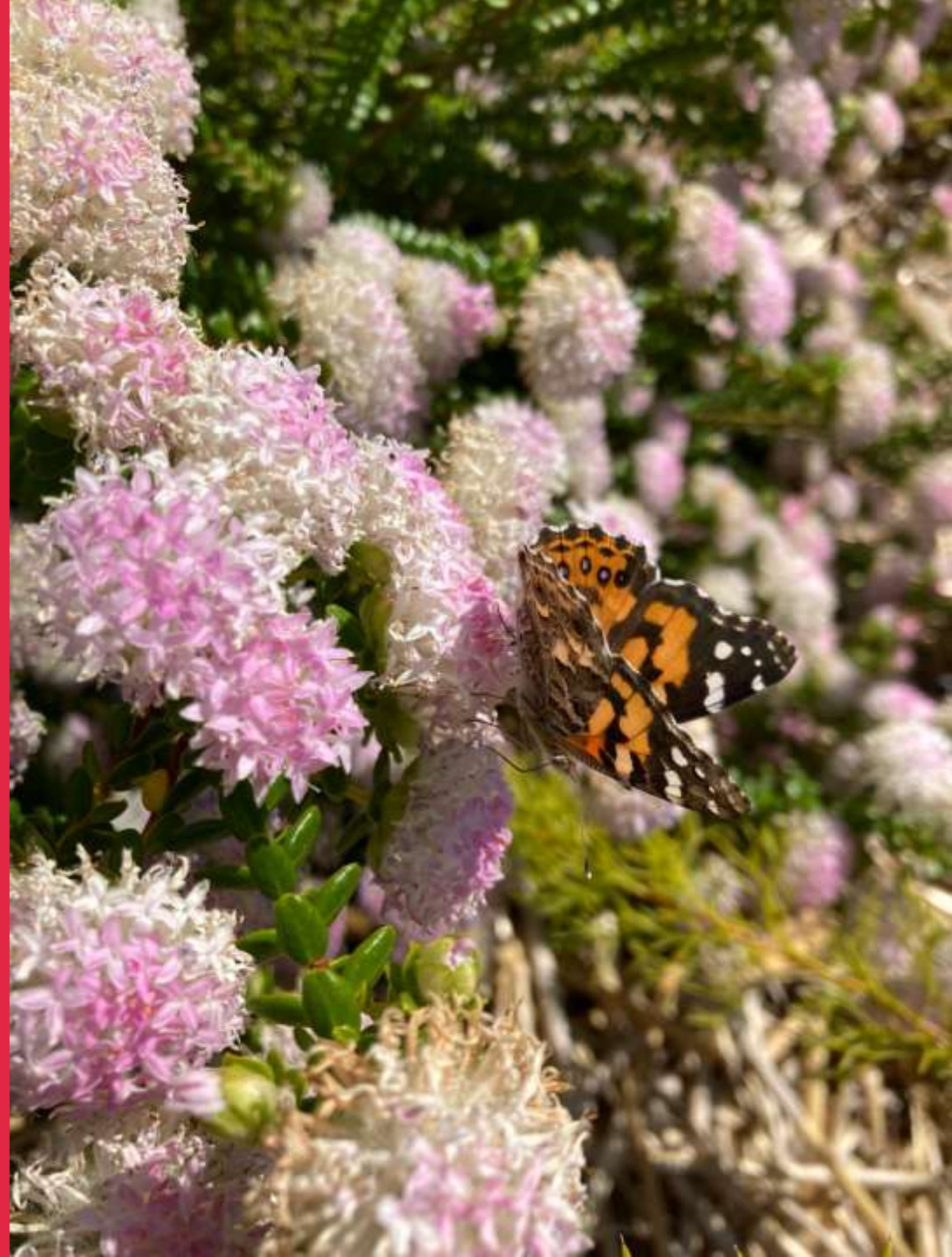
Murdoch University | Harry Butler Institute

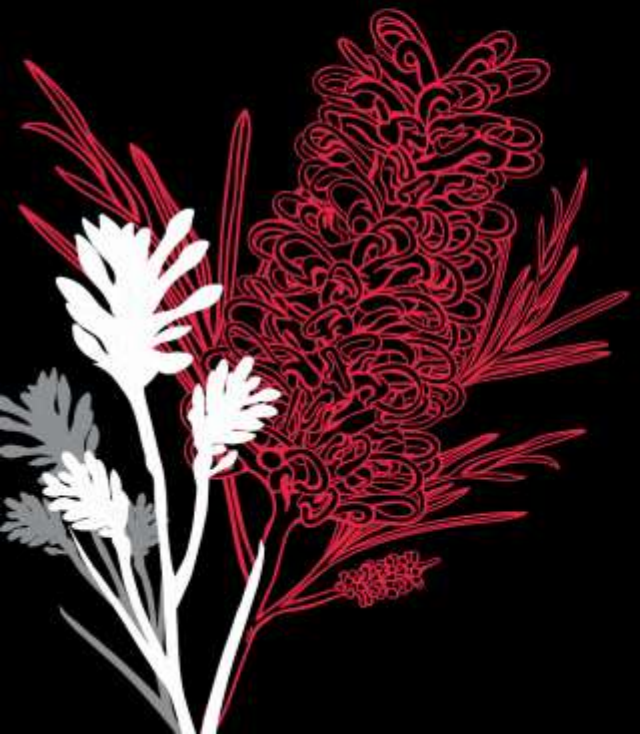
# Miyawaki Forest Program: Composting 101

Dr Grey Coupland



Murdoch University

# Acknowledgement of Country



We acknowledge that Murdoch University is situated on the lands of the Whadjuk and Binjareb Noongar people.

We pay our respect to their enduring and dynamic culture and the leadership of Noongar elders past and present.

The boodjar (country) on which Murdoch University is located has for thousands of years, been a place of learning. We at Murdoch University are proud to continue this long tradition.

CRICOS Provider Code: 00125J

Free your think

# Murdoch University Miyawaki Forest Program

UNESCO GREEN CITIZENS
A GLOBAL VOICE FOR LOCAL ACTORS OF CHANGE

## Research Program

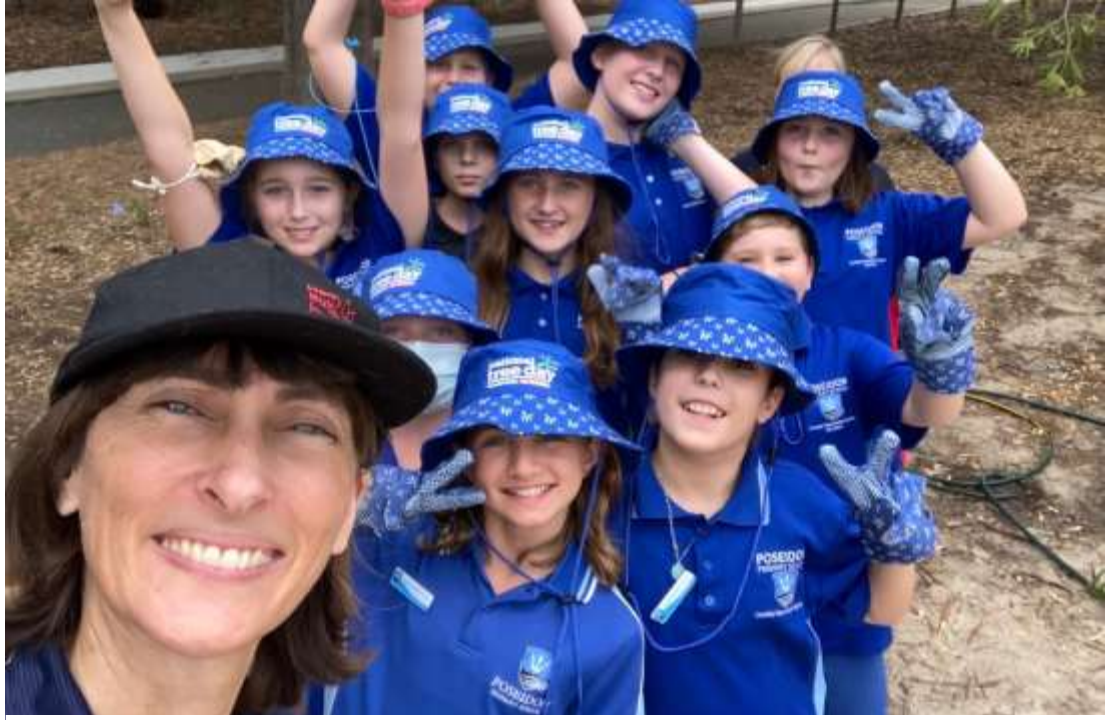
- Assessing how Miyawaki method can be applied and perform under Australian conditions
- Adapting methodology to Australia's unique environment and species

## Outreach Program

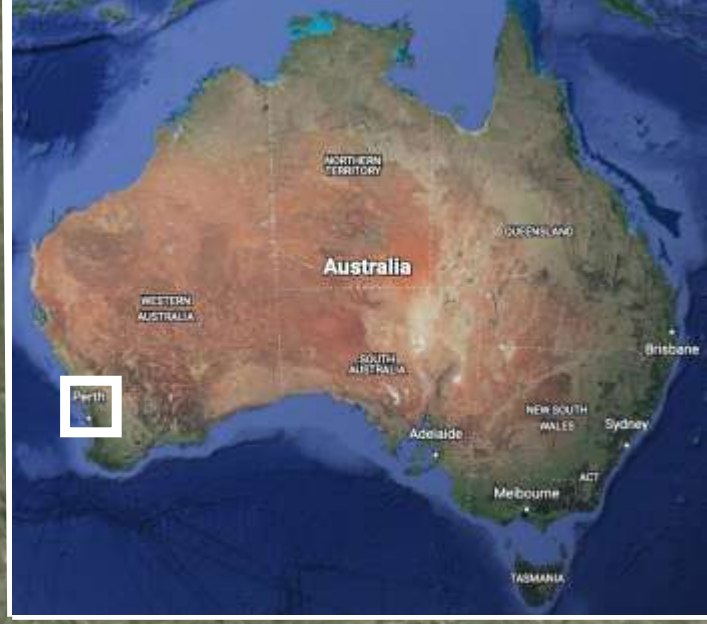
- School STEM outreach program
- Students become citizen scientists: planting and monitoring own forest
- UNESCO 'Green Citizen' listed program – one of 150 globally

# Miyawaki Forest Outreach Program

- **17 schools** in Perth metropolitan area
- **1 forest** in collaboration Western Australian Department of Education - ‘Bush Classroom’
- **1 regional community forest** in Western Australian wheatbelt area
- **Over 4,900** students involved



