

Design and Technologies

Year 7 Syllabus

The syllabus is based on the requirement that all students will study both Technologies subjects from Pre-primary to Year 8.

Year Level Description

Learning in Design and Technologies builds on concepts, skills and processes developed in earlier years, and teachers will revisit, strengthen and extend these as needed.

In Year 7, students have opportunities to learn about technologies in society at least once in the following technologies contexts: Engineering principles and systems; Food and fibre production; Food specialisations; and Materials and technologies specialisations. Students are provided with opportunities to design and produce products, services and environments.

Students have opportunities to select from a range of technologies, materials, components, tools and equipment. They consider the ways characteristics and properties of technologies can be combined to design and produce sustainable solutions. They develop strategies which enable them to consider society and ethics; social, ethical and sustainability factors. Students' use of creativity, innovation and enterprise skills is encouraged to increase independence and collaboration.

Students are given opportunities to respond to feedback from others and evaluate their design processes and solutions. They investigate design and technology solutions and the implications for each on society, locally, regionally and globally. Students develop their techniques for evaluating the advantages and disadvantages of design ideas.

Students have opportunities to engage with a range of technologies, including a variety of graphical representation techniques to communicate ideas. Students generate and clarify ideas through sketching, modelling and perspective drawings.





Students identify the increasingly complex sequences and steps involved in design tasks. They develop plans to manage design tasks, including safe and responsible use of materials and tools to successfully complete design tasks.

Knowledge and understanding




TECHNOLOGIES AND SOCIETY

Processes and production skills

Competing factors, including social, ethical and sustainability considerations, in the development of technologies ([ACTDEK029](#))

-  Literacy
-  Critical and creative thinking
-  Personal and social capability
-  Ethical understanding



Ways in which products, services and environments evolve locally, regionally and globally ([ACTDEK030](#))

-  Critical and creative thinking
-  Personal and social capability
-  Intercultural understanding

TECHNOLOGIES CONTEXTS



Engineering principles and systems

The use of motion, force and energy to manipulate and control electromechanical and mechanical systems ([ACTDEK031](#))

-  Numeracy
-  Critical and creative thinking

Food and fibre production

Production systems for food and fibre or their products, including key features of their design ([ACTDEK032](#))

-  Critical and creative thinking
-  Ethical understanding





Food specialisations

Nutritional value and physical properties of





CREATING SOLUTIONS BY:

Investigating and defining

Define and break down a given task, identifying the purpose (WATPPS39)






-  Literacy
-  Information and Communication
- Technology (ICT) capability
-  Critical and creative thinking
-  Ethical understanding

Consider components/resources to develop solutions, identifying constraints (WATPPS40)

-  Literacy
-  Information and Communication
- Technology (ICT) capability
-  Critical and creative thinking
-  Ethical understanding

Designing

Design, develop, review and communicate design ideas, plans and processes within a given context, using a range of techniques, appropriate technical terms and technology (WATPPS41)

-  Literacy
-  Numeracy
-  Information and Communication
- Technology (ICT) capability
-  Critical and creative thinking
-  Personal and social capability

food determine preparation techniques and presentation ([ACTDEK033](#))

 Critical and creative thinking

Materials and technologies specialisations

Material and technology decisions and processes influence the selection and combination of materials, systems, components, tools and equipment ([ACTDEK034](#))

 Information and Communication

Technology (ICT) capability

 Critical and creative thinking

Follow a plan designed to solve a problem, using a sequence of steps (WATPPS42)


 Literacy

 Numeracy

 Information and Communication

Technology (ICT) capability

 Critical and creative thinking

 Personal and social capability

Producing and implementing

Safely make solutions using a range of components, equipment and techniques (WATPPS43)

 Literacy

 Information and Communication

Technology (ICT) capability

 Critical and creative thinking

 Personal and social capability

Evaluating


Independently apply given contextual criteria to evaluate design processes and solutions (WATPPS44)

 Literacy

 Information and Communication

Technology (ICT) capability

 Critical and creative thinking

 Personal and social capability

 Ethical understanding

Collaborating and managing

Work independently, and collaboratively when required, to plan, develop and communicate ideas and information, using management processes (WATPPS45)

 Literacy

 Numeracy

 Information and Communication

Technology (ICT) capability

 Critical and creative thinking

 Personal and social capability

Digital Technologies

Year 7 Syllabus

The syllabus is based on the requirement that all students will study both Technologies subjects from Pre-primary to Year 8.

