Design Thinking Scope & Sequence K-8

DESIGN AND TECHNOLOGIES CURRICULUM CONTENT

"During each stage students will have the opportunity to create designed solutions at least once in three technologies contexts: engineering principles and systems, food and fibre production and food specialisations; and materials and technologies specialisations. Students will design and produce at least one product, one service and one environment during each stage."

AUSTRALIAN CURRICULUM

Students will create designed solutions by:	**Years K - 2** Students will have opportunities to participate in the following:	**Years 3 - 4** Students will have opportunities to participate in the following:	**Years 5 - 6** Students will have opportunities to participate in the following:	**Years 7 - 8** Students will have opportunities to participate in the following:
FACT-FINDING ***Explore and investigate technologies and materials*** ***Collect and interpret data*** ***Identify design needs and opportunities***	▸ Explore how technologies use forces to create movement in products (ACTDEK002) ▸ Explore how plants and animals are grown for food, clothing and shelter and how food is selected and prepared for healthy eating (ACTDEK003) ▸ Identify how people design and produce familiar products, services and environments and consider sustainability to meet personal and local community needs (ACTDEK001) ▸ Explore the characteristics and properties of materials and components that are used to produce designed solutions (ACTDEK004) ▸ Explore needs or opportunities for designing. (ACTDEP005)	▸ Investigate how forces and the properties of materials affect the behaviour of a product or system (ACTDEK011) ▸ Investigate food and fibre production and food technologies used in modern and traditional societies (ACTDEK012) ▸ Explore materials, components, tools and techniques needed to produce designed solutions (ACTDEP014) ▸ Investigate the suitability of materials, systems, components, tools and equipment for a range of purposes (ACTDEK013) ▸ Critique needs or opportunities for designing (ACTDEP014)	▸ Investigate how electrical energy can control movement, sound or light in a designed product or system (ACTDEK020) ▸ Investigate how and why food and fibre are produced in managed environments and prepared to enable people to grow and be healthy (ACTDEK021) ▸ Investigate how people in design and technologies occupations address competing considerations, including sustainability in the design of products, services, and environments for current and future use (ACTDEK019) ▸ Investigate characteristics and properties of a range of materials, systems, components, tools and equipment and evaluate the impact of their use (ACTDEK023) ▸ Critique needs or opportunities for designing, (ACTDEP024)	▸ Analyse how motion, force and energy are used to manipulate and control electromechanical systems when designing simple, engineered solutions (ACTDEK031) ▸ Analyse how food and fibre are produced when designing managed environments and how these can become more sustainable (ACTDEK032) ▸ Analyse how characteristics and properties of food determine preparation techniques and presentation when designing solutions for healthy eating (ACTDEK033) ▸ Investigate and analyse a range of materials, components, tools, equipment and processes needed to develop future design ideas (ACTDEP035) ▸ Critique needs or opportunities for designing (ACTDEP035)
GENERATING IDEAS ***Imagine, communicate and record design ideas***	▸ Visualise, generate and record design ideas through describing and drawing (ACTDEP006)	▸ Generate and communicate design ideas using graphical representation techniques (ACTDEP015)	▸ Generate and communicate design ideas for audiences using appropriate technical terms and graphical representation techniques (ACTDEP025)	▸ Generate and communicate design ideas for various audiences using appropriate technical terms including graphical representation techniques (ACTDEP036)
JUDGING IDEAS ***Analyse and evaluate design ideas***	▸ Use personal preferences to evaluate design ideas, including their care for environment (ACTDEP008)	▸ Evaluate design ideas based on criteria developed with guidance and including care for the environment (ACTDEP017)	▸ Negotiate criteria (that includes sustainability) to evaluate design ideas (ACTDEP027)	▸ Independently develop criteria to evaluate design ideas and their sustainability (ACTDEP038)
PLANNING ***Design courses of action*** ***Document project plans*** ***Monitor projects***	▸ Sequence steps for making designed solutions and working collaboratively (ACTDEP009) ▸ Explore and select the technologies needed to realise designed solutions (ACTDEP005)	▸ Plan a sequence of production steps when making designed solutions individually and collaboratively (ACTDEP018) ▸ Develop and communicate design decision using appropriate technical terms and graphical representation techniques (ACTDEP015) ▸ Select materials, components, tools and equipment and the techniques needed to produce designed solutions (ACTDEP014)	▸ Develop project plans that include consideration of resources when making designed solutions individually and collaboratively (ACTDEP028) ▸ Develop and communicate processes using appropriate technical terms and graphical representation techniques (ACTDEP025) ▸ Investigate materials, components, tools and equipment for intended designed solutions (ACTDEP024) ▸ Select appropriate materials, components, tools, equipment and techniques to make designed solutions (ACTDEP026)	▸ Use project management processes when working individually and collaboratively to coordinate production of designed solutions (ACTDEP039) ▸ Communicate plans and processes using appropriate technical terms and technologies including graphical representation techniques (ACTDEP036) ▸ Analyse ways to produce designed solutions through selecting and combining characteristics and properties of materials, systems, components, tools and equipment (ACTDEK034) ▸ Select and justify choices of materials, components, tools, equipment and techniques to effectively and safely make designed solutions (ACTDEP037)
PRODUCING ***Test and implement designed solutions***	▸ Use materials, components, tools, equipment and techniques to safely make designed solutions (ACTDEP007) ▸ Develop design ideas through modelling (ACTDEP006)	▸ Select and use materials, components, tools, equipment and techniques and use safe work practices to make designed solutions (ACTDEP016)	▸ Apply safe procedures to make designed solutions (ACTDEP026) ▸ Develop design ideas for audiences (ACTDEP025)	▸ Develop and test designs for various audiences using appropriate technical terms and technologies including graphical representation techniques (ACTDEP036)
REFLECTING ***Reflect on design processes*** ***Evaluate designed solutions***	▸ Use personal preferences to evaluate the success of design processes and solutions including their care for environment (ACTDEP008)	▸ Evaluate processes and solutions based on criteria for success developed with guidance and including care for the environment (ACTDEP017)	▸ Negotiate criteria for success that include sustainability to evaluate design ideas, processes and solutions (ACTDEP027)	▸ Independently develop criteria for success to evaluate design processes and solutions and their sustainability (ACTDEP038)

Knowledge & Understanding

Processes & Production Skills

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