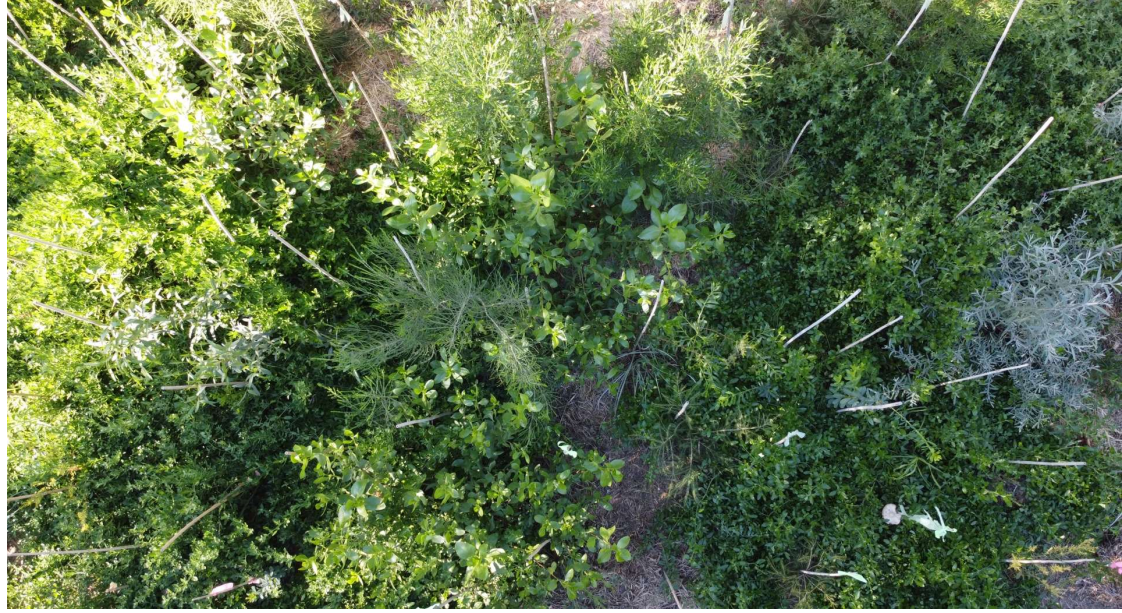
# Location of forests in the program

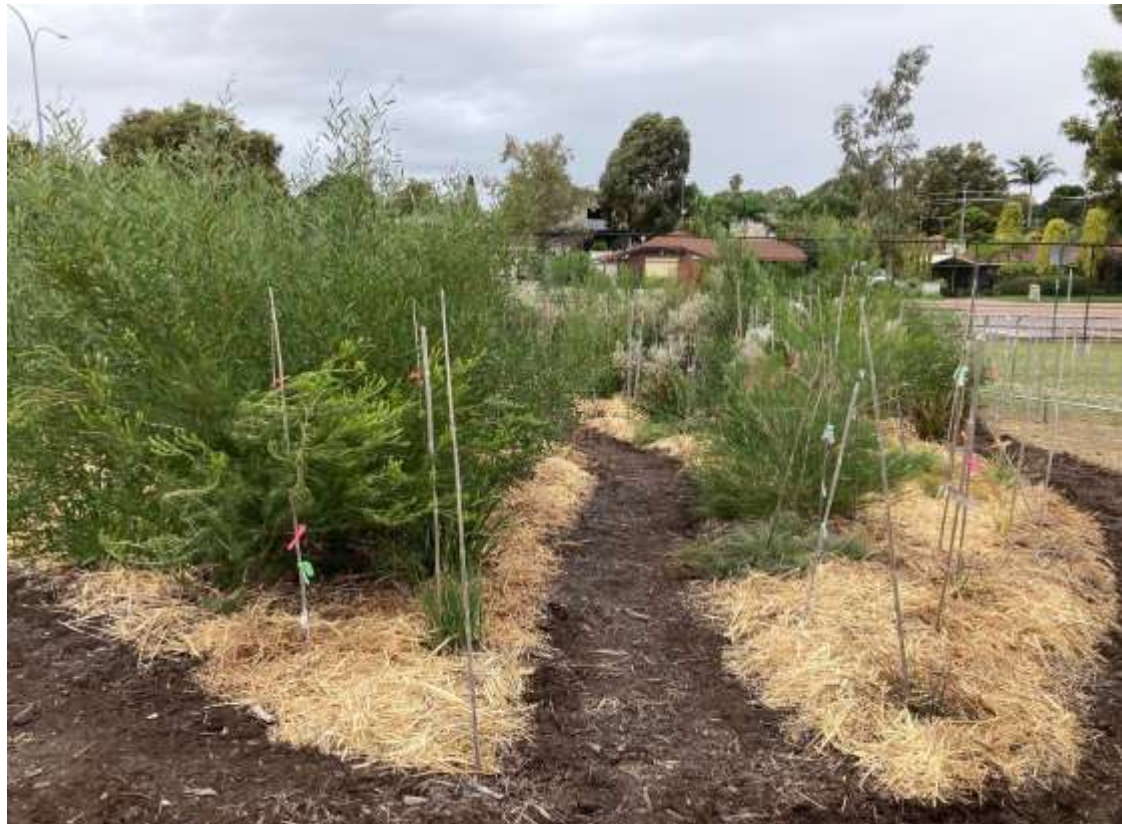



Restoring endangered Banksia woodland community across the Perth metropolitan region, Western Australia

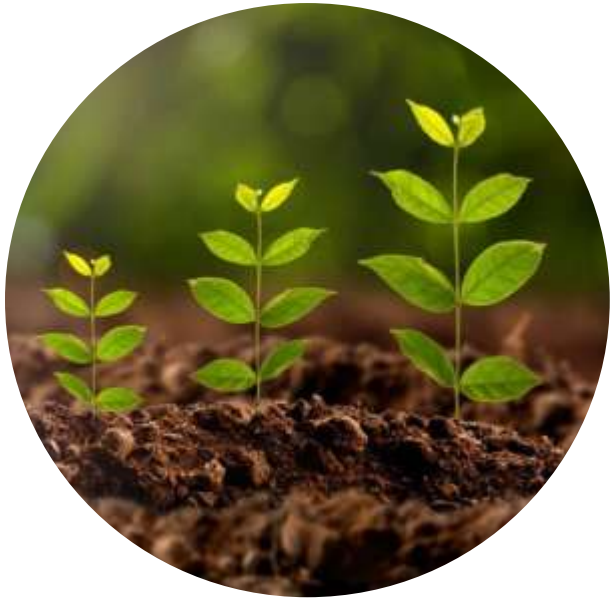
# What are Miyawaki forests?

- Small wilderness reflecting the natural system
- Species composition informed by botanical survey of local remnant vegetation – Potential Natural Vegetation
  - Species endemic to the area and in specific proportions to reflect the natural system
- 3 to 5 plants per $m^2$
- Soil remediation
  - Use locally available organic material
  - Or, donor soil from the natural system