Year Level Description

In Year 7, learning in Digital Technologies focuses on further developing understanding and skills in computational thinking, such as decomposing problems and engaging students with a wider range of information systems as they broaden their experiences and involvement in national, regional and global activities.

Students have opportunities to create a range of solutions, such as interactive web applications or simulations.

Students explore the properties of networked systems. They acquire data from a range of digital systems. Students use data to model objects and events. They further develop their understanding of the vital role that data plays in their lives.

Students are provided with further opportunities to develop abstractions, identifying common elements, while decomposing apparently different problems and systems to define

requirements; and recognise that abstractions hide irrelevant details for particular purposes. When defining problems, students identify the key elements of the problems and the factors and constraints at play. They design increasingly complex algorithms that allow data to be manipulated automatically.

Students predict and evaluate their developed and existing solutions, considering time, tasks, data and the safe and sustainable use of information systems.

Students plan and manage individual and team projects with some autonomy. They consider ways of managing the exchange of ideas, tasks and files and feedback. When communicating and collaborating online, students develop an understanding of different social contexts; for example, acknowledging cultural practices and meeting legal obligations.

Knowledge and understanding

DIGITAL SYSTEMS

Different types of networks, including wired, wireless and mobile networks ([ACTDIK023](#))

 Literacy

 Information and Communication

Technology (ICT) capability

 Critical and creative thinking

Hardware components of a network ([ACTDIK023](#))

 Literacy

 Information and Communication

Technology (ICT) capability

REPRESENTATION OF DATA

Digital systems represent text, image and audio data ([ACTDIK024](#))

 Information and Communication

Processes and production skills

COLLECTING, MANAGING AND ANALYSING DATA

Explore how to acquire data from a range of digital sources ([ACTDIP025](#))

 Literacy

 Numeracy

 Information and Communication

Technology (ICT) capability

 Critical and creative thinking

Create information using relevant software, and create data to model objects and/or events ([ACTDIP026](#))

 Literacy


 Numeracy

 Information and Communication

Technology (ICT) capability

 Critical and creative thinking

Technology (ICT) capability

 Critical and creative thinking


DIGITAL IMPLEMENTATION

Design the user experience of a digital system ([ACTDIP028](#))

 Literacy

 Information and Communication

Technology (ICT) capability

 Critical and creative thinking

Create digital solutions that include a user interface where choices can be made ([ACTDIP030](#))

 Numeracy

 Information and Communication

Technology (ICT) capability


 Critical and creative thinking

Create and communicate information collaboratively online, taking into account social contexts ([ACTDIP032](#))

 Literacy

 Information and Communication

Technology (ICT) capability

 Critical and creative thinking

 Personal and social capability

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 Literacy

 Information and Communication

Technology (ICT) capability

 Critical and creative thinking

 Ethical understanding

Consider components/resources to develop solutions, identifying constraints (WATPPS40)

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Technology (ICT) capability

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Technology (ICT) capability

 Critical and creative thinking


 Personal and social capability

Follow a plan designed to solve a problem, using a sequence of steps (WATPPS42)

 Literacy

 Information and Communication

Technology (ICT) capability

 Critical and creative thinking

 Personal and social capability


Producing and implementing

Safely make solutions using a range of components, equipment and techniques (WATPPS43)

 Literacy

 Information and Communication

Technology (ICT) capability

 Critical and creative thinking

 Personal and social capability

Evaluating


Independently apply given contextual criteria to evaluate design processes and solutions (WATPPS44)

 Literacy

 Information and Communication

Technology (ICT) capability

 Critical and creative thinking

 Personal and social capability

 Ethical understanding

Collaborating and managing


Work independently, and collaboratively when required, to plan, develop and communicate ideas and information when using management processes (WATPPS45)


 Literacy

 Numeracy

 Information and Communication

Technology (ICT) capability

 Critical and creative thinking

 Personal and social capability
