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|  | Prep Year to Year 2 band plan — Technologies  Overview for planning with the Australian Curriculum: Design and Technologies |

This band plan has been developed in consultation with the Curriculum into the Classroom (C2C) project team.

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| School name: | | | | | | | | |
| Australian Curriculum: Design and Technologies | | | Band: Prep Year to Year 2 | | | | | |
| Identify curriculum[[1]](#footnote-1) | **Technologies learning area** | The Technologies curriculum provides students with opportunities to consider how solutions that are created now will be used in the future. Students will identify the possible benefits and risks of creating solutions. They will use critical and creative thinking to weigh up possible short-term and long-term impacts.  As students’ progress through the Technologies curriculum, they will begin to identify possible and probable futures, and their preferences for the future. They develop solutions to meet needs considering impacts on liveability, economic prosperity and environmental sustainability. Students will learn to recognise that views about the priority of the benefits and risks will vary and that preferred futures are contested.  The Australian Curriculum: Technologies describes two distinct but related subjects:   * Design and Technologies, in which students use design thinking and technologies to generate and produce designed solutions for authentic needs and opportunities * Digital Technologies, in which students use computational thinking and information systems to define, design and implement digital solutions.   The Australian Curriculum: Technologies will ensure that all students benefit from learning about and working with traditional, contemporary and emerging technologies that shape the world in which we live. This learning area encourages students to apply their knowledge and practical skills and processes when using technologies and other resources to create innovative solutions, independently and collaboratively, that meet current and future needs.  The practical nature of the Technologies learning area engages students in critical and creative thinking, including understanding interrelationships in systems when solving complex problems. A systematic approach to experimentation, problem-solving, prototyping and evaluation instils in students the value of planning and reviewing processes to realise ideas. | | | | | | |
| **Course organisation** | The Australian Curriculum: Design and Technologies actively engages students in creating quality designed solutions for identified needs and opportunities across a range of technologies contexts. Students consider the economic, environmental and social impacts of technological change and how the choice and use of technologies contributes to a sustainable future.  By the end of each band, students will have had the opportunity to create different types of designed solutions that address the technologies contexts: Engineering principles and systems, Food and fibre production, Food specialisations and Materials and technologies specialisations. For breadth of study, the curriculum has been developed to enable students to complete at least one product, one service and one environment within each band.  In the Australian Curriculum: Design and Technologies the two strands — Knowledge and Understanding, and Processes and Production Skills — are interrelated and inform and support each other. Students work independently and collaboratively on projects as they critique, explore and investigate needs and opportunities; generate, develop and evaluate ideas; and plan, produce and evaluate designed solutions. They use criteria for success that are predetermined, negotiated with the class or developed by students.  The Design and Technologies Processes and Production Skills strand is based on the major aspects of design thinking, design processes and production processes. The content descriptions in this strand reflect a design process and would typically be addressed through a design brief. The Design and Technologies Processes and Production Skills strand focuses on creating designed solutions by:   * investigating * generating * producing * evaluating * collaborating and managing.   The band plan for Design and Technologies is organised to:   * provide flexibility when making decisions about how the subject will be implemented, based on the local context and needs of students in schools * align with the Australia Curriculum: Design and Technologies, which is organised in two-year bands * provide a course structure and content that includes a sequence of teaching and learning and identified opportunities for assessment and feedback, developed using the Australian Curriculum content descriptions and achievement standards.   