



Technology

Essential Learnings by the end of Year 9

Learning and assessment focus

Students explore the role of technology in society from a range of perspectives. They use their imagination and creativity to develop design solutions and make design and production decisions that demonstrate consideration of the context, specifications, constraints and management requirements. They understand how information, materials and systems can be combined in innovative ways in response to real-world situations. They understand the importance of matching characteristics of resources to detailed specifications and standards. They investigate the contributions, past and present, of technological processes and products within local, national and global markets. They recognise that technology has a rich history and has developed into a large number of increasingly overlapping fields that provide career opportunities.

Students use the essential processes of **Ways of working** to develop and demonstrate their **Knowledge and understanding**. When thinking and working technologically, they individually and collaboratively select tools and implement techniques to manipulate and process, and control and manage, information, materials and/or systems components. They make products to detailed specifications and standards. They analyse the role of technology and its impacts and consequences for people, their environments and their communities in local and global contexts. They reflect on their learning and evaluate the suitability of their own and others' products and processes and recommend improvements.

Students select and use a range of tools and technologies, including information communication technologies (ICTs). They routinely demonstrate an autonomous and purposeful use of ICTs to inquire, create and communicate within technology contexts.

Students demonstrate evidence of their learning over time in relation to the following assessable elements:

- knowledge and understanding
- investigating and designing
- producing
- evaluating
- reflecting.

Ways of working

Students are able to:

- investigate and analyse specifications, standards and constraints in the development of design ideas
- consult, negotiate and apply ethical principles and cultural protocols to investigate, design and make products
- generate and evaluate design ideas and communicate research, design options, budget and timelines in design proposals
- select resources, techniques and tools to make products that meet detailed specifications
- plan, manage and refine production procedures for efficiency
- make products to meet detailed specifications by manipulating or processing resources
- identify, apply and justify workplace health and safety practices
- evaluate the suitability of products and processes against criteria and recommend improvements
- reflect on and analyse the impacts of products and processes on people, their communities and environments
- reflect on learning, apply new understandings and justify future applications.

Knowledge and understanding

Technology as a human endeavour

Technology influences and impacts on people, their communities and environments in local and global contexts.

- New products and technologies are designed and developed to meet changing needs and wants of intended audiences, and include artefacts, systems, environments, services and processes
e.g. mobile phones and email meet the need for improved efficiency of communication methods.
- Product design and production decisions are influenced by aspects of appropriateness and by detailed specifications, constraints and standards of production
e.g. globalisation and cultural, social and political factors influence the design and development of products, as in designing canteen menus to meet the requirements of the Smart Choices strategy; accurately machining a product component to match specifications.
- People can influence decisions made about the design, development and use of technology to change the impact on people, their communities and environments at local and global levels
e.g. the design and development of energy-efficient light globes to help reduce greenhouse gases and global warming; recognising the impact that technology (mass production, high-speed sewing), culture (Indigenous perspectives, popular culture) and history (tradition, fashion trends) have had on fashion design.

Information, materials and systems (resources)

Resources originate from different sources, exist in various forms and are manipulated to meet specifications and standards to make products.

- Characteristics of resources are compared, contrasted and selected to meet detailed specifications and predetermined standards of production to best suit the user
e.g. materials can be compared to determine those most appropriate to the task, such as selecting from a variety of timbers taking account of size, strength, finish and durability; choosing from natural resources to produce a product.
- Techniques and tools are selected, controlled and managed to manipulate or process resources to meet detailed specifications and predetermined standards of production
e.g. an outdoor shelter can be designed accurately using CAD software.