



DATA COLLECTION SHEETS

Our landscape is becoming increasingly modified and less 'living'. Bringing our landscape alive again and creating schools grounds and communities that enhance health and well-being for nature and people is an outcome of being an enviroschool.

Accurate measurement of permeable and impermeable surfaces, buildings, native plantings, ornamental and food production gardens will give an overview of the school's ecosystem. From this a school can form a record of the living landscape and identify where improvements can be made. Mapping your school grounds will help to form a picture of how alive your school landscape is and how much potential you have for enhancing its living qualities.

School Landscape Type:

To record information about your school landscape type you will need to calculate the area of **buildings**, **grass**, **paved** areas and **gardens** in your school. These measurements will help you work out how much of your school is in living landscape, and how much is covered by impermeable surfaces that support less life and biodiversity.

The easiest way to work out the proportion of landscape types at your school is with a copy of an aerial photograph. This will help you measure the area of large spaces such as buildings, fields and tennis courts. You will need to use tape measures to work out the area of smaller spaces in your school such as gardens and structures that appear too fuzzy and inaccurate on your aerial map. Follow the instructions and use the data collection sheets to record the landscape type at your school.

What to measure

Total Area of School

The property boundary of your school should be visible on your aerial photograph or school map. Do an area calculation off your aerial map, making sure you're using the right scale.

Total Area of Buildings

This area is the land footprint that a building takes up.

Total Area of Paved Surfaces

Paved areas are impermeable surfaces where very little will grow. This includes all concrete or asphalt surfaces such as the carpark, playground, walkways and paved seating spaces. Include the swimming pool and the paving around it.

Total Area of Grass

Grass in the school includes the playing field and lawns around buildings and paths.

Total Area of Gardens

To measure the area of gardens in your school you will need to look for three different types of garden: **Ornamental**, **Food** and **Native**. Where gardens are mixed, either break down your areas or decide what the majority of that planting is and record the area under that category. **Ornamental Gardens** in the school are largely exotic flowers and shrubs planted to look or smell nice. **Food Gardens** include the vegetable patch, herb containers and orchard area. **Native Restoration** gardens are areas that have been planted heavily with native plants.

DATE:



Process

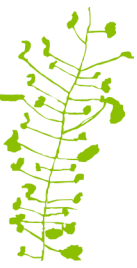
You will need:

- An aerial photograph of your school. A scale of at least 1:1000 so that you can see buildings clearly. Contact your local/ regional council for help to get a copy.
- Trundle Wheel or Tape Measure to measure distance.
- Gridlined paper.
- Calculators, pencils, rulers, area formulae.

Instructions:

1. Enlarge an aerial photograph of your school to A1 or A0. Your Council may be able to provide you with a large copy. Check the map scale by measuring a clearly defined edge, e.g. a building wall or tennis court on the map, and then measuring the corresponding edge outside. Check when the aerial photograph was taken. There might be new buildings or gardens in your school that aren't showing and that you will need to draw on. You may also have a school building plan that will help with calculations and will give you more accuracy when measuring buildings.
2. With a black felt, mark around the large areas on your map so they will show clearly when it is photocopied. Mark the school property boundary.
3. If your school is large, you could cut the aerial photograph into sections and then photocopy each section to the same enlargement. Check your scale again and record it on each section.
4. Get into groups to work out the area of the features on your map sections. There are **two** ways you could measure the area of the **School Property, Buildings, Grass, Paving** and **Gardens** at your school.
 - Measure the edges of the landscape types on your map and using **area formulae** calculate area. Try to get your measurements to the nearest millimetre. For smaller, less distinct areas such as gardens, head outside with tape measures and record these areas accurately. Make sure you use the right units and scale to calculate area. Record these measurements on your data collection sheets.
 - **OR:** Photocopy your map sections onto **grid-lined paper**. Work out what the area of one square is, based on the scale of your map section. Count the squares of each landscape type on your map and record these areas on your data collection sheets. For smaller, less distinct areas such as gardens, you may still need to go outside and measure these spaces accurately and use area formulae to calculate these areas.
5. Add up all your measurements for each landscape type. You will have a subtotal for **Buildings, Paved areas** and **Grass**. You will also have subtotals for **Ornamental, Food** and **Native Gardens**. Check that these add up to the figures you calculated for the **Total Property Area** of your school. Transfer this information to the **TOTAL AREA OF SCHOOL DATA COLLECTION SHEET**. Once you are happy with these figures, transfer the final results to the **LIVING LANDSCAPES ANNUAL SUMMARY**.
6. Count how many large trees (taller than a single-storey building) there are at your school and the fruit and nut trees in your orchard that are old enough to have fruited. Find out how many native trees have been planted within the school and in the local community. Transfer these totals to the **LIVING LANDSCAPES ANNUAL SUMMARY**.