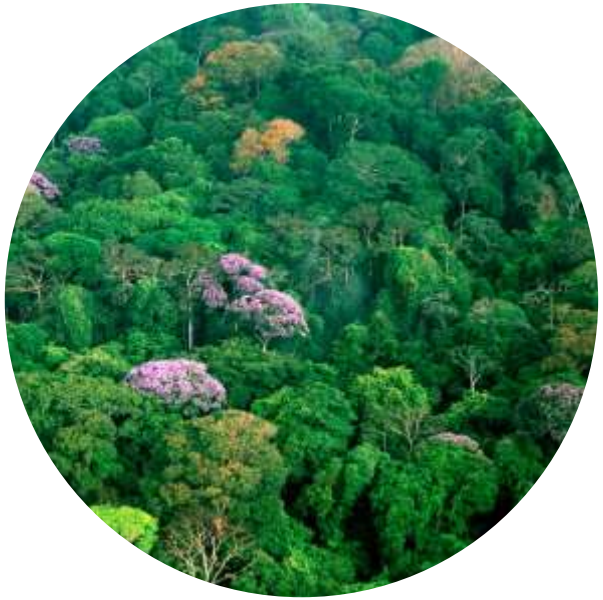


# Current paradigm regarding Miyawaki forests compared to traditional greening and reforestation practices:

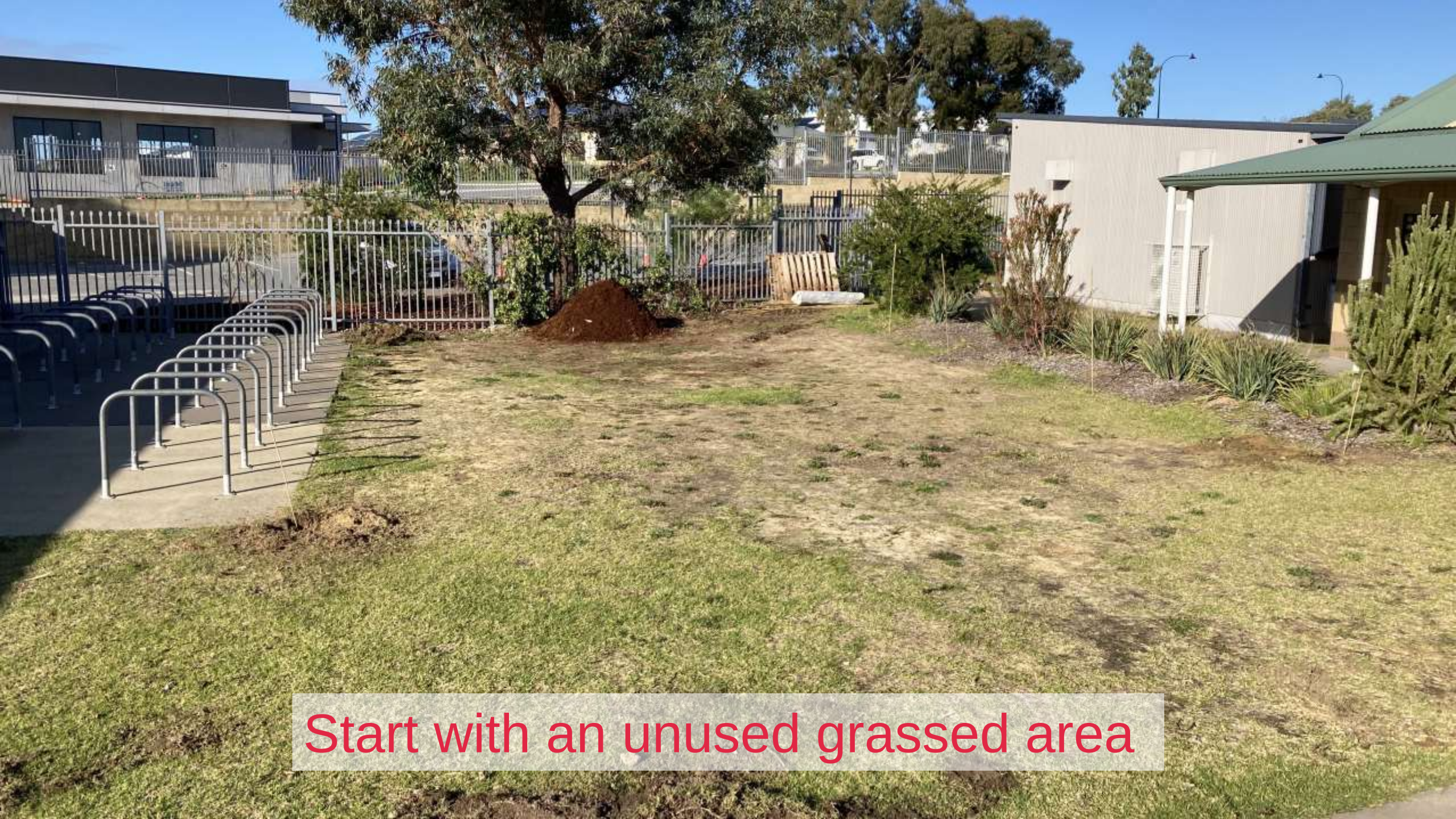


**mature up to 10 times faster**

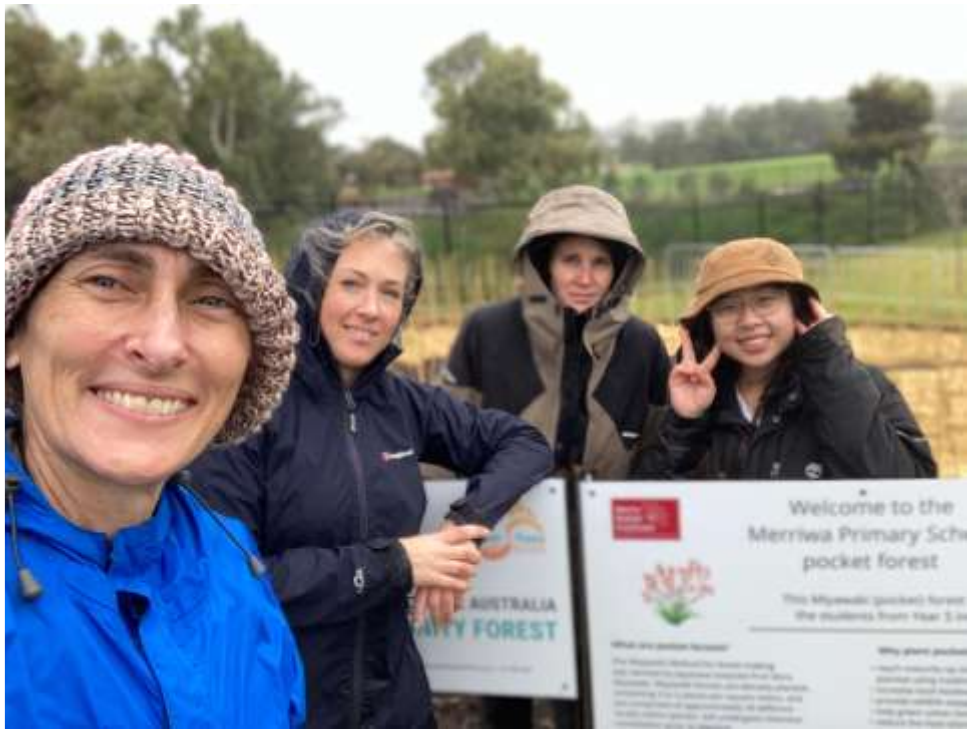
**up to 18 times more biodiverse**



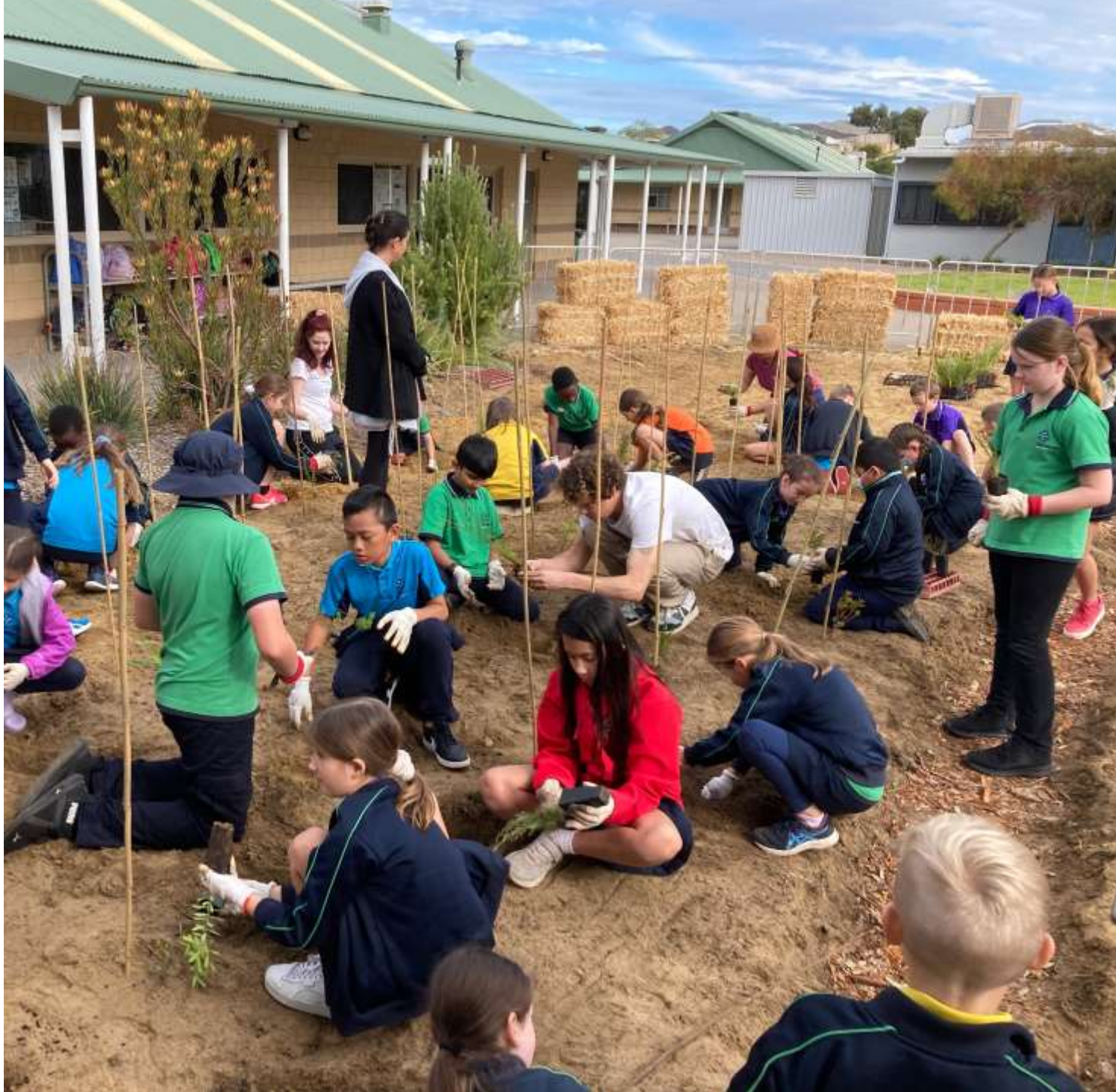
**up to 10 times denser**


Start with an unused grassed area

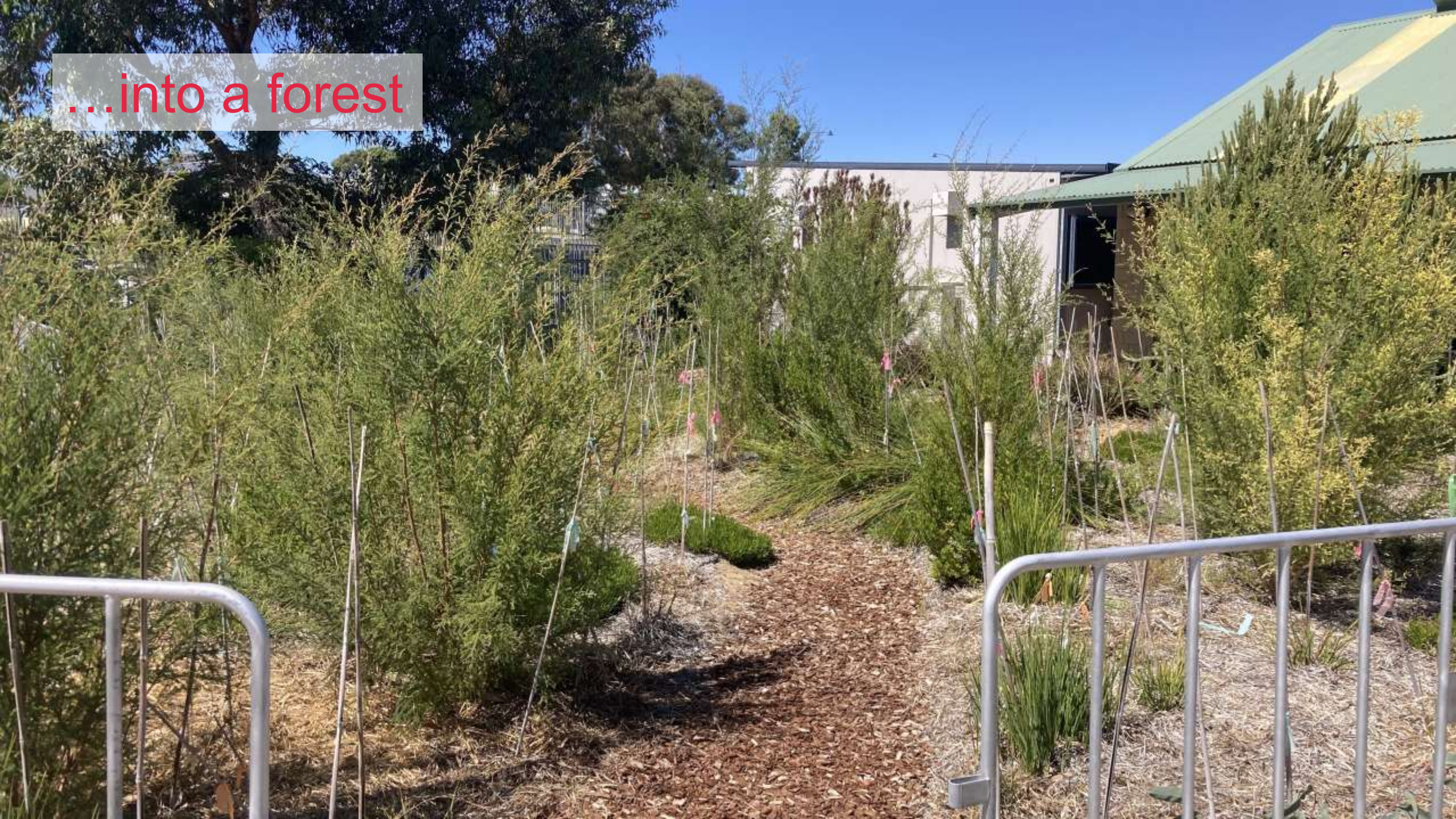

