



Syllabus and curriculum comparison

7-10

Design and innovation NSW Syllabus	Australian Curriculum
7-10	Years 9 and 10
DIT5-SAF-01 applies risk management and safe work practices through design and production	AC9TDI10K01 investigate how hardware and software manage, control and secure access to data in networked digital systems
DIT5-COM-01 communicates ideas, concepts, processes and solutions for design and production	AC9TDI10K02 represent documents online as content (text), structure (markup) and presentation (styling) and explain why such representations are important
DIT5-DEP-01 applies technical and practical skills for design and production	AC9TDI10K03 investigate simple data compression techniques
DIT5-MAT-01 selects and justifies the use of materials based on their properties and suitability for purpose	AC9TDI10P01 develop techniques to acquire, store and validate data from a range of sources using software, including spreadsheets and databases
DIT5-USE-01 selects and justifies the use of materials, tools, equipment and processes to make products	AC9TDI10P02 analyse and visualise data interactively using a range of software, including spreadsheets and databases, to draw conclusions and make predictions by identifying trends and outliers
DIT5-WOR-01 evaluates the responsibilities of designers and factors affecting their work	AC9TDI10P03 model and query entities and their relationships using structured data
DIT5-USR-01 assesses the needs of end users to support innovative design solutions	AC9TDI10P04 define and decompose real world problems with design criteria and by interviewing stakeholders to create user stories
DIT5-EVL-01 develops and evaluates innovative design solutions using quality principles and design processes	AC9TDI10P05 design algorithms involving logical operators and represent them as flowcharts and pseudocode
DIT5-IVT-01 explains the influence of current and emerging technologies on the practice of designers	AC9TDI10P06 validate algorithms and programs by comparing their output against a range of test cases
Content Design and innovation <ul style="list-style-type: none"> Describe the purposes of design Investigate disciplines of design including product design, architecture, interior design, graphic design, fashion design and the nature of their own design solutions Apply protocols for designing with respect to Aboriginal and/or Torres Strait Islander Communities, practitioners and/or Knowledges including Indigenous Cultural and Intellectual Property (ICIP) Investigate ethical and legal considerations of intellectual property in design and impact on own work including copyright, patents, trademarks, registered designs and design rights Describe how industrial practices and workplace legislation have an impact on design and production Analyse the importance of sustainability in design Examine the sustainable use of resources in Aboriginal and Torres Strait Islander Peoples' design solutions 	AC9TDI10P07 design and prototype the user experience of a digital system
	AC9TDI10P08 generate, modify, communicate and critically evaluate alternative designs
	AC9TDI10P09 implement, modify and debug modular programs, applying selected algorithms and data structures, including in an object oriented programming language
	AC9TDI10P10 evaluate existing and student solutions against the design criteria, user stories, possible future impact and opportunities for enterprise



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<p>Designers and their practices</p> <ul style="list-style-type: none"> • Apply ethical perspectives when designing and producing including sustainability, safety, accessibility, inclusivity, cultural sensitivity, intellectual property (IP) and Indigenous Cultural and Intellectual Property (ICIP) • Analyse factors affecting design and consider their impact on design solutions including function, aesthetics, cultural considerations, accessibility, durability, safety, ergonomics, quality, cost, location and trends • Compare past and contemporary designers and the impact of their work on society and the environment • Investigate and apply design processes used by designers • Investigate and discuss interdisciplinary and collaborative practices and their importance when creating innovative and effective design solutions • Analyse cultural, environmental, social, economic and security responsibilities of a designer to inform their own designs and development of solutions • Investigate culturally specific features of work by Aboriginal and/or Torres Strait Islander designers across a range of design disciplines • Analyse the impact of innovation, enterprise and emerging technologies on design solutions for global preferred futures • Examine career opportunities across a range of design disciplines 	<p>AC9TDI10P11 select and use emerging digital tools and advanced features to create and communicate interactive content for a diverse audience</p>
<p>Design innovation, inclusion and entrepreneurship</p> <ul style="list-style-type: none"> • Discuss the concept of innovation and explain its importance in the fields of design and technology • Describe and compare types of innovation in real-world contexts including incremental, disruptive and radical innovation • Investigate the innovative practices of designers and their design solutions to inform the generation of ideas for own projects • Investigate how identified examples of innovation impact on society, resource management and environmental conservation • Describe innovative design solutions that improve accessibility, participation and inclusivity for diverse populations • Construct design briefs that consider universal design principles or safety by design principles to improve accessibility and safety • Apply innovative design processes and approaches to identify opportunities for innovation in own projects • Apply and evaluate innovative design methods and technologies to inform design solutions • Use collaborative practices in design and production including teamwork, communication and shared decision-making to develop solutions • Identify entrepreneurial skills including business planning, market analysis, pitching, collaborating with industry and financial planning • Investigate the technical and enterprise skills required in design industries • Participate in entrepreneurial activities including developing business plans and pitching ideas and concepts that support innovation in design projects • Create written texts to explain the relationship between entrepreneurship and innovation 	<p>AC9TDI10P12 use simple project management tools to plan and manage individual and collaborative agile projects, accounting for risks and responsibilities</p> <p>AC9TDI10P13 develop cyber security threat models, and explore a software, user or software supply chain vulnerability</p> <p>AC9TDI10P14 apply the Australian Privacy Principles to critique and manage the digital footprint that existing systems and student solutions collect</p>