When developing teaching and learning programs, teachers should consider opportunities to:   * combine aspects of the strands within a subject in different ways and to integrate content from each strand as it may be possible to address multiple technologies contexts in a unit * provide ongoing practice and consolidation of previously introduced knowledge and skills; while content descriptions do not repeat key skills across the bands, many aspects of the Technologies curriculum are recursive * provide students with learning experiences that meet their needs and interests and are relevant, rigorous and meaningful and allow for different rates of development, in particular for younger students and for those who need extra support * apply design and systems thinking and design processes to investigate ideas, generate and refine ideas, plan, produce and evaluate designed solutions | | | | | | |
|  |  | * use a design brief when developing a unit of work; a design brief is a concise statement clarifying the project task and defining the need or opportunity to be resolved after some analysis, investigation and research; it usually identifies the users, criteria for success, constraints, available resources, timeframe for the project and may include possible consequences and impacts.  In the early years of learning, design briefs may be fairly prescriptive and teacher directed * enable students to create different types of designed solutions that address the technologies contexts and complete at least one product, one service and one environment within each band; the combination of technologies contexts and types of designed solutions is a school decision * integrate the learning between the Technologies subjects and with other learning areas.   The band plan course organisation allows schools to implement the Australian Curriculum: Design and Technologies:   * in conjunction with other learning areas/subjects * in a term * in a semester * in only one year of a band.   Safety  All practical work must be organised with student safety in mind. Identifying and managing risk in Technologies learning addresses the safe use of technologies, as well as risks that can impact on project timelines. It covers all necessary aspects of health, safety and injury prevention and, in any technologies context, the use of potentially dangerous materials, tools and equipment. It includes ergonomics, safety including cyber safety, data security, and ethical and legal considerations when communicating and collaborating online. The current safety requirements are clearly explained at the Queensland government, Department of Education, Training and Employment website: [http://education.qld.gov.au/health/safety](http://education.qld.gov.au/health/safety/). Schools must ensure that their practices meet current guidelines.  Animal ethics  Any teaching activities that involve caring, using, or interacting with animals must comply with the Australian code of practice for the care and use of animals for scientific purposes in addition to relevant state or territory guidelines. *The Animal Care and Protection Act 2001* and the accompanying Animal Care and Protection Regulation 2002 govern the treatment and use of all animals in Queensland (see [www.legislation.qld.gov.au](http://www.legislation.qld.gov.au)). The Department of Agriculture, Fisheries and Forestry Queensland (DAFF), through Biosecurity Queensland, is responsible for enforcement of the legislation. | | | | | | |
| **Phase curriculum focus** | Curriculum focus: Prep Year to Year 2  Students bring to school diverse backgrounds and a range of experiences with technologies. The Technologies curriculum builds on these as rich resources for further learning in each of the Technologies subjects.  In Foundation to Year 2, the Technologies curriculum builds on the *Early Years Learning Framework* and its key learning outcomes: children have a strong sense of identity; children are connected with, and contribute to, their world; children have a strong sense of wellbeing; children are confident and involved learners; and children are effective communicators.  In the early years students are curious about their world and are interested in exploring it. In Technologies, students have opportunities to learn through purposeful and directed play to develop attitudes of care about the places and resources they use. Through these processes they identify relationships between imagined and virtual worlds and the real world, between people and products, and between resources and environments (systems thinking). They explore materials, tools and equipment and use drawing and modelling to communicate their design ideas. Students learn about and experience connections between technologies and the designed world (design thinking). They begin to learn the importance of preparing precise instructions when solving problems using digital systems (computational thinking), creating ideas and information and sharing them online with known people.  In Design and Technologies and Digital Technologies, children create imaginary situations in which they change the meaning of objects and actions as they invent new ideas and engage in futures thinking (for them). They also explore real-world concepts, rules and events as they roleplay what is familiar and of interest to them. | | | | | | |