# Prepare the site and soil



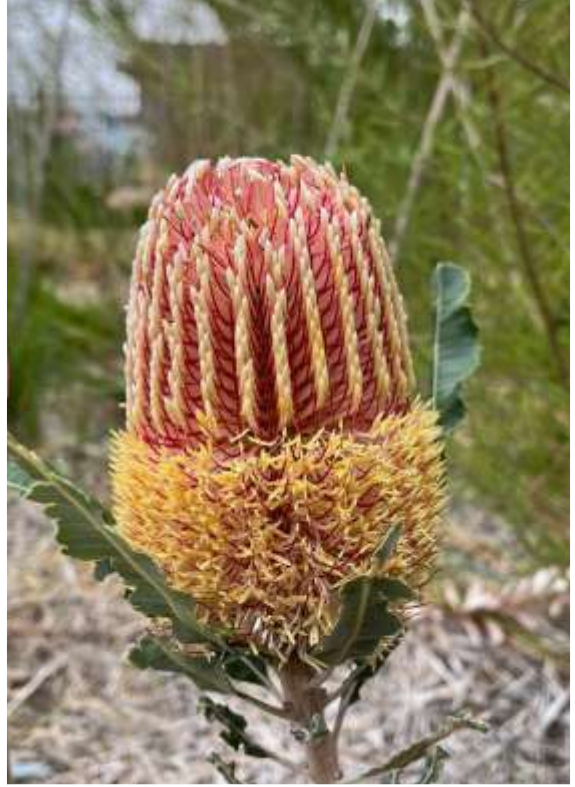
# Build the forest

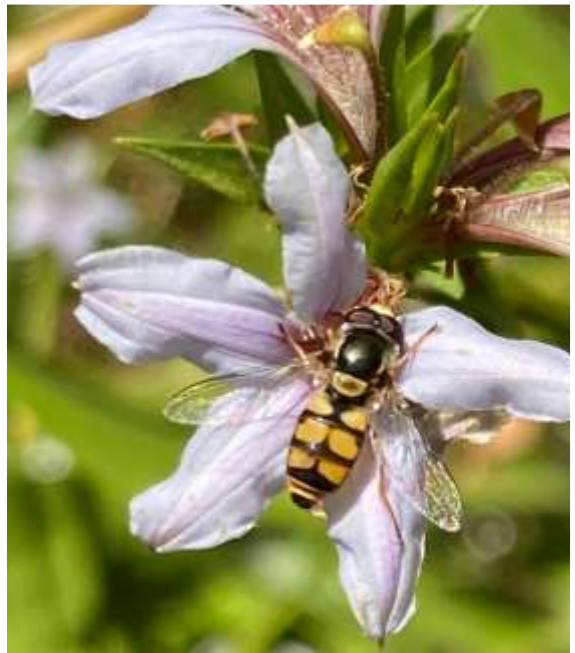


# Transforming the area…


…into a forest

…with all the benefits, in a short space of time





# Miyawaki Forest Outreach Program

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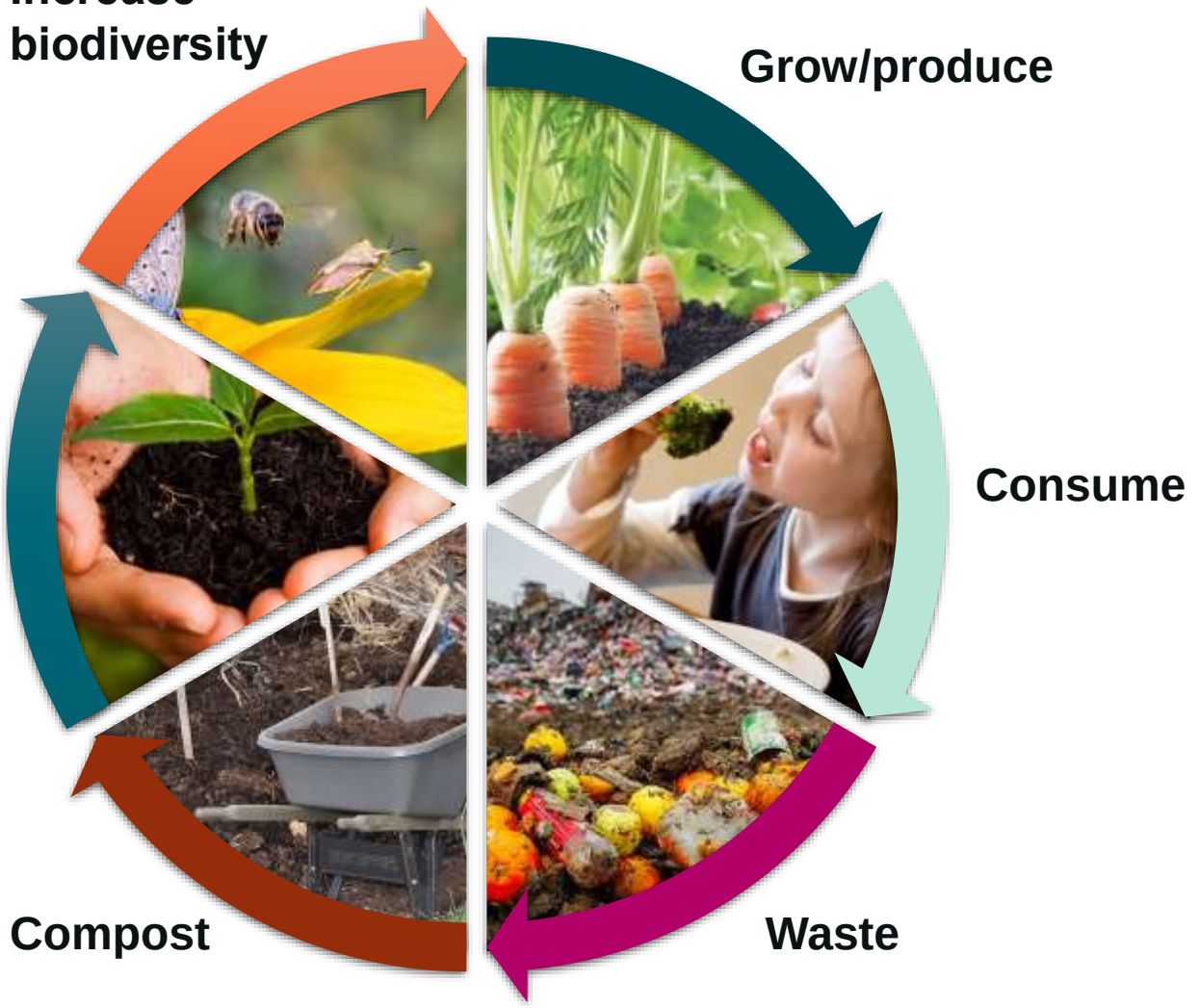
Miyawaki Forest school program
= alternate paradigm for society
based on a **circular model**




