Sample teaching planner, Design and Technologies, Levels A–D

This teaching planner identifies themes, key messages and ideas for teaching content from specific content descriptions in Victorian Curriculum, Design and Technologies, Levels A–D.

The information in the teaching planner has been provided to assist teachers and other educators working with students at Levels A–D to design teaching and learning programs that are suitable for their own cohort of students. The ideas for teaching curriculum content are not intended to comprise a sequence of learning but rather they are ideas to support teachers to plan suitable lessons and experiences.

Key theme 1: Exploring and growing food

The ‘Ideas for the classroom’ in this theme promote skills, knowledge and understanding of concepts related to the production and preparation of food for human consumption, including the properties of food and the tools required for their production and preparation.

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| blank | **Level A** | **Level B** | **Level C** | **Level D** |
| **Key messages** | Foods that we eat are grown and prepared. | Different foods and gardens have different features. | Different cooking tools, garden tools and foods have different uses. | The properties of cooking tools and foods can be used to make food solutions. |
| **Ideas for the classroom** | * Experience a range of food textures, either through touch or sight or through tasting. * Experience a range of fibre textures (such as the textures of wool, bamboo, leather and cotton), using sense of touch, sight or smell. * Visit and experience a vegetable garden. * Experience the preparation of foods, through watching or hearing the cutting up of vegetables for a salad, the frying of eggs or bacon, or the microwaving of popcorn. * Experience and react to different food and garden-related smells and sounds, such as the smell of particular herbs or flowers; the crunching sound of eating celery, carrot or apple; or the sound of watering plants. * Experience and react to different farm animals, such as hearing the moo of a dairy cow or touching feathers from a chicken. | * Participate in the use of garden tools to complete simple tasks, such as watering a plant using a watering can or using a hand trowel to dig holes for seeds. * Explore the features of different types of gardens, such as flowers, fruit trees, vegetable patches, water features, compost bins and worm farms. * Indicate personal preference in relation to different foods. * Experience how food changes properties when cooked, such as observing how an egg becomes hard when boiled in water or how cake batter rises and becomes brown and solid when baked. | * Match a range of kitchen items to their function/use, such as a tea towel is used to dry dishes, a spoon to eat cereal and the oven to cook. * Match a range of garden tools to their function/use, such as a spade is used to dig, a watering can or hose to water plants and gloves to protect hands. * Identify a range of familiar food items such as fresh fruits, canned items and dried pasta. * Match properties or descriptions to foods and meals, such as matching ‘hot’ to soup, ‘cold’ to drinks, ‘green’ to vegetables and ‘roasted’ to meats. | * Participate in preparing simple foods, such as combining fruit for a fruit salad, kneading bread dough or spreading butter on toast. * Identify the equipment needed to prepare a basic meal. * Describe how a simple meal or food item was prepared, such as cooking pasta and sauce or mashing potatoes. * Participate in discussions about the steps needed to prepare simple foods such as a favourite sandwich or a fruit salad or smoothie. * Explore how the textures of vegetables change when cooked, such as the textures of potatoes, leafy greens and onions. |
| **Content descriptions** | Experience how people create familiar designed solutions to meet their needs [(VCDSTS001)](https://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCDSTS001)  Experience the characteristics and properties of familiar designed solutions in at least one technologies context [(VCDSTC002)](https://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCDSTC002)  React to a designed solution that has been created and produced safely to meet their needs [(VCDSCD003)](https://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCDSCD003) | Explore the use of familiar designed solutions to meet their needs [(VCDSTS004)](https://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCDSTS004)  Explore the characteristics and properties of familiar designed solutions in at least one technologies context [(VCDSTC005)](https://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCDSTC005)  Experience and explore how designed solutions are created and produced safely to meet personal needs [(VCDSCD006)](https://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCDSCD006) | Match familiar designed solutions to the personal needs they meet [(VCDSTS007)](https://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCDSTS007)  Examine and indicate the characteristics and properties of familiar designed solutions in at least two technologies contexts [(VCDSTC008)](https://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCDSTC008)  Examine and indicate how designed solutions are created and produced safely to meet needs [(VCDSCD009)](https://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCDSCD009) | Explore how people create familiar designed solutions and identify their ability to meet personal and local community needs [(VCDSTS010)](https://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCDSTS010)  Explore and communicate the characteristics and properties of familiar designed solutions in at least two technologies contexts [(VCDSTC011)](https://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCDSTC011)  Explore and communicate how designed solutions are generated and produced to meet needs [(VCDSCD012)](https://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCDSCD012) |

Key theme 2: Investigating forces and motion

The ‘Ideas for the classroom’ in this theme promote skills, knowledge and understanding of concepts related to the production and impacts of forces, such as pushes or pulls on objects.

