop practical skills
* Select food preparation techniques, production skills and/or agricultural practices to make solutions and projects
* Demonstrate safe practices when selecting and using tools, technologies and processes
* Document design processes when producing food and agricultural projects

##### **Testing and evaluating food, tools, practices and technologies**

* Work collaboratively to test, modify and improve food and/or agricultural products
* Evaluate how ingredient selection and preparation techniques enhance the nutritional value of food

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| ****Example(s):****  Nutrition composition analysis applications. |

* Explore agricultural practices to assess the impact of changing conditions, improve the quality of production and reduce waste
* Justify the selection of equipment, tools, technologies and processes when developing food and/or agricultural solutions
* Use factors affecting design to evaluate the quality of food and/or agricultural solutions

### **Materials and production processes**

#### **Outcomes**

A student:

* explains relationships between sustainability, design and production ****TE4-SDP-01****
* describes the practices and processes of designers and producers ****TE4-PDP-01****
* explains how materials, systems and components contribute to solutions ****TE4-MSC-01****
* communicates and evaluates design ideas and solutions ****TE4-DES-01****
* applies processes in the planning, management and production of projects ****TE4-PPM-01****
* selects and safely uses tools, materials, technologies and processes ****TE4-SAF-01****

**Related Life Skills outcomes:** TELS-SDP-01, TELS-SDP-02, TELS-PDP-01, TELS-MSC-01, TELS-DES-01, TELS-PPM-01, TELS-PPM-02, TELS-PPM-03, TELS-SAF-01

#### **Content**

##### **Identifying and defining materials and production processes**

* Identify the characteristics and properties of materials

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| ****Example(s):****  Sustainably sourced, textiles, timber, metal, composites, food, polymers, multimedia, emerging materials. |

* Describe products and systems created by designers, producers and manufacturers
* Outline factors affecting the design of products and solutions

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| ****Example(s):****  Accessibility, aesthetics, durability, ergonomics, ethics, functionality, safety. |

##### **Researching and planning ideas and solutions**

* Investigate products and systems developed by Aboriginal and Torres Strait Islander Peoples

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| ****Example(s):****  Aboriginal Cultural Knowledge protected by Indigenous Cultural and Intellectual Property (ICIP), visual arts and crafts, music, textiles and promotional products. |

* Outline production techniques and materials used by designers, producers and manufacturers
* Describe how the properties of materials and production techniques contribute to the quality of solutions
* Compare sustainable sourcing practices

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| ****Example(s):****  Aboriginal Cultural Sustainability, using environmental, social, and economic best practice, sustainable farming practices. |

* Explain ethical and legal considerations for innovation, design and production processes

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| ****Example(s):****  Artificial intelligence systems (AI), intellectual property (IP), work health and safety (WHS), diversity, inclusion and accessibility. |

* Apply design and creative thinking to assess ideas and quality solutions
* Use a range of sketching and drawing techniques to communicate ideas and solutions

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| ****Example(s):****  Free-hand sketching, pictorial drawing, orthogonal drawing, AS 1100. |

* Communicate the development of design ideas and solutions, using annotations

##### **Producing and implementing processes, solutions and projects**

* Use tools, materials, techniques, technologies and processes to develop practical skills
* Select tools, materials, techniques, technologies and processes to make solutions and projects
* Demonstrate safe practices when selecting and using materials, technologies and processes
* Document design processes when using materials and production technologies

##### **Testing and evaluating tools, materials and technologies**

* Work collaboratively to test, modify and improve the quality of ideas and solutions
* Evaluate ideas and solutions using written, visual, verbal or multimodal communication forms
* Create prototypes, models and samples to test materials and production processes
* Justify the selection and use of a range of tools, materials, techniques and technologies
* Use factors affecting design to evaluate the quality of ideas and solutions

## **Assessment**

The primary role of assessment is to establish where students are in their learning so that teaching can be differentiated and further learning progress can be monitored over time. It provides information that assists teachers to target their teaching at the point of student need. Assessment is most effective when it is an integral part of teaching and learning programs.

Assessment involves:

* establishing where students are in their learning
* ongoing monitoring
* formative and summative tasks
* providing feedback about student progress.

### **Common Grade Scale**

**Stage 1, Stage 2, Stage 3, Stage 4, Stage 5**

The [common grade scale](https://curriculum.nsw.edu.au/assessment-and-reporting/reporting-and-using-grades#common-grade-scale-years-1-to-10) can be used to report student achievement in both primary and junior secondary years in all NSW schools.

### **Assessment of Life Skills outcomes**

**Stage 4**

The syllabus outcomes and content form the basis of learning opportunities for students. Through the [collaborative curriculum planning process](https://educationstandards.nsw.edu.au/wps/portal/nesa/k-10/diversity-in-learning/special-education/collaborative-curriculum-planning), teachers select specific Life Skills outcomes which are based on the needs, strengths, goals, interests and prior learning of each student. Students are required to demonstrate achievement of one or more Life Skills outcomes.

Assessment should provide opportunities for students to demonstrate achievement in relation to the selected outcomes. Assessment can occur in a range of situations or environments such as the school and wider community. Evidence of achievement can be based on:

* [formative](https://curriculum.nsw.edu.au/assessment-and-reporting/formative-assessment) assessment opportunities
* [summative](https://curriculum.nsw.edu.au/assessment-and-reporting/summative-assessment) assessment opportunities.

There is no requirement for formal assessment of Life Skills outcomes. Stage 6 Life Skills courses do not have external examinations or mandatory projects.