Forest making = community participation and ownership with **tangible outcomes**

# Miyawaki Forest Program: community participation and ownership, with tangible outcomes

**Local business participation**

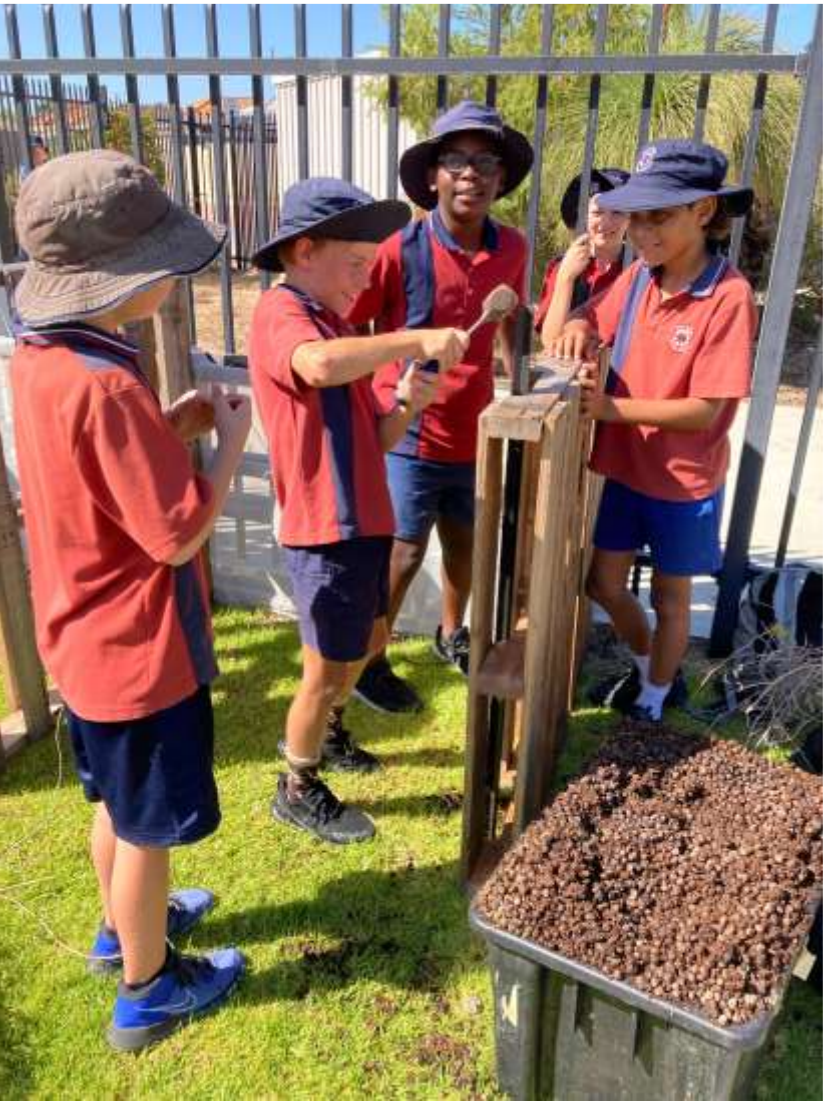


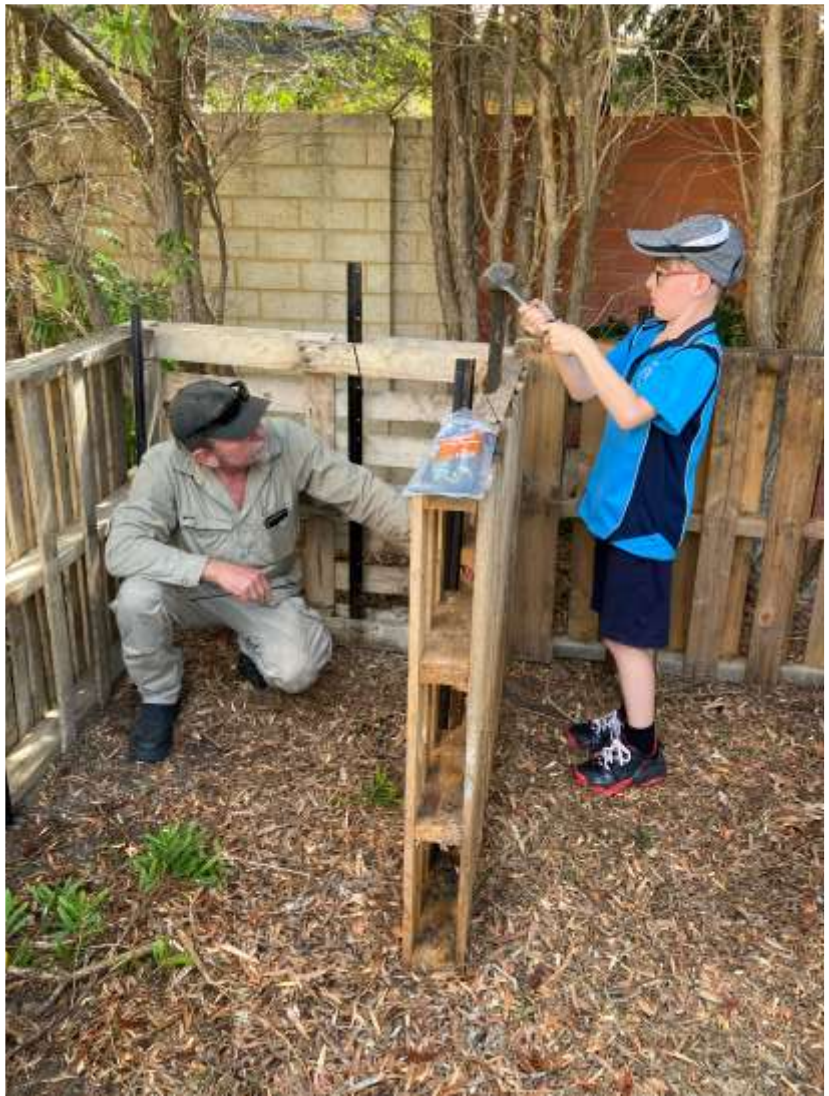

Use of food waste as part of Miyawaki Forest Program

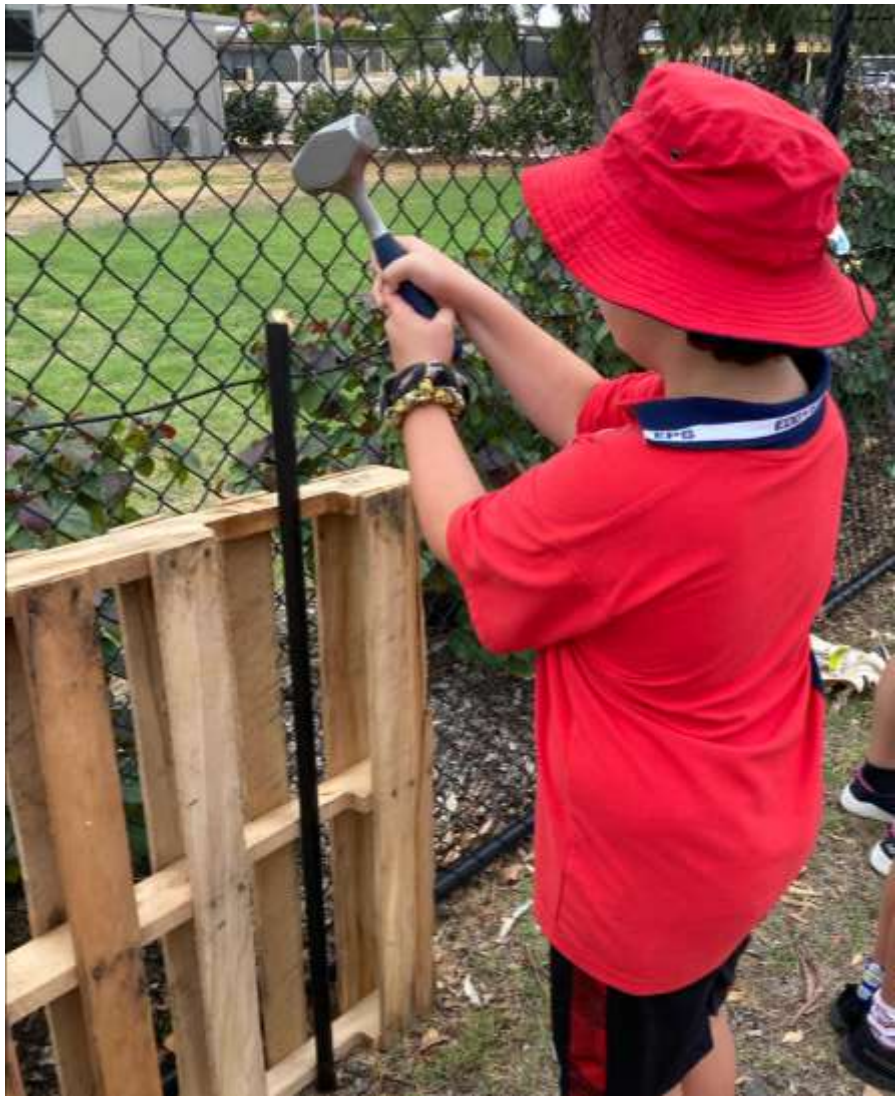
- reduces landfill and carbon emissions

# Creating a simple composting system

## 1. The system

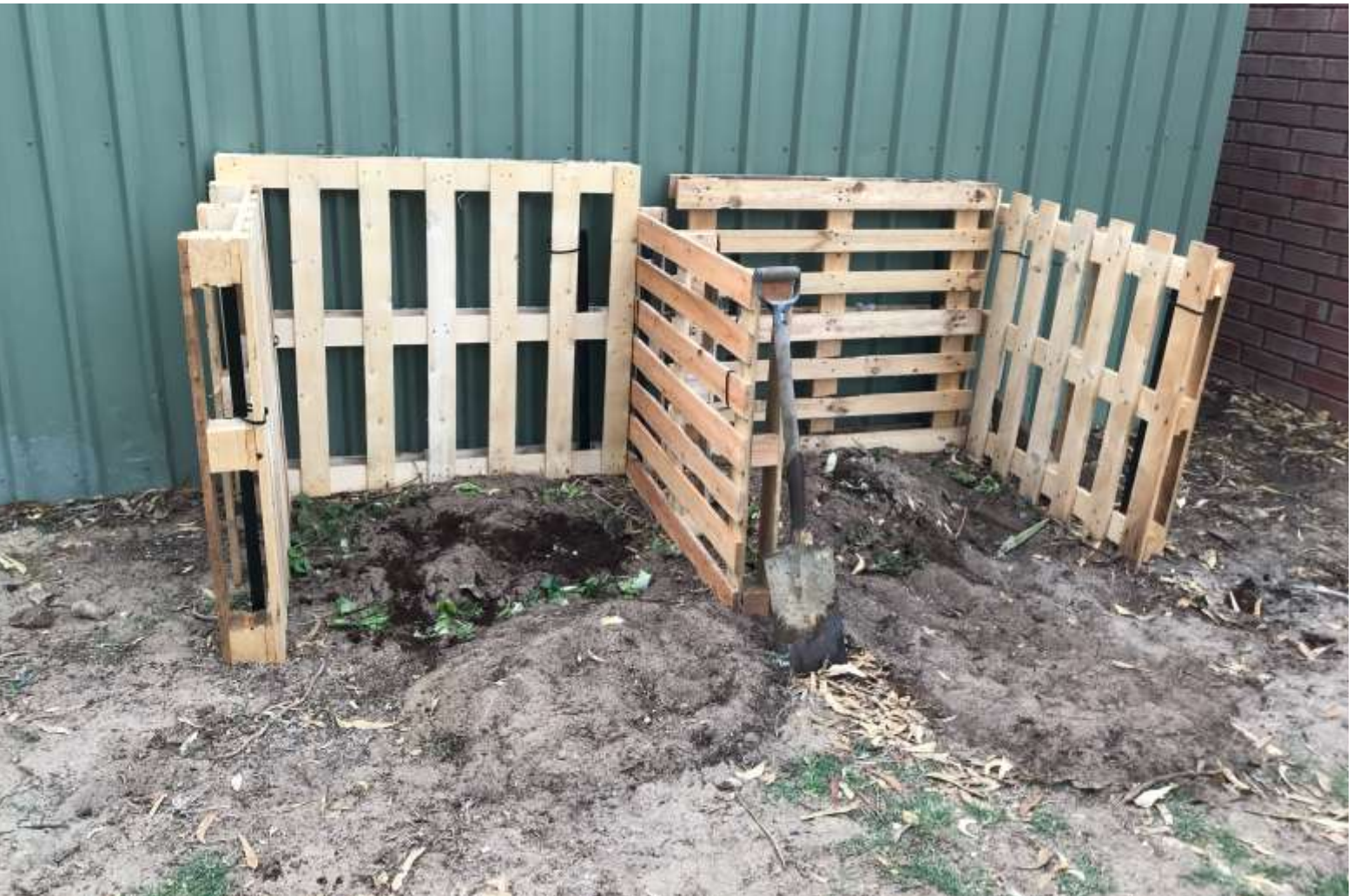


