3 North Canterbury

The Waitaha North Canterbury region is slowly being squeezed in front of our Australian and Pacific plate boundary. Gentle folds across the region are pushed up along faults, making the distinctive ranges and valleys of this wine growing and farming region, cored by the older marine sandstones (”greywacke”) and mudstones of the Torlesse Supergroup. Most of the sedimentary rocks are marine and some are as young as 5 million years old in the northern part of the North Canterbury region.

4 Canterbury Plains

The Canterbury Plains are the largest region of flat land in Aotearoa New Zealand! These great plains were formed from gravels and sands, eroded and transported from the Southern Alps by our complex braided river systems. Our current plate boundary began lifting up the Southern Alps at the headwaters of the Plains over 22 million years ago. The formation of glaciers over the last 1 million years also transported vast amounts of sediment into the Plains. Erosion has since then decreased dramatically, confined more largely to the mountain regions and major river valleys (e.g. Waimakariri, Rakaia, Rangitata) which continue to shape the Canterbury Plains landscape today.

5 Banks Peninsula

The greater Te Pātaka o Rākaihautū Banks Peninsula is comprised of the eroded remnants of two large volcanic complexes (Lyttelton & Akaroa) made of basalt. These complexes are termed strato-shield volcanoes, which means their flank deposits alternate between layers of large lava flows with more explosive features, ash layers and changing mineral compositions. These volcanoes were active during the Mid- to Late-Miocene (12.4 to 5.8 million years ago) with multiple eruption vents.

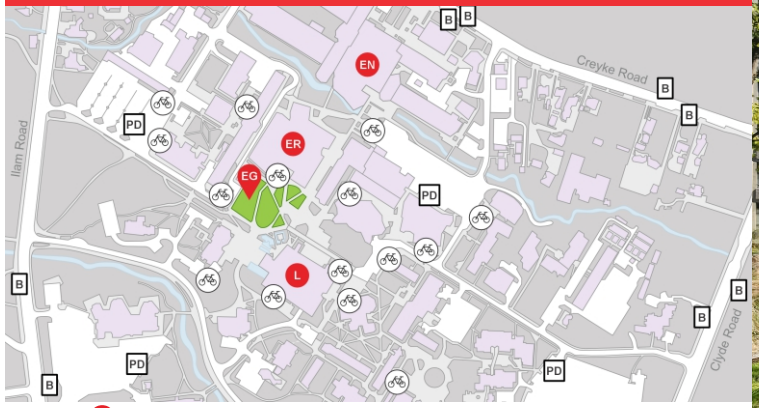
From volcanic eruptions, to hidden fossils, the UC Earth Science Garden has a lot to offer.

We encourage you to get up close with the rocks in the garden. Gently move plants out of the way to get a better look.

Please look after our garden, avoid stepping on plants and take all rubbish with you.

Find out more on our website

Come find us on Campus
Ilam, Christchurch 8041



- EG UC Earth Science Garden
- B Bus Stop
- PD Pay by Plate Parking
- Bike Storage
- L Central Library
- EN Engineering Department
- ER Ernest Rutherford

UC UNIVERSITY OF CANTERBURY | Science
Earth and Environment

UC Earth Science Garden

Geology Exploration Trail

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Earth and Environment

A stroll across Te Wai Pounamu

This leaflet will take you on a journey across Te Wai Pounamu - Aotearoa New Zealand's South Island, all from the comfort of the UC Earth Science Garden.

Featuring over 200 rocks across 15 different types, the garden is a scaled-down representation of the bedrock geology of Te Wai Pounamu South Island of Aotearoa New Zealand, with a particular focus on the Canterbury and Westland regions. The rocks, including one weighing over 6 tonnes, are arranged as a solvable map puzzle, to mirror key geological relationships and structures, offering students the chance to practice identifying features and solving geological problems as they would in the field.

As you make your way through the garden, you will come across small signs with QR codes. These will take you to the UC Earth Science Garden website, to show you information about the rocks you're looking at and how they came to be in the garden.