| **Band description** | Learning in Design and Technologies builds on concepts, skills and processes developed in the Early Years Learning Framework, revisiting, strengthening and extending these as needed.  By the end of Year 2 students will have had the opportunity to create designed solutions at least once in each of the following technologies contexts: Engineering principles and systems; Food and fibre production and Food specialisations; and Materials and technologies specialisations. Students should have opportunities to experience designing and producing products, services and environments. This may occur through integrated learning.  In Foundation to Year 2 students explore and investigate technologies — materials, systems, components, tools and equipment — including their purpose and how they meet personal and social needs within local settings. Students develop an understanding of how society and environmental sustainability factors influence design and technologies decisions. Students evaluate designed solutions using questions such as ‘How does it work?’, ‘What purpose does it meet?’, ‘Who will use it?’, ‘What do I like about it?’ or ‘How can it be improved?’ They begin to consider the impact of their decisions and of technologies on others and the environment including in relation to preferred futures. They reflect on their participation in a design process. This involves students developing new perspectives, and engaging in different forms of evaluating and critiquing products, services and environments based on personal preferences.  Using a range of technologies including a variety of graphical representation techniques to communicate, students draw, model and explain design ideas; label drawings; draw objects as two-dimensional images from different views; draw products and simple environments and verbalise design ideas.  They plan (with teacher support) simple steps and follow directions to complete their own or group design ideas or projects, and manage their own role within team projects. Students are aware of others around them and the need to work safely and collaboratively when making designed solutions. | | | | | | |
| **Achievement standard** | By the end of Year 2, students [describe](http://v7-5.australiancurriculum.edu.au/glossary/popup?a=F10AS&t=Describe) the purpose of familiar products, services and environments and how they meet the needs of users and affect others and environments. They [identify](http://v7-5.australiancurriculum.edu.au/glossary/popup?a=F10AS&t=Identify) the features and uses of some technologies for each of the prescribed technologies contexts.  With guidance students create designed solutions for each of the prescribed technologies contexts. They [describe](http://v7-5.australiancurriculum.edu.au/glossary/popup?a=F10AS&t=Describe) given needs or opportunities. Students create and [evaluate](http://v7-5.australiancurriculum.edu.au/glossary/popup?a=F10AS&t=Evaluate) their ideas and designed solutions based on personal preferences. They communicate [design](http://v7-5.australiancurriculum.edu.au/glossary/popup?a=F10AS&t=Design) ideas for their designed products, services and environments using modelling and simple drawings. Following sequenced steps students [demonstrate](http://v7-5.australiancurriculum.edu.au/glossary/popup?a=F10AS&t=Demonstrate) safe use of tools and equipment when producing designed solutions. | | | | | | |
| Teaching and learning | **Unit overview**  The Australian Curriculum assumes that all students will study the two Technologies subjects from Foundation to the end of Year 8.  Schools decide which units of study per subject to complete, and how and when. This band plan provides three potential units. | Unit 1 — Engineering principles and systems: Spin it! | | Unit 2 — Food and fibre production including Food specialisations: Grow, grow, grow | Unit 3 — Materials and technologies specialisations: It’s showtime! | | | |
| Children explore how technologies use forces to create movement in products and design and make a spinning toy for that is fun and easy for a small child or friend to use.  They apply the following processes and production skills:   * investigating spinning toys from around the world, and analysing how they are made and how they work * generating and refining design ideas, communicated by simple drawings * producing a functional product that appeals to another small child or friend * evaluating their design and production processes * collaborating and managing by working with others and by sequencing the steps for the project.   