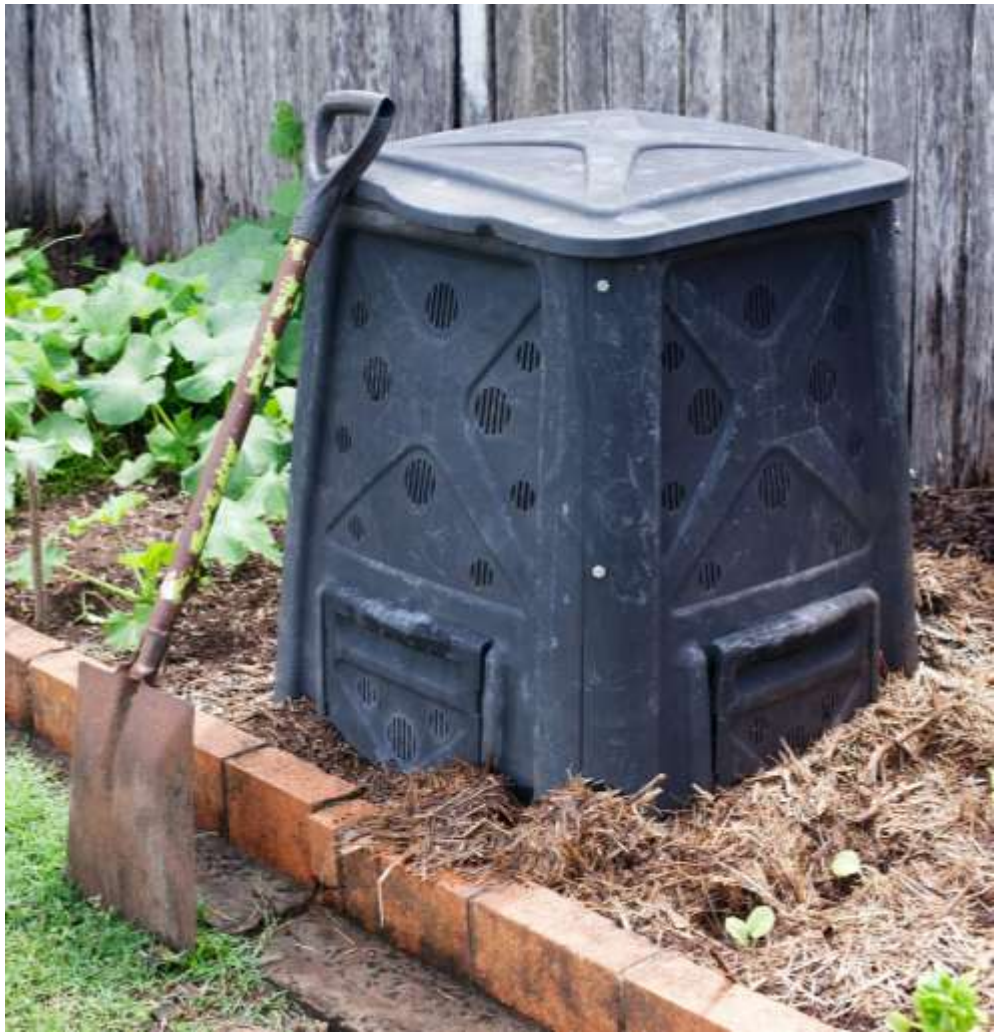




# Creating a simple composting system

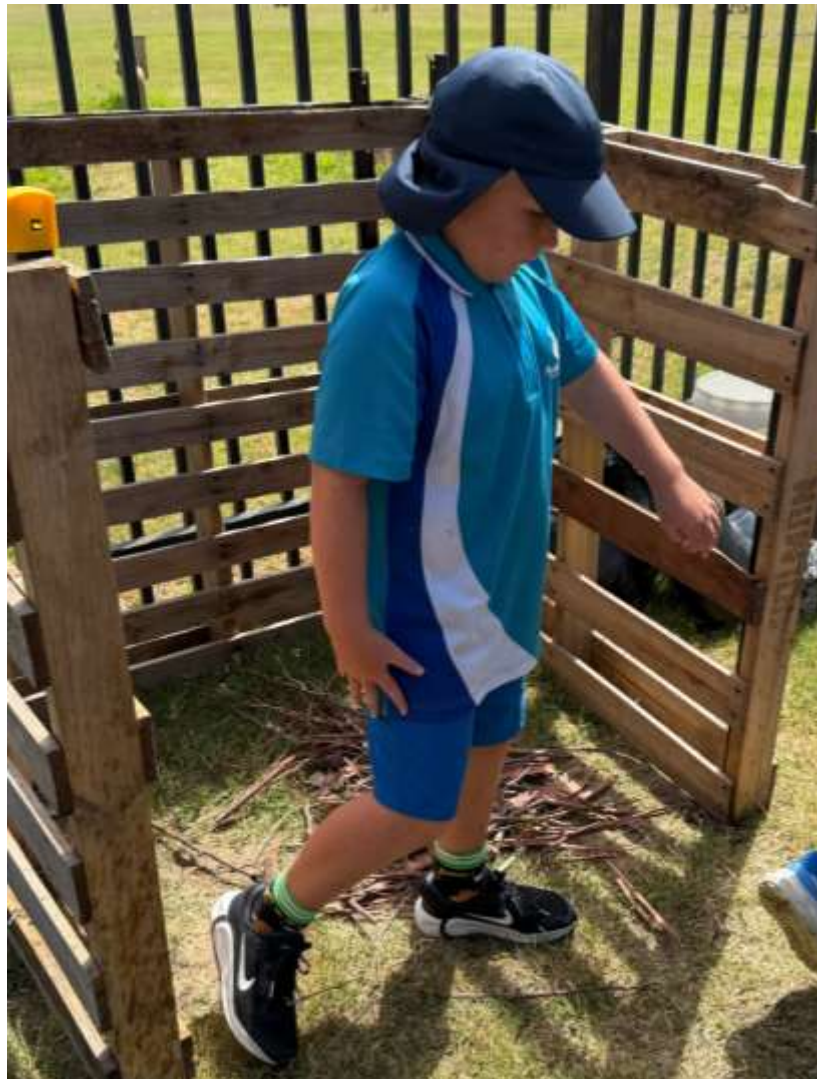
## 1. The system





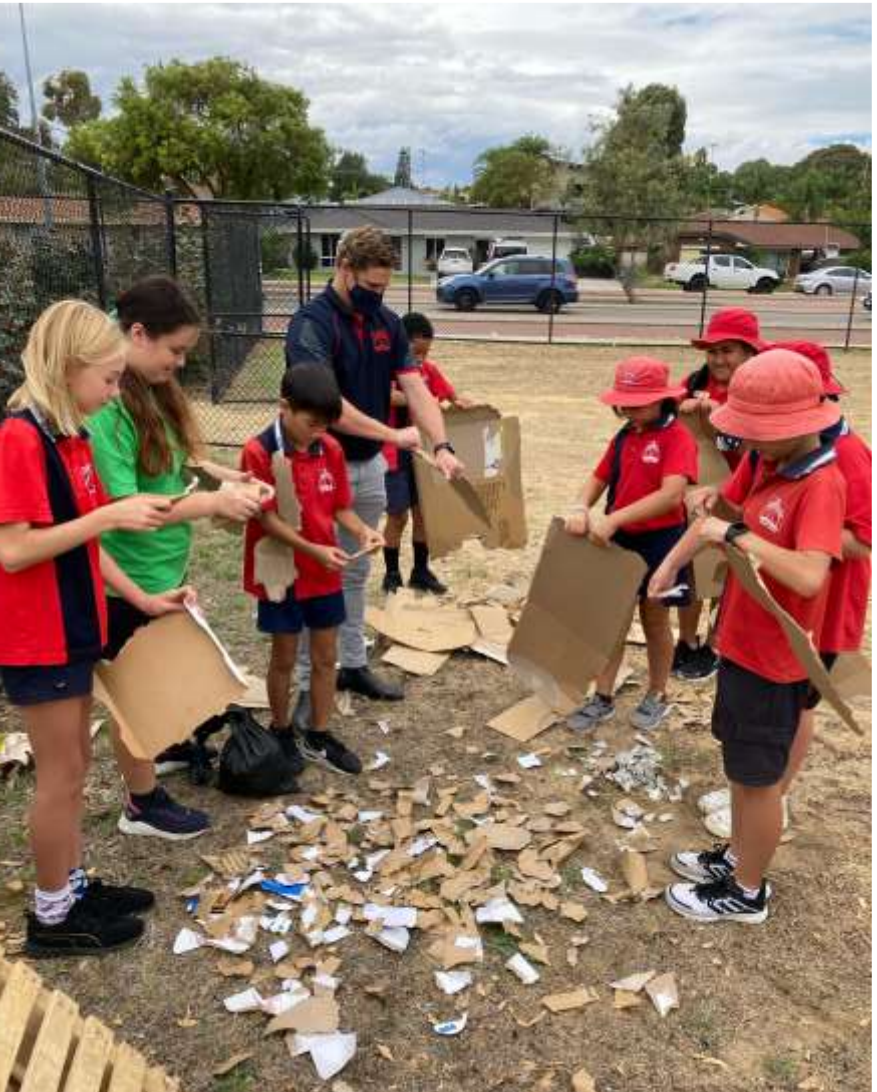
# Creating a simple composting system

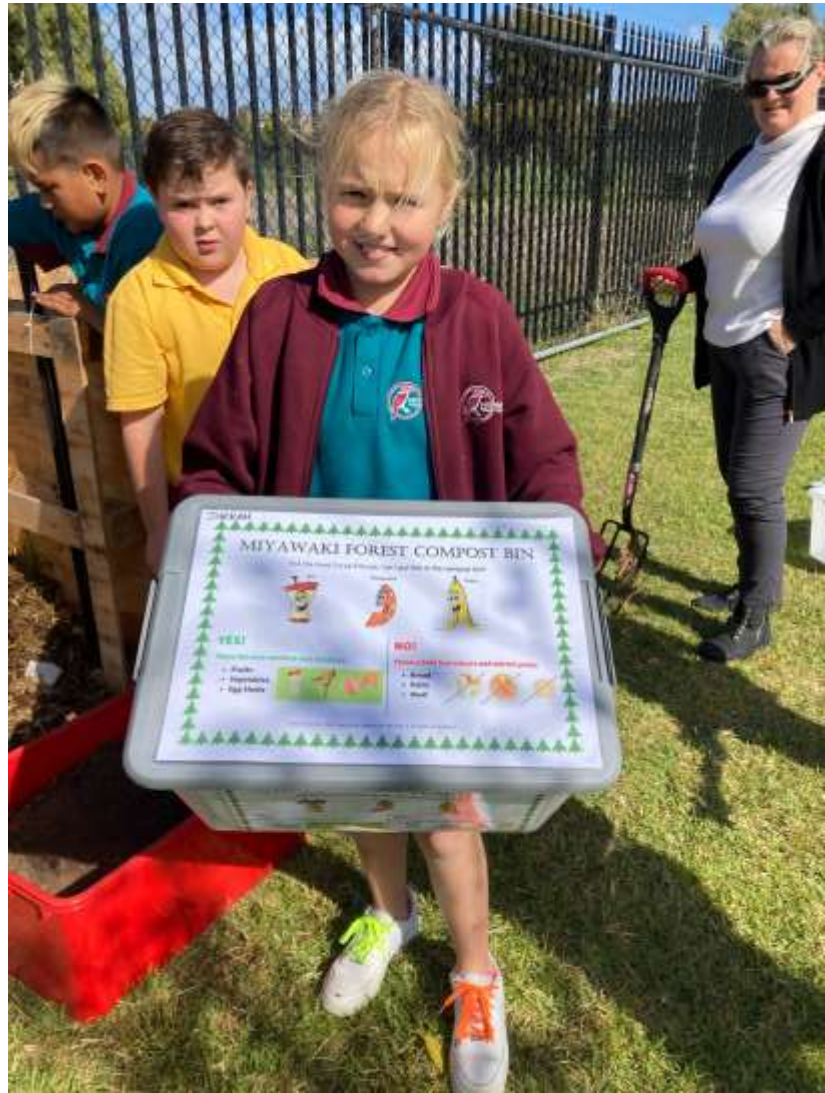
## 2. The base layer



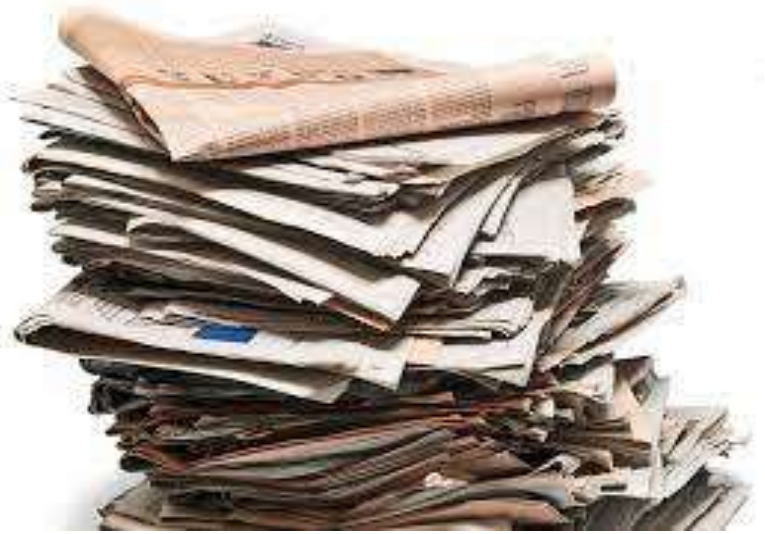
# Creating a simple composting system

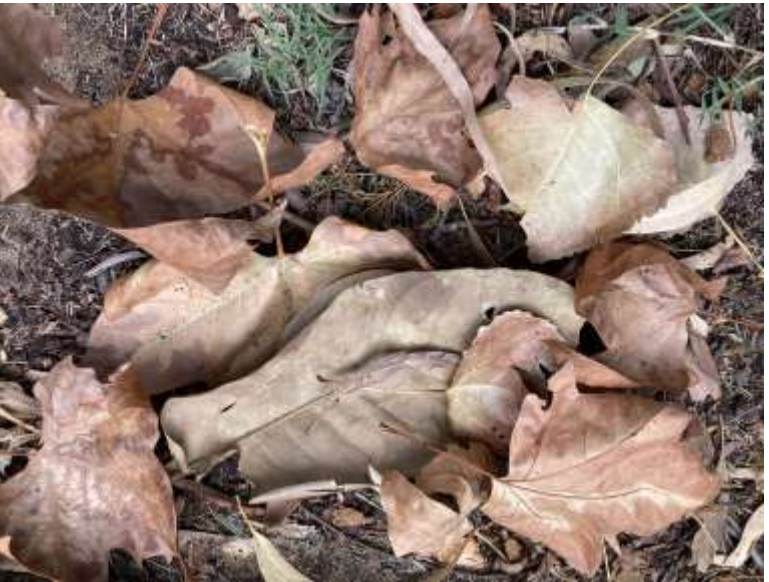
## 3. The organic materials



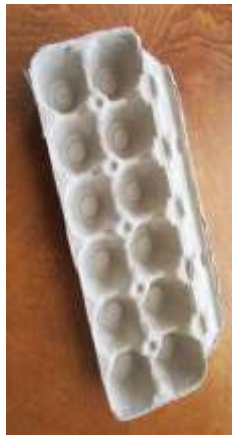


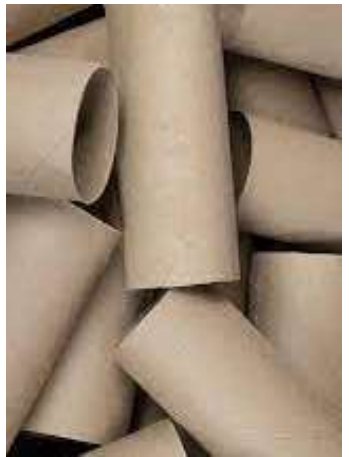
# What should go into your compost?



