Monitoring Your Site

We monitor our planting site to help us understand how well plants survive after planting, and what influences their survival and growth.

We count how many plants we put in the ground and check how healthy they are right after planting. Then, we look at them again after the first Summer to see how much they've grown and how many are still thriving. It's like being a plant detective!

What you will need

- Ruler
- Notebook
- Measuring tape (50m)
- Wooden stakes (2)
- Rubber mallet
- Phone/camera
- Tripod or star picket (optional)

What to do

1. Choose a spot in your planting site for your transect, and place a wooden stake at the start point.

2. Run the measuring tape in a straight line for 20m. You can use the wooden stake to hold the tape in place.

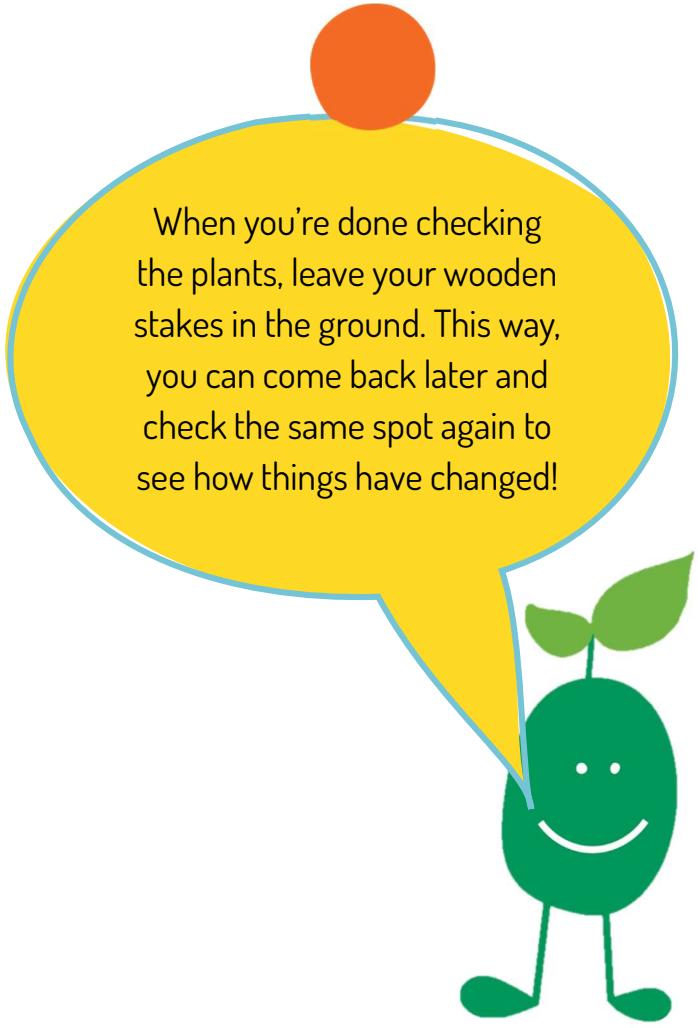
3. Place a wooden stake at the end point of you transect (this will help hold the tape in place).

4. Start at the beginning of the transect (0 metres on the measuring tape). Write down the **height** and **health** for one plant that is found at about the one metre mark along the tape, using the table on page 4.

Height: Use your ruler to measure how tall each plant is.

Health: Look at each plant and see how healthy it looks. Is it green and strong, or does it look a bit unhealthy? Check out the plant health definitions on the next page to decide how healthy each plant is.

5. Repeat this as you walk along the measuring tape. Every metre, stop to record the plant height and heath for one plant (twenty plants in total for the whole transect).



Plant Heath

Good

Plants are green and healthy and free from insect and diseases damage, with no yellow or brown leaves. They might even have flowers or fruits.

Average

Plants are generally healthy but may have some brown or yellow leaves, some leaf loss or spots or holes in their leaves and stems due to insects or disease.

Poor

Plants have lots of brown or yellow leaves or spots or holes in their leaves and stems due to insects or disease.

Good

Average

Poor

Metre	Plant Height				Plant Health		
	Less than 10cm	10–30cm	30–50cm	More than 50cm	Poor	Average	Good
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

Metre	Plant Height				Plant Health		
	Less than 10cm	10–30cm	30–50cm	More than 50cm	Poor	Average	Good
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Photopoint Monitoring

"Photopoint monitoring" is just another name for a before and after photo taken at the same place in your planting site over time. You take a photo of that spot, and then you come back to the exact same place and take another photo every 6-12 months. You keep doing this over and over. By looking at all these photos, you can see how your planting site has changed over time.

1. Choose a spot in your planting site that you want to observe. Make sure it's a spot you can visit regularly.

2. Use something like a star picket or wooden stake to mark the exact spot where you'll stand each time you take a photo. This helps you take pictures from the same place every time. You can use a GPS to mark the exact location if you like.