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Investigation

- Investigate materials, technologies and practices used by Aboriginal and Torres Strait Islander Peoples to inform customary and contemporary design solutions
- Apply project management strategies to manage time, finance and resources in design and production processes
- Use strategies to safely manage data and information
- Identify and evaluate needs and opportunities for design solutions and innovation
- Construct design briefs in response to identified problems, needs or opportunities
- Consider factors affecting design when analysing design briefs including function, aesthetics, sustainability, cultural considerations, accessibility, durability, safety, ergonomics, quality, cost and location
- Conduct research and use findings to inform design decisions
- Investigate sustainable materials for use in design projects and related strategies including circular economy, design for disassembly, life-cycle assessment, reducing, reusing, repairing, recycling, lightweighting and design for durability
- Evaluate existing design solutions to inspire and inform idea generation
- Develop specifications for design solutions to guide idea generation and provide criteria for evaluation

Idea generation and development

- Develop and use a range of graphical communication techniques to formulate and refine ideas
- Annotate design and production folios to record design decisions
- Generate a range of innovative design ideas using sketching and creative thinking strategies
- Apply sustainable design strategies to minimise negative effects of design solutions
- Identify the most appropriate idea to develop by evaluating ideas against specifications
- Critique ideas to identify potential improvements
- Use physical or digital modelling to explore functional elements and form
- Outline regulations, standards and codes of practice when designing and producing
- Refine selected design ideas through iterative processes by sketching, modelling and simulating

Production and realisation

- Construct and test physical prototypes, digital prototypes, working models, simulations or mock-ups to refine design ideas
- Justify the use of materials by considering their properties and characteristics to produce sustainable design solutions
- Select and use tools, workshop equipment and resources to produce design solutions
- Identify and implement safe work practices including the use of tools, workshop equipment, materials and digital technologies

Evaluation

- Apply ongoing evaluation through the stages of designing and modify plans when needed with consideration of design specifications
- Apply suitability and end-user testing to evaluate and justify the effectiveness of design solutions
- Evaluate the effectiveness of design solutions against specifications and identified criteria
- Evaluate the effectiveness of the design process used
- Create written texts to document, reflect on and evaluate design processes



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Understanding technology

- Investigate Aboriginal and Torres Strait Islander Peoples' technologies to inform design innovation
- Investigate historic, contemporary and emerging technologies in design and production to evaluate their impact on industry, society and the environment
- Explain how assistive and adaptive technologies support participation and inclusion for individuals with diverse needs
- Create written texts to critique technologies and identify their impact on society and the environment
- Evaluate the impact of technologies that promote sustainability for preferred futures

Applying technology

- Safely apply a range of tools, equipment and technologies including in online environments to develop innovative ideas and solutions
- Investigate and evaluate the use of digital control technologies to create functioning design solutions
- Use computer-aided design (CAD) applications to conceptualise, visualise and refine ideas and solutions
- Use computer-aided manufacturing (CAM) technologies to create prototypes, parts, components or final products
- Select and apply digital presentation and communication technologies in the development of ideas and solutions
- Critique and ethically use Artificial Intelligence (AI) tools to support design activities and the development of design solutions
- Select and apply digital collaborative tools for group activities in the development of ideas and solutions