

<b>Title</b>	<b>Demonstrate knowledge of plant structure, functions and processes</b>		
<b>Level</b>	<b>3</b>	<b>Credits</b>	<b>5</b>

<b>Purpose</b>	People credited with this unit standard are able to: describe plant structures and their functions; demonstrate knowledge of plant tissue structures and their importance for plant growth; describe the importance of plant processes for plant growth and/or development; and the effects of environmental factors on plant processes.
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<b>Classification</b>	Horticulture > Production Horticulture
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<b>Available grade</b>	Achieved
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### Guidance Information

None.

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### Outcomes and performance criteria

#### Outcome 1

Describe plant structures and their functions.

Range plant structures – cells, roots, stems, leaves, flowers and fruits.

#### Performance criteria

- 1.1 Describe the structure and functions of plant structures in terms of their importance for plant growth or reproduction.

#### Outcome 2

Demonstrate knowledge of plant tissue structures and their importance for plant growth.

#### Performance criteria

- 2.1 Describe plant tissue structures in terms of their importance to plant growth.

Range plant tissue structures include but are limited to – vascular system, cambium tissue, meristem tissue, epidermal tissue, storage tissue.

- 2.2 Identify the age of particular shoots in terms of the internal and external plant signs.

**Outcome 3**

Describe the importance of plant processes for plant growth and/or development.

Range plant processes – photosynthesis, respiration, water uptake and transpiration, nutrient uptake, pollination, fertilisation, seed and fruit formation.

**Performance criteria**

3.1 Describe plant processes in terms of their importance for optimum plant growth and/or development.

**Outcome 4**

Describe the effects of environmental factors on plant processes.

**Performance criteria**

4.1 Describe environmental factors in terms of their effect on plant processes.

Range plant processes include but are not limited to – photosynthesis, respiration, water uptake and transpiration, nutrient uptake, pollination, fertilisation, seed and fruit formation; environmental factors may include but are not limited to – light, temperature, water, wind, oxygen, frost and carbon dioxide; evidence of two environmental factors for each plant process is required.

<b>Replacement information</b>	This unit standard replaced unit standard 22177 and unit standard 22178.
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<b>Planned review date</b>	31 December 2026
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**Status information and last date for assessment for superseded versions**

Process	Version	Date	Last Date for Assessment
Registration	1	19 January 2017	31 December 2024
Review	2	27 May 2021	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	0052
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

**Comments on this unit standard**

Please contact the Primary ITO [standards@primaryito.ac.nz](mailto:standards@primaryito.ac.nz) if you wish to suggest changes to the content of this unit standard.