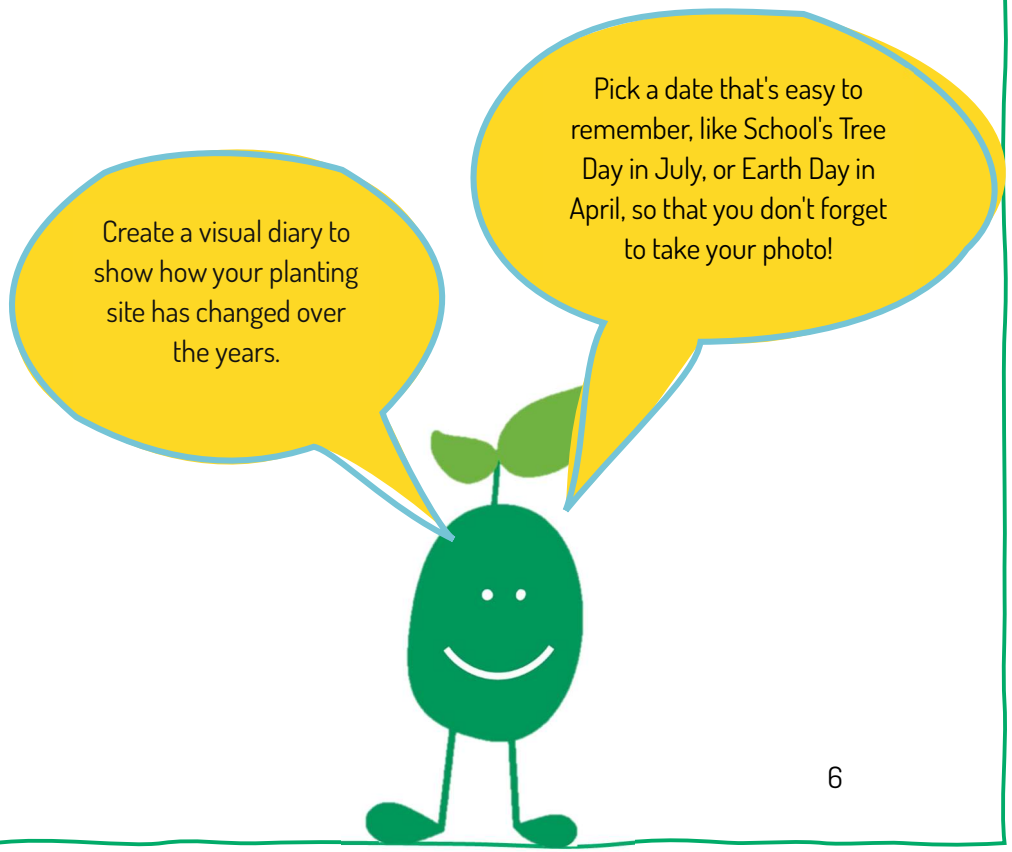
3. Stand at your marked spot and take a clear photo of the area. Try to include some landmarks like trees and rocks to help you line up your future photos. Use the landscape setting on your phone/camera for the best results. You can rest to phone/camera on top of your marker, or use a tripod to keep your camera steady and at the same height.

4. Write down the date you took the photo.

5. Repeat. Come back to your photopoint spot every 6-12 months, or more often if you like, say during every season. Stand in the same spot and take another photo. Remember to note the date each time.

Tip: Print out a copy of your first photo and bring it with you each time you take a new photo. Use it as a guide to match the composition and angle.

6. Compare your photos. Look at all your photos together after a year or two. You'll see how much your plants have grown and how your planting site has changed over time.



Monitoring Your Site – Teacher Resource

Suggested Lesson time – 1 lesson, approximately 50 minutes.

This lesson will help students to understand the importance of monitoring their planting site over time. It can be a standalone lesson or be combined with any other worksheet and lessons in the Habitat Warriors program (for example, linking it to other habitat assessments such as 'What's the Story with Understorey', 'Habitat Level Up' and 'Wildlife Detectives').

At the end of this lesson students will:

- Understand why is it important to monitor plants at their planting site.
- Develop skills in observation, measurement and data collection.

This lesson can be made suitable for all primary levels – suggestions on how you could 'level up' the lesson are also given, while links to the Victorian Curriculum can provide additional ideas.

Basic Lesson Outline

Briefly explain what scientific monitoring is and how can we use this information to help protect our environment. Highlight that scientists monitor vegetation to learn about ecosystem health, biodiversity and climate change.

- Ask students why is it important to monitor plants at their planting site.
- Which factors might affect plant health and growth at our planting site?
- What type of information should we gather and how should we record it?
- Why is it important to have healthy and diverse native vegetation in our local environment?

Provide students with the 'Monitoring Your Site' worksheet

Explain the practical task

- Explain what a transect is and how it is used to monitor the health and growth of plants in a specific area.
- Organise the class into small groups to undertake the monitoring task.
- Leave plenty of time for the students to complete the practical task.