DATE:



Data Collection Sheet 1

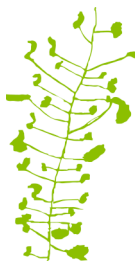
(Photocopy this sheet if additional copies are required and mark sheet a, b, c.....)

BUILDINGS, PAVING, GRASS

Map Reference Number eg. A Block or Library Lawn	BUILDING Area (m ²)	PAVING Area (m ²)	GRASS Area (m ²)
TOTALS	m ²	m ²	m ²

Transfer these TOTALS to Data Collection Sheet 3 (Total Area of School)

DATE:



Data Collection Sheet 3

TOTAL AREA OF SCHOOL

Using your aerial photograph calculate the area of the school within the school property boundary. Record below.

You can check this measurement against the Ministry of Education property information for your school. Go to www.pmis.minedu.govt.nz and type in your school name. Click on Property Information and scroll down to the Site Area Occupied in hectares (ha). Remember 1ha = 10,000m².

Total Area of School	
SCHOOL PROPERTY AREA calculated from school map measurement.	A m ²

Transfer your totals from Data Collection Sheets 1 and 2. Your subtotals will add to the **Total School Property Area B**. Is this figure close to the **Total School Property Area A**? Check your measurements and once you are happy that all of your calculations are as accurate as possible, transfer these totals to the **LIVING LANDSCAPES ANNUAL SUMMARY**.

School Landscape Type	
Total area of BUILDINGS	m ²
Total area of PAVING	m ²
Total area of GRASS	m ²
Total area of all GARDEN	m ²
TOTAL SCHOOL PROPERTY AREA	B m ²

Transfer these TOTALS to the LIVING LANDSCAPES ANNUAL SUMMARY

DATE:



Large Trees

Large trees and fruit and nut trees are great in schools for a number of reasons. They provide shelter and shade on a sunny day, a green and leafy place to sit, or an outdoor classroom to learn about the environment. They provide habitat for birds and while growing, they take up carbon dioxide from the air, so your school can help restore atmospheric balances. If you're lucky enough to have fruit trees, there's fresh local fruit in season for your school community and a chance to learn about growing an orchard.

Record the number of Large Trees (as tall or taller than a single-storey building) within your school on the tally sheet. Find out which fruit and nut trees are mature and have fruited, and record the number of these trees on the tally sheet. Transfer your totals to the **LIVING LANDSCAPES ANNUAL SUMMARY**.

TALLY SHEET

Fruit and Nut Trees - have produced fruit and are within the school grounds		Large Trees - as tall or taller than a single storey building and within the school grounds	
Total Fruit and Nut Trees		Total Large Trees	

Transfer these **TOTALS** to the **LIVING LANDSCAPES ANNUAL SUMMARY**

Biodiversity in the School Community

Planting native trees and shrubs is a great way to improve biodiversity in your community. Find out how many native plants were planted in the school grounds and in the community this planting season.

How many native plants were planted in the school grounds this year?	no.
How many native plants were planted outside of the school in the local community this year?	no.

Transfer these **TOTALS** to the **LIVING LANDSCAPES ANNUAL SUMMARY**