This unit could complement the concepts taught in the *Year 2 plan: Science exemplar* unit *— Toy factory* by designing a toy that moves, using a variety of sustainable materials. See: [www.qcaa.qld.edu.au/p-10/aciq/p-10-science/year-2-science](https://www.qcaa.qld.edu.au/p-10/aciq/p-10-science/year-2-science) > Planning > *Year 2 plan: Science exemplar*. | | Children explore how plants and animals are grown for food, clothing and shelter and how food is selected and prepared for healthy eating and design solutions for a farm to enable successful food and fibre production and make a food from garden produce.  They apply the following processes and production skills:   * investigating how food and fibre are grown to meet human needs * generating and refining design ideas for a functional growing environment * producing a simple drawing that represents the design * evaluating their design and presentation processes * collaborating and managing by working with others and by following sequenced steps for the project.   This unit could complement the concepts taught in the *Year 2 plan: Science exemplar* unit *— Good to grow* by understanding about caring for their environment and living things. See: [www.qcaa.qld.edu.au/p-10/aciq/p-10-science/year-2-science](https://www.qcaa.qld.edu.au/p-10/aciq/p-10-science/year-2-science) > Planning > *Year 2 plan: Science exemplar*. | Children explore the characteristics and properties of materials and components that are used to produce designed solutions and design and make a puppet with moving parts to use in a puppet show.  They apply the following processes and production skills:   * investigating materials, technologies for sharing and joining, and how designs meet people’s needs * generating and refining design ideas * producing a puppet that meets the design brief * evaluating their design and production processes * collaborating and managing by working with others; following sequenced steps and sequencing the steps for the project.   This unit could complement the concepts taught in the *Year 1 plan: English unit — Word play* in the English exemplar by reading and viewing poetry, rhyming verse and dramatic performances and engaging with structure and language to create characters for their puppet. See: [www.qcaa.qld.edu.au/p-10/aciq/p-10-english/year-1-english](http://www.qcaa.qld.edu.au/p-10/aciq/p-10-english/year-1-english) > Planning > *Year 1 plan: English exemplar*. | | | |
| Content descriptions | Knowledge and Understanding | | | | Unit 1 | Unit 2 | Unit 3 |
| Identify how people design and produce familiar products, services and environments and consider sustainability to meet personal and local community needs [(ACTDEK001)](http://v7-5.australiancurriculum.edu.au/curriculum/contentdescription/ACTDEK001) | | | | ✓ | ✓ | ✓ |
| Explore how [technologies](http://v7-5.australiancurriculum.edu.au/glossary/popup?a=T&t=Technologies) use forces to create movement in products [(ACTDEK002)](http://v7-5.australiancurriculum.edu.au/curriculum/contentdescription/ACTDEK002) | | | | ✓ |  |  |
| Explore how plants and animals are grown for food, clothing and shelter and how food is selected and prepared for [healthy eating](http://v7-5.australiancurriculum.edu.au/glossary/popup?a=T&t=Healthy+eating) [(ACTDEK003)](http://v7-5.australiancurriculum.edu.au/curriculum/contentdescription/ACTDEK003) | | | |  | ✓ |  |
| Explore the [characteristics](http://v7-5.australiancurriculum.edu.au/glossary/popup?a=T&t=Characteristics) and [properties](http://v7-5.australiancurriculum.edu.au/glossary/popup?a=T&t=Properties) of [materials](http://v7-5.australiancurriculum.edu.au/glossary/popup?a=T&t=Materials) and [components](http://v7-5.australiancurriculum.edu.au/glossary/popup?a=T&t=Components) that are used to produce [designed solutions](http://v7-5.australiancurriculum.edu.au/glossary/popup?a=T&t=Designed+solutions) [(ACTDEK004)](http://v7-5.australiancurriculum.edu.au/curriculum/contentdescription/ACTDEK004) | | | |  |  | ✓ |
| Processes and Production Skills | | | | Unit 1 | Unit 2 | Unit 3 |
| Explore needs or opportunities for designing, and the [technologies](http://v7-5.australiancurriculum.edu.au/glossary/popup?a=T&t=Technologies) needed to realise [designed solutions](http://v7-5.australiancurriculum.edu.au/glossary/popup?a=T&t=Designed+solutions) [(ACTDEP005)](http://v7-5.australiancurriculum.edu.au/curriculum/contentdescription/ACTDEP005) | | | | ✓ | ✓ | ✓ |
| Visualise, generate, develop and communicate design ideas through describing, drawing and modelling [(ACTDEP006)](http://v7-5.australiancurriculum.edu.au/curriculum/contentdescription/ACTDEP006) | | | | ✓ | ✓ | ✓ |
| Use [materials](http://v7-5.australiancurriculum.edu.au/glossary/popup?a=T&t=Materials), [components](http://v7-5.australiancurriculum.edu.au/glossary/popup?a=T&t=Components), [tools](http://v7-5.australiancurriculum.edu.au/glossary/popup?a=T&t=Tools), [equipment](http://v7-5.australiancurriculum.edu.au/glossary/popup?a=T&t=Equipment) and techniques to safely make [designed solutions](http://v7-5.australiancurriculum.edu.au/glossary/popup?a=T&t=Designed+solutions) [(ACTDEP007)](http://v7-5.australiancurriculum.edu.au/curriculum/contentdescription/ACTDEP007) | | | | ✓ | ✓ | ✓ |
