**ACTIVITY: Making a life-size leaf collection**

**Activity idea**

In this activity, students gather, press and label plant leaves to create a life-size leaf collection. Students laminate the dried leaves for easier handling and storage.

By the end of this activity, students should be able to:

* understand the processes used for collecting, pressing and drying plant leaves
* use resources to identify the plant leaves
* decide what information to include on an identification label
* discuss the value in having a leaf collection.

[Background information for teachers](#Introduction)

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**Background information for teachers**

Dried and laminated plant leaves serve a number of purposes. They are life size and useful for plant identification when out in the field. They can form a reference collection when documenting a restoration project. Lamination means the leaf can be flipped to study the front and the back. Lamination also means the specimen can be handled in a more robust manner.

The purpose of the leaf collection will guide aspects of the collection and labelling processes. If you are creating a reference collection to monitor plant growth along a transect line, collection, record keeping and labelling will require a greater attention to detail. If the purpose is to gather leaves for observation, labelling need not be as specific.

The student instructions are in Word – alter them to suit your students’ needs.

**Resources for plant identification**

Andrew Crowe has produced several inexpensive, easy-to-use identification guides: *Which Native Forest Plant, A Mini Guide to the Identification of New Zealand Native Trees, Life-Size Guide to Native Trees* and *A Mini Guide to the Identification of New Zealand Native Ferns*.

Online resources include:

* the Department of Conservation’s [Experiencing native trees in your green space](http://www.doc.govt.nz/get-involved/conservation-education/resources/experiencing-native-trees-in-your-green-space/) teaching resource
* Manaaki Whenua Landcare Research’s [Key to native plants of schools and marae in New Zealand](https://www.landcareresearch.co.nz/resources/identification/plants/native-plants-schools-marae-key)
* University of Otago’s [Flora Finder](https://www.otago.ac.nz/botany/outreach/florafinder/) app
* New Zealand Plant Conservation Network’s [Leaves](http://nzpcn.org.nz/publications/Module_1_chapter_9.pdf) PDF.

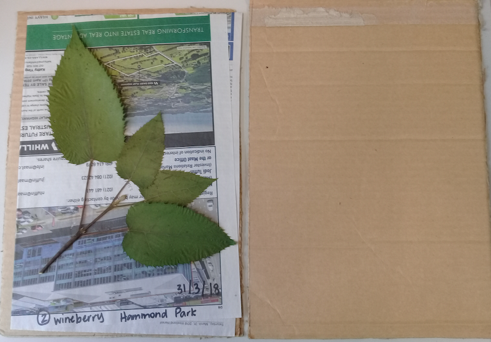
**Student instructions**

***Equipment***

* Plant identification book
* Camera or cell phone
* Scissors
* Bags for collecting leaves
* Corrugated cardboard (A4 size)
* Newspaper (A4 size)
* 2 pieces of plywood, wooden lattice or ceramic tiles
* Luggage strap
* Identification labels

***Collecting the leaves***

* + - 1. Chose a plant. Use an identification book to find the plant’s name. If possible, photograph the entire plant – its stem or trunk, bark, seeds and so on.
      2. Record the details of the plant on the plant information table. Choose how much information you need to record. Handheld GPS units and cell phones give map co-ordinates, if you want this level of detail.
      3. Cut the leaf or stem of leaves from the plant and place it in a bag. Choose a sample with flowers, if in season. You can also collect seeds and small pieces of bark, if available. Number the bag to match the plant information table.
      4. Continue this process as you collect additional plant leaves.



***Pressing and preserving the leaves***

* + - 1. To press a leaf, lay down a piece of corrugated cardboard and top it with a piece of newspaper. Lay the leaf on the newspaper, with the plant name and corresponding number on the newspaper.
      2. Cover the leaf with newspaper and cardboard.
      3. Continue stacking the layers of cardboard, newspaper and leaves.
      4. Place the collection in a plant press or between two pieces of plywood or tiles.
      5. Secure the collection with a luggage strap. The collection needs to be tightly pressed.
      6. Place the collection in a dry place. The goal is to dry the leaves as quickly as possible to hold their colour. If possible, change the newspaper daily.
      7. Place any seeds or bark in a space to dry. Label the seeds with the plant name and corresponding number.
      8. Test if the leaf is dry by holding it up to your cheek. If it feels cold, it is not dry yet.
      9. Once dry, museums place the leaves, seeds and bark in a freezer to kill mould spores and insect eggs, but you can omit this step if freezer space is not available.

***Creating labels***

* + - 1. Use the table to create identification labels. You can choose what to include, but at a minimum, the label should contain the plant’s scientific name, common name, Māori name, location and date collected.

***Creating the life-size leaf book***



* + - 1. When the leaf is dry, trim it of any bulky stem materials.
      2. Place the leaf on a backing sheet, if desired. Alternatively, place the leaf directly on the laminating sheet. This allows you to see the back of the leaf, which may look different to the front.
      3. Position the label on the laminating sheet. Position any other information you want to use – for example, a photo of the plant, information about the plant species or dried flowers.
      4. Use a laminator to heat seal the leaf. Take special care when laminating leaves with thick stems.
      5. If the leaf is too bulky to laminate, tape it onto cardboard and place it in a plastic sleeve.
      6. If you have collected seeds or bark, place the material in a small bag and attach the bag to the laminated sheet.
      7. Place the sheets in a notebook.

**Plant information**

|  |  |
| --- | --- |
| Plant number – write on the collection bag |  |
| Plant name – you can identify it later if you don’t know |  |
| Collection location – map co-ordinates, transect information, altitude |  |
| Habitat – forest, wetland, next to a stream etc. |  |
| Name of collector |  |
| Date of collection |  |

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**Identification labels**

|  |  |
| --- | --- |
| Scientific name |  |
| Common name |  |
| Māori name |  |
| Collection location |  |
| Map co-ordinates |  |
| Transect location |  |
| Altitude |  |
| Habitat |  |
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| --- | --- |
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