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| blank | **Level A** | **Level B** | **Level C** | **Level D** |
| **Key messages** | Pushes and pulls can move or change objects. | Forces can be applied by other objects and people. | How objects respond depends on the push or pull applied. | We can use pushes and pulls to move and control objects. |
| **Ideas for the classroom** | * Experience how different-shaped objects move when pushed or pulled, such as rolling a round ball or pushing a square block. * React to different everyday items/simple machines that apply forces, such as kitchen and cooking equipment or a vacuum cleaner sucking up items. * Experience how different-shaped objects fall when dropped, for example how a ball falls versus how a piece of paper or feather falls. * Experience being moved up and down on a seesaw and/or swing. | * Participate in activities where people are using simple machines to conduct everyday tasks, such as using a can opener when cooking or using a vacuum cleaner or broom when cleaning. * Explore how everyday objects respond when pushed or pulled. * Experience how changing the people on a seesaw (such as changing a child for an adult) changes how the seesaw behaves. * Explore how different playground equipment (such as spinners, swings or seesaw ) behaves when pushed or pulled. | * Identify whether an object that moved was pushed or pulled by a force. * Watch the behaviour of a rattleback toy when spun in different directions. * Test what happens to a rope or piece of string when it is pushed or pulled. * Watch [Tug of War Championships, Kids Compete! (BabyLeague, YouTube)](https://youtu.be/zlSgBt8LRZ0) and identify which team is pulling harder in each example. * Explore how increasing the applied force (the push) changes how far up a swing goes with someone on it. | * Complete a simple experiment to investigate how an object moves when pushed and pulled. * Explore how simple machines can make jobs in our daily lives easier, such as using a wheeled trolley versus dragging items along the ground. * Explore how different parts of a bike move and interact with other parts of the bike, for example pushing the pedals moves the chain that turns the wheels. * Test how adding more mass to a cardboard bridge affects how it behaves. |
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Key theme 3: What are things made of?

The ‘Ideas for the classroom’ in this theme promote skills, knowledge and understanding of concepts related to the observable properties of natural and manufactured materials and how these properties allow the materials to be organised and used for different functions.

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| **Key messages** | Materials have properties we can observe. | Properties can be used to tell materials apart. | Properties can be used to group materials. | Different materials have different uses. |
| **Ideas for the classroom** | * Experience the properties of a range of natural materials, such as the hardness of rocks and the softness of wool. * Experience the properties of a range of manufactured materials, such as plastic containers, paper and corrugated cardboard. * Experience the properties of a range of designed objects from our everyday lives, such as cooking utensils, phones, computers and toys. * React to the effectiveness of eating utensils made from different materials, such as plastic versus metal forks, and knives used with foods of different textures such as raw and cooked carrots. | * Participate in identifying different properties of materials, such as hardness, colour, texture, flexibility and taste (where appropriate). * Use observable properties to tell pairs of items apart, such as using touch and texture to decide which of a pair of items should be called hard and which should be called soft. * Explore how different materials can be used for different purposes, such as waterproof material for an umbrella and heat-proof materials for cooking utensils * Explore how different versions of everyday items can have strengths and weaknesses, such as plastic versus metal eating utensils or cups. | * Use pairs of visual cards to match properties of materials (such as soft, hard, heavy or light) to examples of everyday items that exhibit these properties. * As a group, use stickers or sticky notes with written names or visuals for properties (such as soft, hard, heavy and light) to label objects in the classroom that have these properties. * Participate in organising craft materials into groups based on their properties, such as sorting buttons, icy pole sticks, pipe-cleaners and cards. * Explore different ways to organise the same materials by their properties, such as organising them by hardness, colour and shape. | * Complete a simple experiment to test whether a range of natural and manufactured items (such as pieces of wood, stone, plastic and rubber) float or sink. * Identify the materials that classroom items are made from by selecting the labels that depict the materials (such as wood, plastic, metal and rubber). * Explore how different materials can be combined to make a designed solution, by making a simple structure with cardboard and tape. * Decide if a material has the properties needed for a given task, such as exploring whether a plastic or cardboard box is better for storing water. |
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Key theme 4: Exploring robots and electronics

The ‘Ideas for the classroom’ in this theme promote skills, knowledge and understanding of concepts related to the uses, requirements for the proper function and basic properties of electronic devices, circuits and basic robots.