| Use personal preferences to evaluate the success of design ideas, processes and solutions including their care for [environment](http://v7-5.australiancurriculum.edu.au/glossary/popup?a=T&t=Environment) [(ACTDEP008)](http://v7-5.australiancurriculum.edu.au/curriculum/contentdescription/ACTDEP008) | | | | ✓ | ✓ | ✓ |
| Sequence steps for making [designed solutions](http://v7-5.australiancurriculum.edu.au/glossary/popup?a=T&t=Designed+solutions) and working collaboratively [(ACTDEP009)](http://v7-5.australiancurriculum.edu.au/curriculum/contentdescription/ACTDEP009) | | | | ✓ | ✓ | ✓ |
| **General capabilities** | Literacy  Numeracy  ICT capability  Critical and creative thinking   Personal and social capability  Ethical understanding | | | | | | |
| **Cross-curriculum capabilities** | Description: Description: cc_sust Sustainability | | | | | | |
| Develop assessment | **Assessment**  The *Prep to Year 2 Technologies: Australian Curriculum in Queensland — assessment and reporting advice and guidelines* brings together advice about assessment, making judgments and reporting in a single document:[www.qcaa.qld.edu.au/p-10/aciq/p-10-technologies/prep-year-technologies](https://www.qcaa.qld.edu.au/p-10/aciq/p-10-technologies/prep-year-technologies) > *Prep to Year 2 Technologies: ACiQ*. | In Design and Technologies students are actively engaged in the processes of creating designed solutions for personal, domestic, commercial and global settings for sustainable and preferred futures. In both teaching and learning and assessment students undertake projects.  A project is a set of activities undertaken by students to address specified content, involving understanding the nature of a problem, situation or need; creating, designing and producing a solution to the project task; and documenting the process. Project work has a benefit, purpose and use; a user or audience who can provide feedback on the success of the solution; limitations to work within; and a real-world technologies context influenced by social, ethical and environmental issues. Students work independently and collaboratively on projects as they critique, explore and investigate needs and opportunities; generate, develop and evaluate ideas; and plan, produce and evaluate designed solutions. They use criteria for success that are predetermined, negotiated with the class or developed by students.  The assessment for each unit provides evidence of student learning and provides opportunities for teachers to make judgments about whether students have met the Australian Curriculum: Design and Technologies Prep Year to Year 2 achievement standard. Students should contribute to an individual assessment folio that provides evidence of their learning and represents their achievements. The folio should include a range and balance of assessments for teachers to make valid judgments about whether the student has met the achievement standard.  It will gather evidence of children’s ability to: | | | | | | |
| Unit 1 — Engineering principles and systems: Spin it! | | Unit 2 — Food and fibre production including Food specialisation: Grow, grow, grow | Unit 3 — Materials and technologies specialisations: It’s showtime! | | | |
| Design and make a spinning toy for a small child or friend by:   * investigating and describing the purpose and functioning of familiar products that use forces and movement * generating design ideas for toys and communicating them in simple drawings * safely using tools and materials to make a functional product * evaluating their ideas and solutions. | | Design solutions to problems on a farm and make a food from garden produce by:   * investigating and describing how food and fibre are grown and used * generating design ideas for a farm environment and communicating them in simple drawings * safely using tools and materials to make a healthy snack * evaluating their ideas and solutions. | Design a puppet with moving parts by:   * investigating and describing the properties of materials * generating design ideas for a puppet with moving parts and communicating them with drawings * safely using tools and materials to make a functional product * evaluating their ideas and solutions. | | | |
| Make judgments and use feedback | **Consistency of teacher judgments** | Identify opportunities to moderate samples of student work at a school or cluster level to reach consensus and consistency. | | | | | | |

1. Source: Australian Curriculum, Assessment and Reporting Authority (ACARA), *Australian Curriculum: Technologies*: [www.australiancurriculum.edu.au/technologies/rationale](http://www.australiancurriculum.edu.au/technologies/rationale) and *Australian Curriculum: Digital Technologies*: [www.australiancurriculum.edu.au  
   /technologies/design-and-technologies/curriculum/f-10?layout=1](http://www.australiancurriculum.edu.au/technologies/design-and-technologies/curriculum/f-10?layout=1). [↑](#footnote-ref-1)