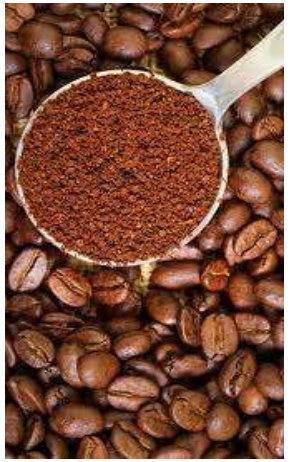


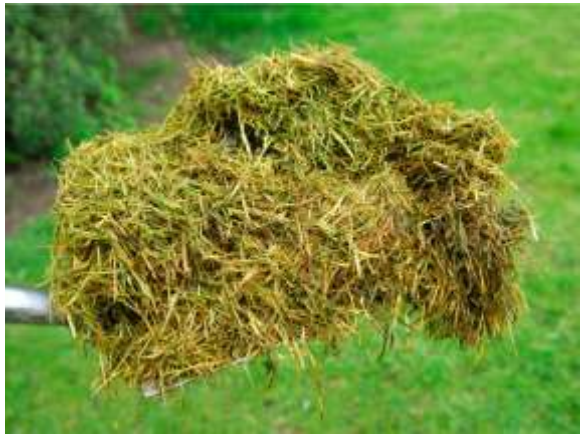
## Carbon ‘brown’ waste
**60%**





## Nitrogen ‘green’ waste
**40%**



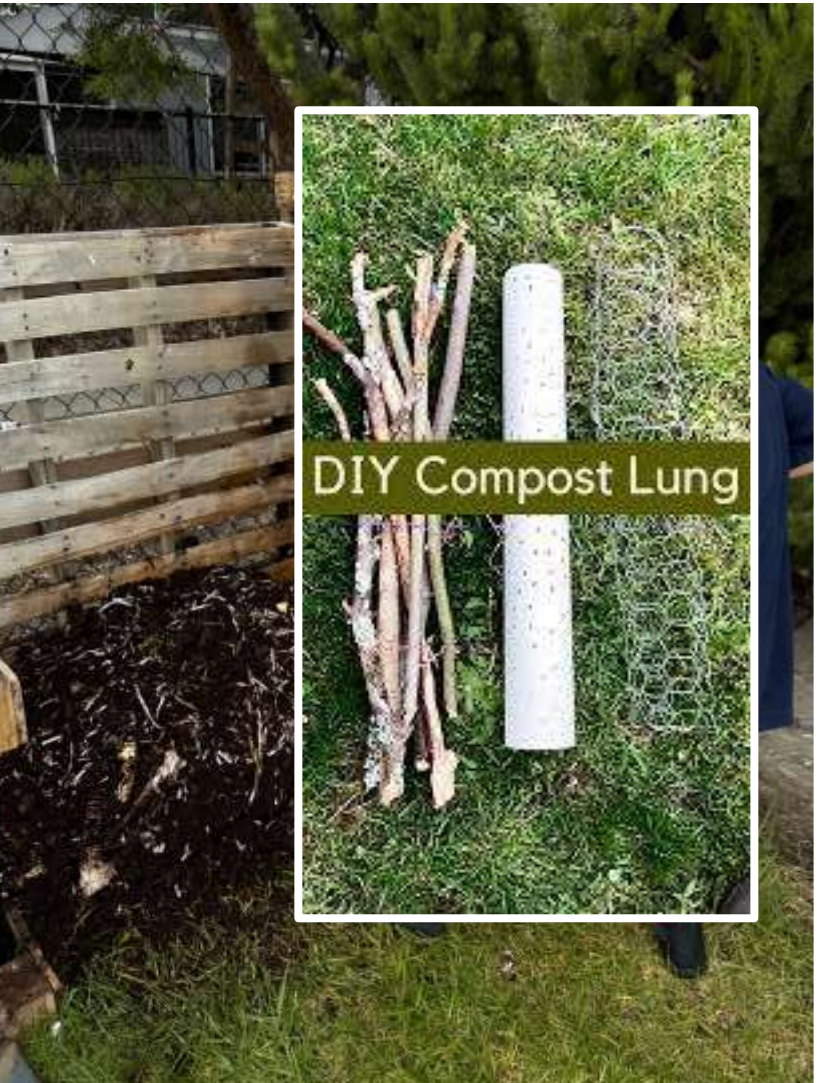


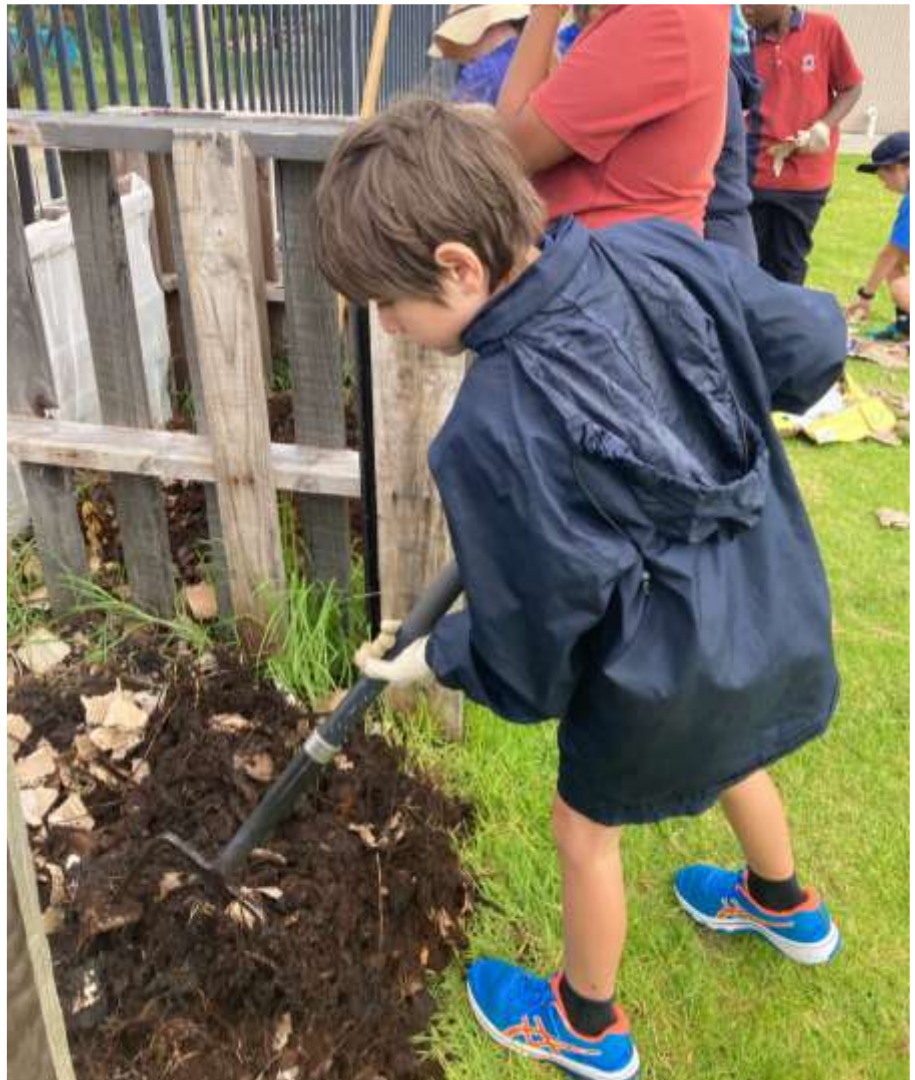
# Creating a simple composting system

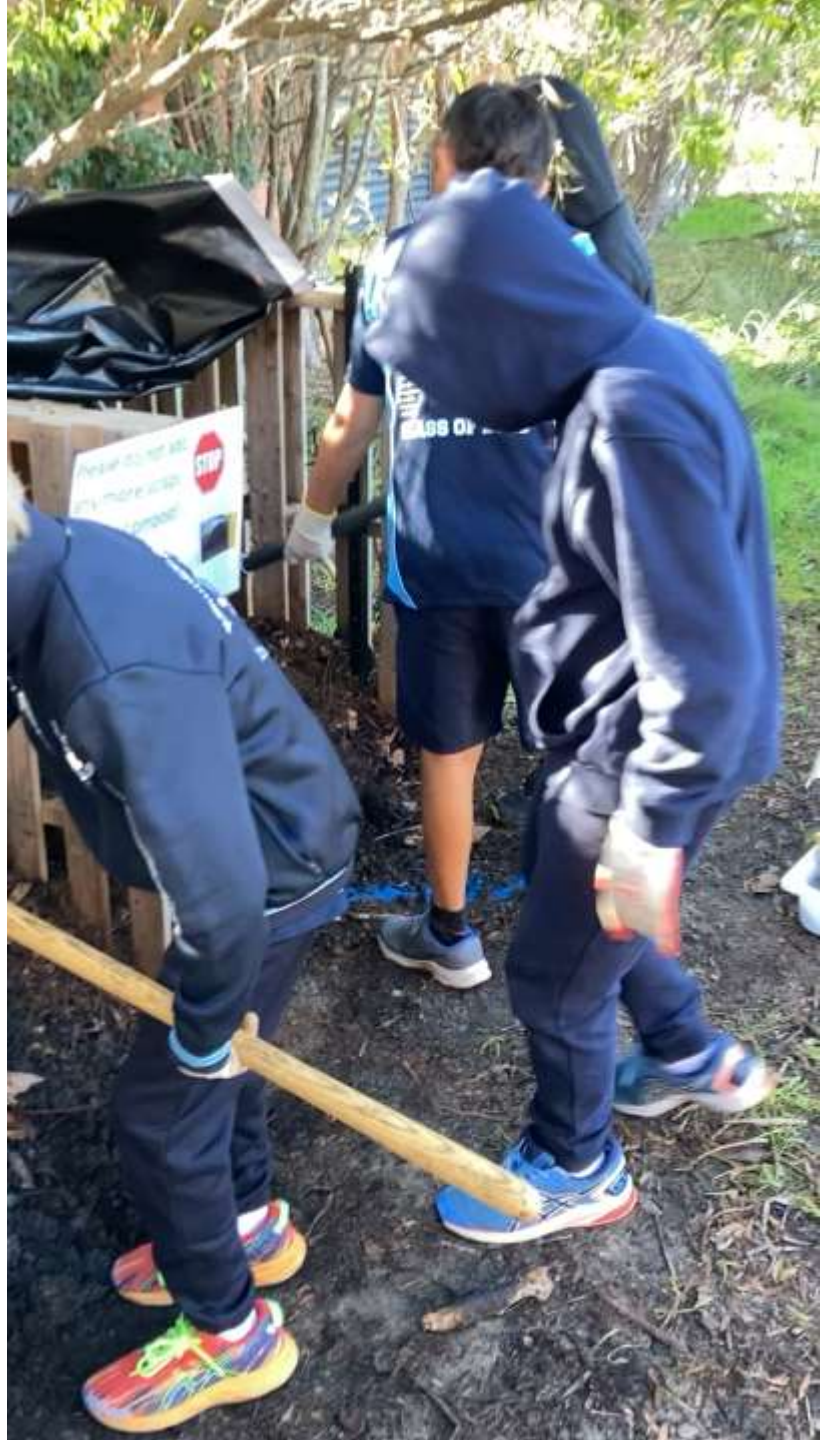
## 3. The organic materials

# Creating a simple composting system

## 4. Maintenance





# Caring for your compost

Break up your cardboard and food waste into small pieces