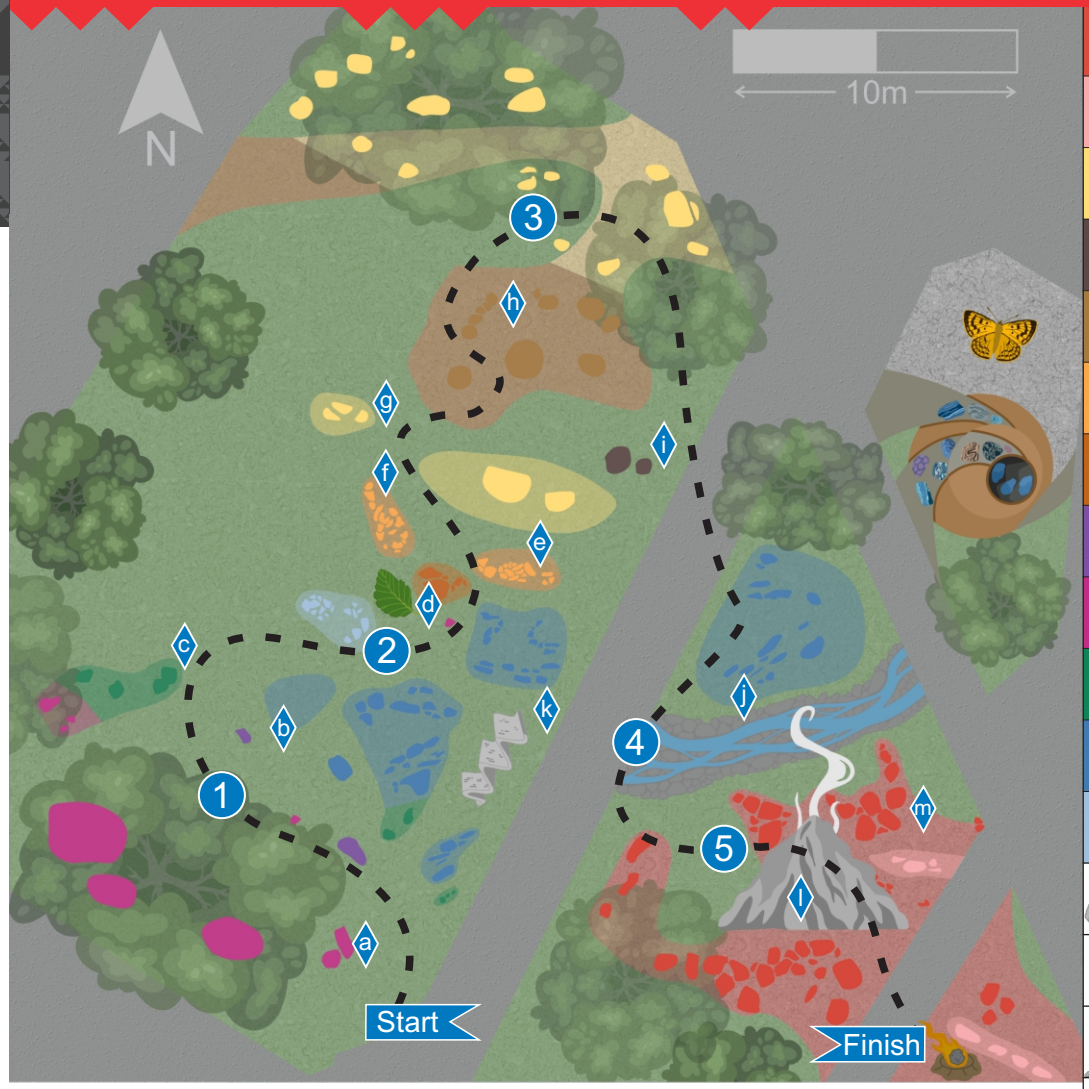
We'll be starting our journey in the West Coast, located in south-west corner of the garden.

1 West Coast

Te Tai Poutini West Coast is a very different landscape compared to North Canterbury and the Canterbury Plains, east of the Southern Alps. The geology is much older, often highly deformed, and contains many slices of landmasses known as terranes. The main two rock types presented in this area are Mylonites and Granites.

2 Southern Alps

The landscapes of Kā Tiritiri o te Moana Southern Alps are highly varied along its length. This is our island's spine along our active plate boundary, characterised by a range of deformed sediments, schists, and unique rocks, thrust up into our major mountain peaks. A variety of rock types are found throughout this area, including Greywacke, Dunite, Schist, Mudstone and Conglomerate.



a - Crystals in Magma
b - Alpine Fault
c - Dunite turning to Pounamu
d - Beech Tree
e - Petrified Wood
f - Shell and Tree Fern Fossils
g - Limestone and Kowhai
h - Mosasaur Fossil and Concretions
i - Mystery Rock
j - Pink Schist - Aroha Stone

k - Fold Sculpture
l - Volcano in a Barrel
m - Crystals in Lava

- Basalt
- Trachyte
- Limestone
- Mystery Rock
- Mudstone
- Sandstone
- Conglomerate
- Mylonite
- Granite & Syenite
- Dunite
- Schist
- Greywacke
- Fold Sculpture
- Beech Tree
- Volcano
- Rock Seat (Coming soon)
- Meteor Crater (Coming soon)
- Butterfly Garden (Coming soon)
- River Mosaic (Coming soon)