**STEM**

**Unpacking the Content Descriptions**

**Foundation to Level 2**

**Unpacking the content descriptions – STEM**

**Foundation to Level 2**

**Integrating Science and Design and Technologies (STem)**

**Focus: Integration of content related to the suitability of a variety of materials when designing for a purpose**

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| **Learning area** | **Design and Technologies**  | **Learning area** | **Science** |
| **Strand** | Technologies and Society | **Strand** | Science understanding |
| **Sub-strand** | Chemical sciences |
| **Content Description** | Identify how people create familiar designed solutions and consider sustainability to meet personal and local community needs [(VCDSTS013)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCDSTS013) | **Content Description** | Everyday materials can be physically changed or combined with other materials in a variety of ways for particular purposes [(VCSSU045)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCSSU045) |
| **Related extract from Achievement Standard** | They describe the purpose of familiar designed solutions and how they meet the needs of users and affect others and environments. | **Related extract from Achievement Standard** | They describe the properties, behaviour, uses and the effects of interacting with familiar materials and objects. |
| **Suggested focus** | Learning may focus on:* making choices based on available tools/resources
* investigating why features are included in familiar objects
* exploring when items might be reused
* identifying how local resources could be used.
 | **Suggested focus** | Learning may focus on:* investigating how everyday objects can be made to change their shape
* exploring what happens when objects or materials are combined to make new items/materials
* documenting properties of items before and after mixing
* why different parts of familiar items are made of different materials.
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| **Sample activities (integrating both learning areas)** |
| * Investigating how different recipes for food items affect the characteristics and properties of the food being created.
* Discussing why different parts of toys or classroom items might be made of different materials.
* Identifying which tool is best suited to creating a desired change in an object/material.
* Conducting an excursion to a local community garden or, if available, exploring the school garden to see the environments where fruit and/or vegetables are grown.
* Identifying why decisions have been made about features and materials in the garden.
* Creating or following a simple recipe, identifying characteristics and properties of the ingredients throughout the process.
* Bringing a range of household waste; such as: newspaper and cardboard to discuss the importance of recycling.
* Using unwanted paper and paper scraps to create recycled paper, and comparing the characteristics and properties of the original paper to that of the new recycled paper.
* Discussing why particular items/materials were used when creating a wind chime out of household items for the school’s garden.
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**Unpacking the content descriptions – STEM**

**Foundation to Level 2**

**Integrating Digital Technologies and Mathematics (sTeM)**

**Focus: Integration of content related to following simple sequences using digital tools in an appropriate manner**

| **Learning area** | **Digital Technologies** | **Learning area** | **Mathematics** |
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| **Strand** | Data and information | **Strand** | Number and Algebra |
| **Sub-strand** | Patterns and algebra |
| **Content Description** | Independently and with others create and organise ideas and information using information systems, and share these with known people in safe online environments [(VCDTDI016)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCDTDI016) | **Content Description** | Follow a short sequence of instructions [(VCMNA077)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMNA077) |
| **Related extract from Achievement Standard** | They create and organise ideas and information using information systems and share these in safe online environments. | **Related extract from Achievement Standard** | They represent, continue and create simple patterns. |
| **Suggested focus** | Learning may focus on:* creating digital images and other files
* sharing digital images and other files
* exploring the role of different types of media in off- and online environments
* working in controlled online environments such as an intranet or class blog
* discussing when it is fair to use other people’s work, and when it is fair to share other people’s work
* exploring ways to organise information using digital tools.
 | **Suggested focus** | Learning may focus on:* playing a simple game
* making and following a set of instructions for a task in class
* giving and following directions
* exploring representing instructions using visuals
* using instructions to complete a pattern or sequence
* exploring directional language in instructions such as left, right, forward and backward.
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| **Sample activities (integrating both learning areas)** |
| * Designing and playing a simple board game that incorporates digital images.
* Creating and testing the coding sequence of a robot (such as a Bee-Bot or Blue-Bot) and sharing their work with the class via photos or video recording.
* Providing directions to classmates to a set point and filming their progress.
* Completing a treasure hunt with other students and recording the process on an digital device (such as a iPad) to share with the class.
* Exploring different ways that instructions can be shown or represented, including using digital tools or programs.
* Documenting steps followed in a process or activity, using a list or simple graphic organiser.
* Following a set of instructions to create a pattern and sharing this pattern with peers using an online platform.
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