Class discussion

- How many different types of plants did you see along the transect line?
- Were the plants mostly healthy or did you see signs of disease and pests?
- What might be causing any differences in plant health or growth in the plants along your transect?
- Why is monitoring plant growth and health important? How can this monitoring data help us to take care of our planting site into the future?
- Why is it important to monitor our planting site regularly and over time?
- Were there any challenges that you faced when monitoring your planting site?

Lesson Level Up

There are multiple ways to extend and expand this lesson to make it more comprehensive and/or introduce more complex topics for older children/year levels. For example:

- Expand the Science component: Students can collate and analyse their data and discuss their findings in a report or presentation. For example, students can look for patterns or changes in the plant health and growth along the transect line.
- Expand the Science component: Discuss why environmental monitoring is important, and how this information can be used to make decisions that support the environment.
- Expand the Science component: Students can research the relationship between local climate, local provenance and revegetation success, and how future changes in climate may impact the growth and health of their planting site.

The complexity of this section could be adjusted depending on year level.

Detailed Curriculum Links

Science			
	Foundation – Level 2	**Level 3 – Level 4**	**Level 5 – Level 6**
Science Understanding			
Science as a human endeavour	People use science in their daily lives.	Science knowledge helps people to understand the effects of their actions.	Scientific understandings, discoveries and inventions are used to inform personal. and community decisions and to solve problems that directly affect people's lives.
Science Inquiry Skills			
Questioning and Predicting	Respond to and pose questions, and make predictions about familiar objects and events.	With guidance, identify questions in familiar contexts that can be investigated scientifically and predict what might happen based on prior knowledge.	With guidance, pose questions to clarify practical problems or inform a scientific investigation, and predict what the findings of an investigation might be based on previous experiences or general rules.

<table>
<tr><th colspan="4">Science</th></tr>
<tr><th></th><th>Foundation – Level 2</th><th>Level 3 – Level 4</th><th>Level 5 – Level 6</th></tr>
<tr><td>Planning and conducting</td><td rowspan="2">Participate in guided investigations, including making observations using the senses, to explore and answer questions.</td><td>Suggest ways to plan and conduct investigations to find answers to questions including consideration of the elements of fair tests.</td><td rowspan="2">With guidance, plan appropriate investigation types to answer questions or solve problems and use equipment, technologies and materials safely, identifying potential risks.</td></tr>
<tr><td>Safely use appropriate materials, tools, equipment and technologies.</td></tr>
<tr><td rowspan="2">Recording and processing</td><td>Use informal measurements in the collection and recording of observations.</td><td>Use formal measurements in the collection and recording of observations.</td><td rowspan="2">Construct and use a range of representations, including tables and graphs, to record, represent and describe observations, patterns or relationships in data.</td></tr>
<tr><td>Use a range of methods, including drawings and provided tables, to sort information.</td><td>Use a range of methods including tables and column graphs to represent data and to identify patterns and trends.</td></tr>
<tr><td rowspan="2">Analysing and evaluating</td><td rowspan="2">Compare observations and predictions with those of others.</td><td rowspan="2">Compare results with predictions, suggesting possible reasons for findings.</td><td>Compare data with predictions and use as evidence in developing explanations</td></tr>
<tr><td>Suggest improvements to the methods used to investigate a question or solve a problem.</td></tr>
<tr><td>Communicating</td><td>Represent and communicate observations and ideas about changes in objects and events in a variety of ways.</td><td>Represent and communicate observations, ideas and findings to show patterns and relationships using formal and informal scientific language.</td><td>Communicate ideas and processes using evidence to develop explanations of events and phenomena and to identify simple cause-and-effect relationships.</td></tr>
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Mathematics			
	Foundation – Level 2	**Level 3 – Level 4**	**Level 5 – Level 6**
Measurement and Geometry			
Using units of measurement	F: Use direct and indirect comparisons to decide which is longer, heavier or holds more, and explain reasoning in everyday language L1: Measure and compare the lengths, masses and capacities of pairs of objects using uniform informal units L2 Compare and order several shapes and objects based on length, area, volume and capacity using appropriate uniform informal units	L3: Measure, order and compare objects using familiar metric units of length, area, mass and capacity L4: Use scaled instruments to measure and compare lengths, masses, capacities and temperatures	L5: Choose appropriate units of measurement for length, area, volume, capacity and mass L6: Connect decimal representations to the metric system
Statistics and Probability			
Chance			L6: Describe probabilities using fractions, decimals and percentages Compare observed frequencies across experiments with expected frequencies

Statistics and Probability cont.			
	Foundation – Level 2	**Level 3 – Level 4**	**Level 5 – Level 6**
Data Representation and Interpretation		L3: Collect data, organise into categories and create displays using lists, tables, picture graphs and simple column graphs, with and without the use of digital technologies Interpret and compare data displays	L5: Pose questions and collect categorical or numerical data by observation or survey Construct displays, including column graphs, dot plots and tables, appropriate for data type, with and without the use of digital technologies Describe and interpret different data sets in context