Technologies – Design and Technologies scope and sequence: Foundation to Level 6

| **Foundation to Level 2** | | **Levels 3 and 4** | | | **Levels 5 and 6** | |
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| **Achievement standard** |  | |  |  | |  |
| By the end of Level 2, students identify and describe the purpose of familiar products, services and environments. For each of the 4 Technologies Contexts sub-strands, they identify the features and uses of technologies, and create designed solutions. Students explore and select design ideas based on their personal preferences, and communicate these using simple models and drawings. Students follow sequenced steps to use tools and materials to safely produce designed solutions. | | By the end of Level 4, students explain how people design products, services and environments to address needs or opportunities that consider sustainability. For each of the 4 Technologies Contexts sub-strands, they describe the features and uses of technologies, and create designed solutions. Students describe needs or opportunities for designing, and they produce, document and select design ideas against design criteria. They communicate design ideas, using models and drawings as well as annotations and symbols, and they test materials and processes needed to create designed solutions. Students plan and sequence steps, and use technologies and techniques to safely produce designed solutions. | | | By the end of Level 6, students explain how people address ethical considerations when designing products, services and environments to meet the needs or opportunities of communities. For each of the 4 Technologies Contexts sub-strands, they explain how the features of technologies impact on design decisions, and work collaboratively and in teams to create designed solutions to address identified needs or opportunities. Students work collaboratively to negotiate and develop design criteria that include worldviews or sustainability considerations. They select and explain design ideas, and communicate these design ideas to an audience using technical terms and graphical representation techniques. Students develop project plans, including production processes, and follow the project plans to select technologies and techniques to safely produce designed solutions. | |
| Content descriptions | | | | | | |
| Strand: Technologies and Society | | | | | | |
| *Students learn about:* | | | | | | |
| how familiar products, services and environments are designed and produced by people to meet personal or local community needs and sustainability  VC2TDE2S01 | | the role of people in design and technologies occupations and factors including sustainability that impact on the design of solutions to meet community needs  VC2TDE4S01 | | | how people in design and technologies occupations consider competing ethical factors including sustainability in the design of products, services and environments  VC2TDE6S01 | |
| Strand: Technologies Contexts | | | | | | |
| Sub-strand: Engineering principles and systems | | | | | | |
| *Students learn to:* | | | | | | |
| explore how technologies affect movement in products and systems  VC2TDE2C01 | | describe how forces affect function in a product or system  VC2TDE4C01 | | | explain how electrical energy can be transformed into movement, sound or light in a product or system  VC2TDE6C01 | |
| Sub-strand: Food and fibre production | | | | | | |
| *Students learn to:* | | | | | | |
| explore how plants and animals are grown for food, clothing and shelter  VC2TDE2C02 | | describe the ways of producing food and fibre  VC2TDE4C02 | | | explain how and why food and fibre are produced in managed environments  VC2TDE6C02 | |
| Sub-strand: Food specialisations | | | | | | |
| *Students learn to:* | | | | | | |
| explore how food can be selected and prepared for healthy eating  VC2TDE2C03 | | describe the ways food can be selected and prepared for healthy eating  VC2TDE4C03 | | | explain how the properties of foods influence selection and preparation for healthy eating  VC2TDE6C03 | |
| Sub-strand: Materials and technologies specialisations | | | | | | |
| *Students learn to:* | | | | | | |
| explore the characteristics and properties of materials and components that are used to create designed solutions  VC2TDE2C04 | | describe how the properties of materials affect function in a product or system  VC2TDE4C04 | | | explain how characteristics and properties of materials, systems, components and tools affect their use when producing designed solutions  VC2TDE6C04 | |
| Strand: Creating Designed Solutions | | | | | | |
| Sub-strand: Investigating and defining | | | | | | |
| *Students learn to:* | | | | | | |
| explore needs or opportunities, materials, components, tools and processes for designing and creating designed solutions  VC2TDE2D01 | | explore needs or opportunities for designing and testing materials, components, tools and processes needed to create designed solutions  VC2TDE4D01 | | | investigate needs or opportunities for designing, and the materials, components, tools and processes needed to create designed solutions  VC2TDE6D01 | |
| Sub-strand: Generating and designing | | | | | | |
| *Students learn to:* | | | | | | |
| explore, generate and communicate design ideas through describing, drawing or modelling, using manual and digital tools  VC2TDE2D02 | | generate and communicate design ideas and decisions using technical terms and graphical representation techniques, using manual and digital tools  VC2TDE4D02 | | | generate, iterate and communicate design ideas, decisions and processes using technical terms and graphical representation techniques, using manual and digital tools  VC2TDE6D02 | |
| Sub-strand: Producing and implementing | | | | | | |
| *Students learn to:* | | | | | | |
| use materials, components, tools and techniques to safely make designed solutions  VC2TDE2D03 | | select and use materials, components, tools and techniques to safely make designed solutions  VC2TDE4D03 | | | select, explain and use suitable materials, components, tools and techniques to safely make designed solutions  VC2TDE6D03 | |
| Sub-strand: Evaluating | | | | | | |
| *Students learn to:* | | | | | | |
| describe and select design ideas and solutions based on personal preferences and including sustainability  VC2TDE2D04 | | use given or predetermined design criteria including sustainability to evaluate design ideas and solutions  VC2TDE4D04 | | | negotiate design criteria that address ethical considerations, including sustainability, to evaluate design ideas, processes and solutions  VC2TDE6D04 | |
| Sub-strand: Planning and managing | | | | | | |
| *Students learn to:* | | | | | | |
| sequence steps for making designed solutions cooperatively  VC2TDE2D05 | | sequence steps to individually and collaboratively make designed solutions  VC2TDE4D05 | | | develop project plans that include consideration of resources to individually and collaboratively make designed solutions  VC2TDE6D05 | |