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| **Key messages** | Electronic products are all around us. | Different electronic products have different features. | Electronic products perform specific functions. | We can control electronics to solve problems. |
| **Ideas for the classroom** | * Experience the plugging in/pulling out and turning on/off of a range of everyday electrical items, such as a lamp, television, heater, phone charger and kettle. * Experience the functions of a range of everyday electrical items, such as lights, remotes and phones. * Experience different kinds of robots in the environment, such as rolling robots and flying drones. * React to modern and older forms of lighting, such as incandescent globes, fluorescent lights and light-emitting diodes (LEDs). | * Participate in comparing the properties of different kinds of lights, including incandescent globes, fluorescent lights and LEDs. * Observe construction of simple electric circuits with different components such as batteries, switches, globes, buzzers and motors. * Participate in identifying items that are powered by electricity (such as televisions and lights) and those that are powered by batteries (such as phones and torches). * Help identify electronic items typically found in different rooms of a house or in the classroom, such as lamps, television, computer and fans. | * Match examples of robots and/or electronic devices (such as robot vacuums, drones with cameras and robots used in factories) to their possible uses. * Participate in deciding which electronic device will be best for a certain use or problem, such as choosing between a torch or phone to light up a dark space. * Participate in making simple circuits using [littleBits](https://littlebitsinaustralia.com.au/) or [Makeblock Neuron](https://www.makeblock.com/steam-kits/neuron). * Help make a list of all the electronic devices used in a day at home or at school. | * Explore how objects can be 3D printed to solve a problem. * Explore examples of robots and electronic devices – including devices in the home, classroom or workplaces – and discuss what job they might do for humans. * Use simple robots, such as [Blue-Bots or Bee-Bots](https://core-electronics.com.au/brands/bee-bot-australia), to explore how these machines can be controlled by commands. * Follow instructions to produce specific simple circuits using [littleBits](file:///C:/Users/02204947/AppData/Local/Microsoft/Windows/INetCache/Content.Outlook/7TZCF3G1/littleBits) or [Makeblock Neuron](https://www.makeblock.com/steam-kits/neuron). |
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Key theme 5: Solving problems

The ‘Ideas for the classroom’ in this theme promote skills, knowledge and understanding of concepts related to the awareness of how problems can be solved and developing the ability to participate in problem solving.

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| **Key messages** | Everyday problems can be solved. | Everyday problems can have more than one solution. | We can solve problems. | Procedures can help us solve problems in different ways. |
| **Ideas for the classroom** | * Experience someone following steps to solve a problem or making a solution to a problem, such as following steps to make a sandwich, tie shoelaces or plant a seedling. * React to different methods for tying shoes, such as using laces, buckles and velcro. * Experience how different people solve the same problem, such as using a fork versus chopsticks versus hands to eat. | * Observe procedures for everyday tasks being followed to produce items or solutions for them, such as making a smoothie, cleaning up messes or putting objects in labelled containers. * Participate in putting on clothes and shoes in different orders. * Participate in helping to move objects using different methods, such as carrying items in your hands, using a bag or putting items in a cart. * Participate in helping to decide which solutions to simple problems worked best. | * Match visual instructions to their associated problem or solution, such as watering a plant, controlling a robot or making a sandwich. * Indicate how an everyday problem for them was solved, for example making a simple meal or carrying personal items to and from school. * Help brainstorm different ways to solve simple, familiar problems, such as preparing breakfast, carrying a set of items or deciding on materials to use for a craft or construction activity. * Participate in trying different ways to eat familiar foods. | * Explore different types of problems in their lives and the lives of their family or friends and how these problems can be solved, such as ways to use leftover food or how to clean dirty clothes. * Follow a simple procedure to build a model or designed solution, such as following instructions for building a toy car using construction bricks. * Match a designed solution and/or object to the everyday problem it solves or job it performs, such as an umbrella or raincoat to keep us dry, a hair band to tie hair back and a bicycle to make it quicker to move around. * Describe a simple procedure or steps that were followed to solve a problem, such as tidying a room or putting items in their correct location in a room. |
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