Turn your compost often to add oxygen to the pile and mix materials

Add air by wiggling a garden stake through your compost

Add water to make sure compost does not dry out

# Creating a simple composting system

## 4. The maintenance

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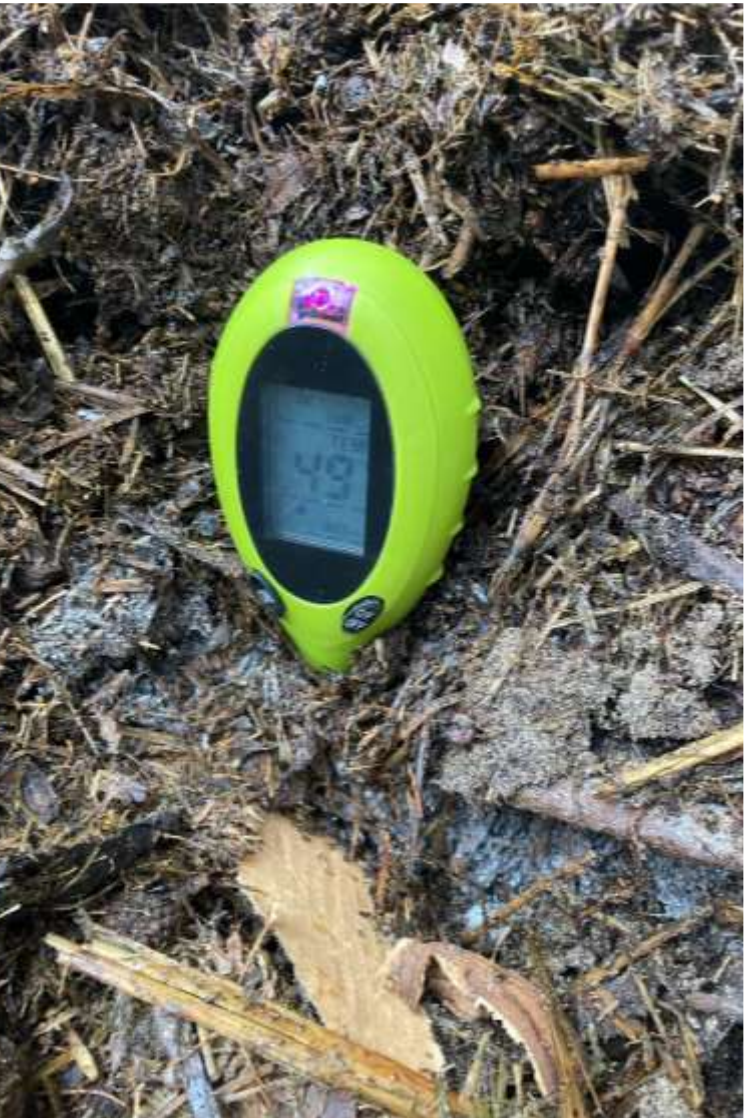
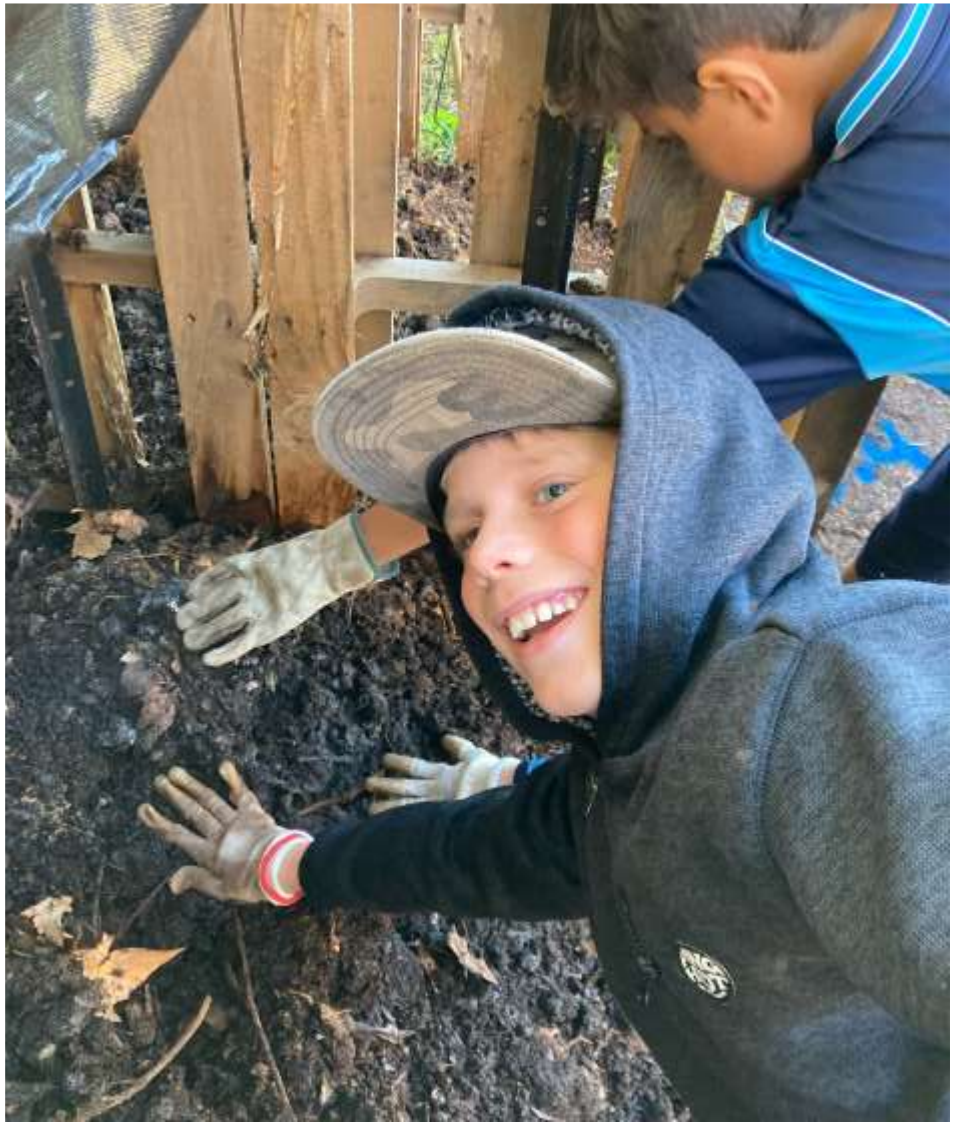
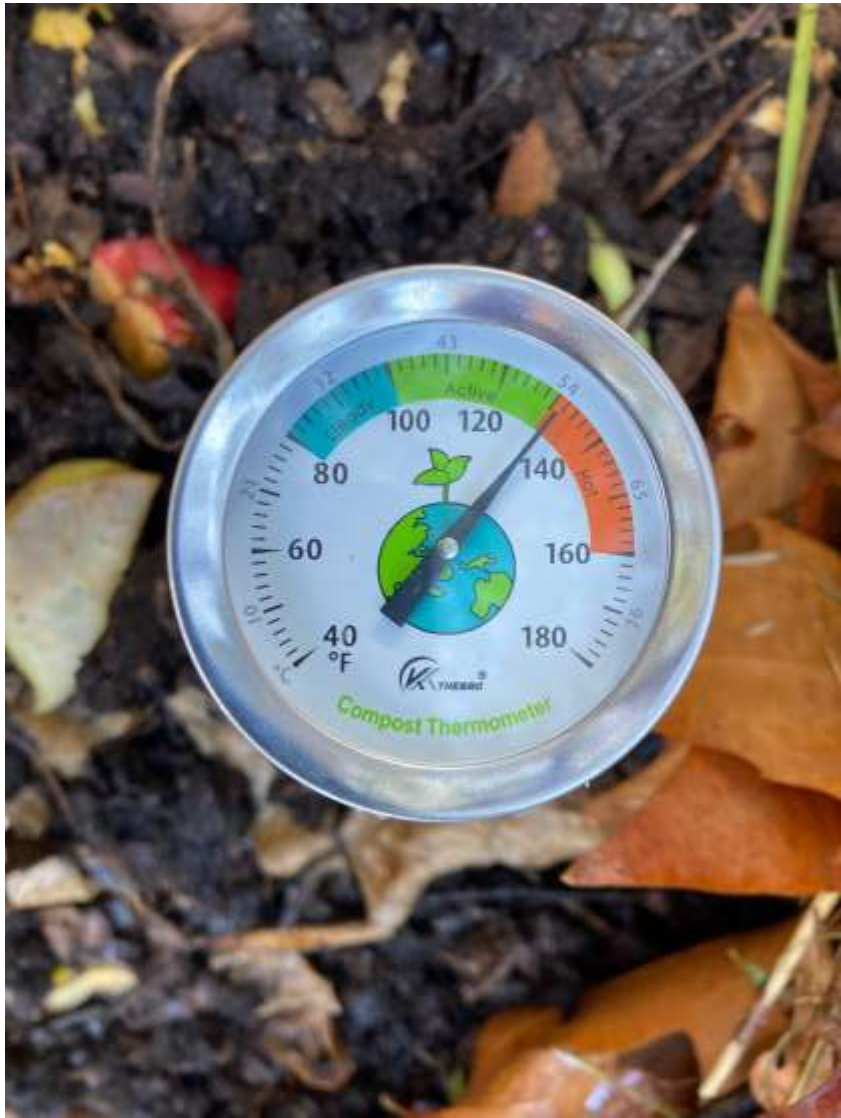
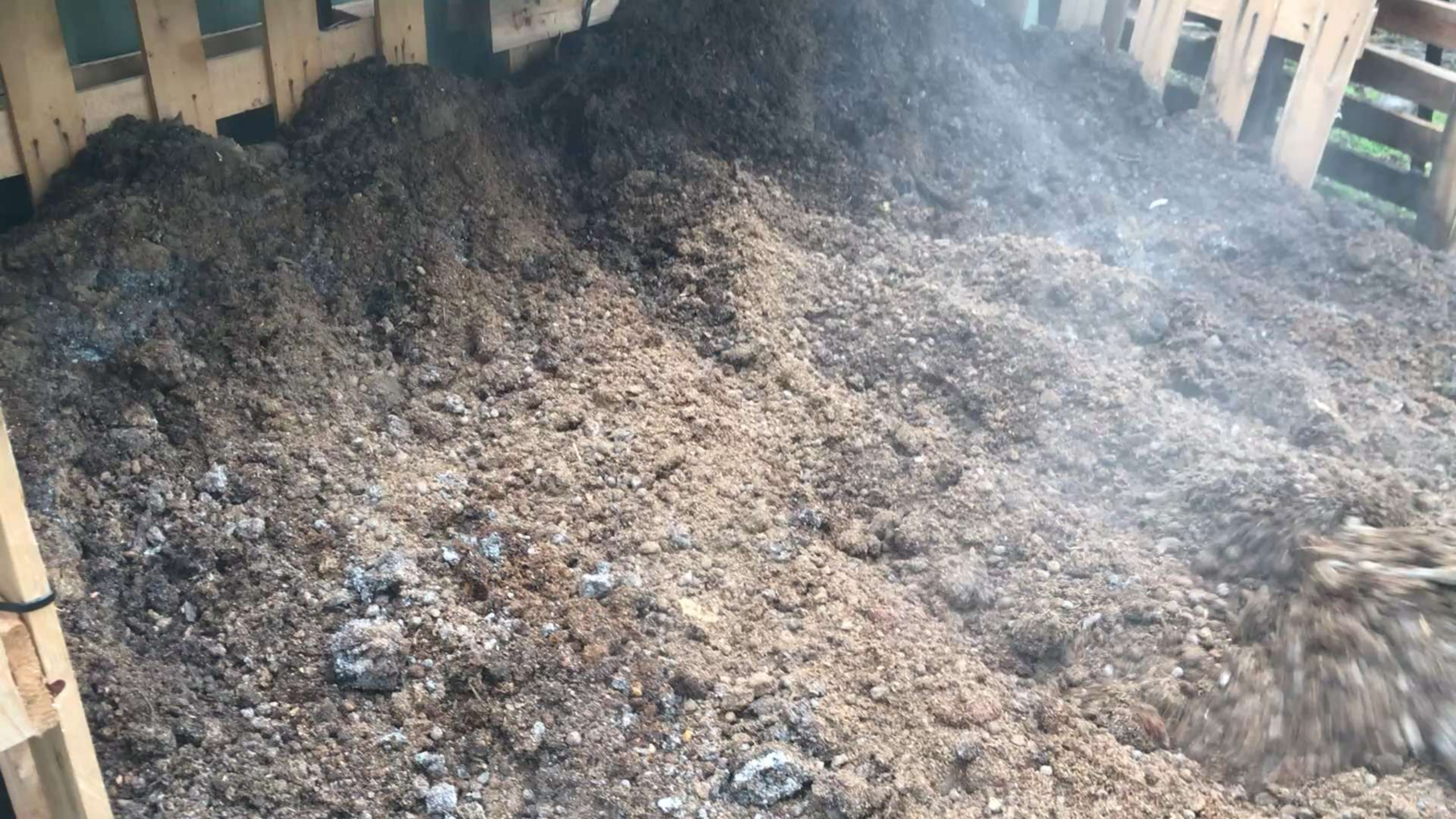
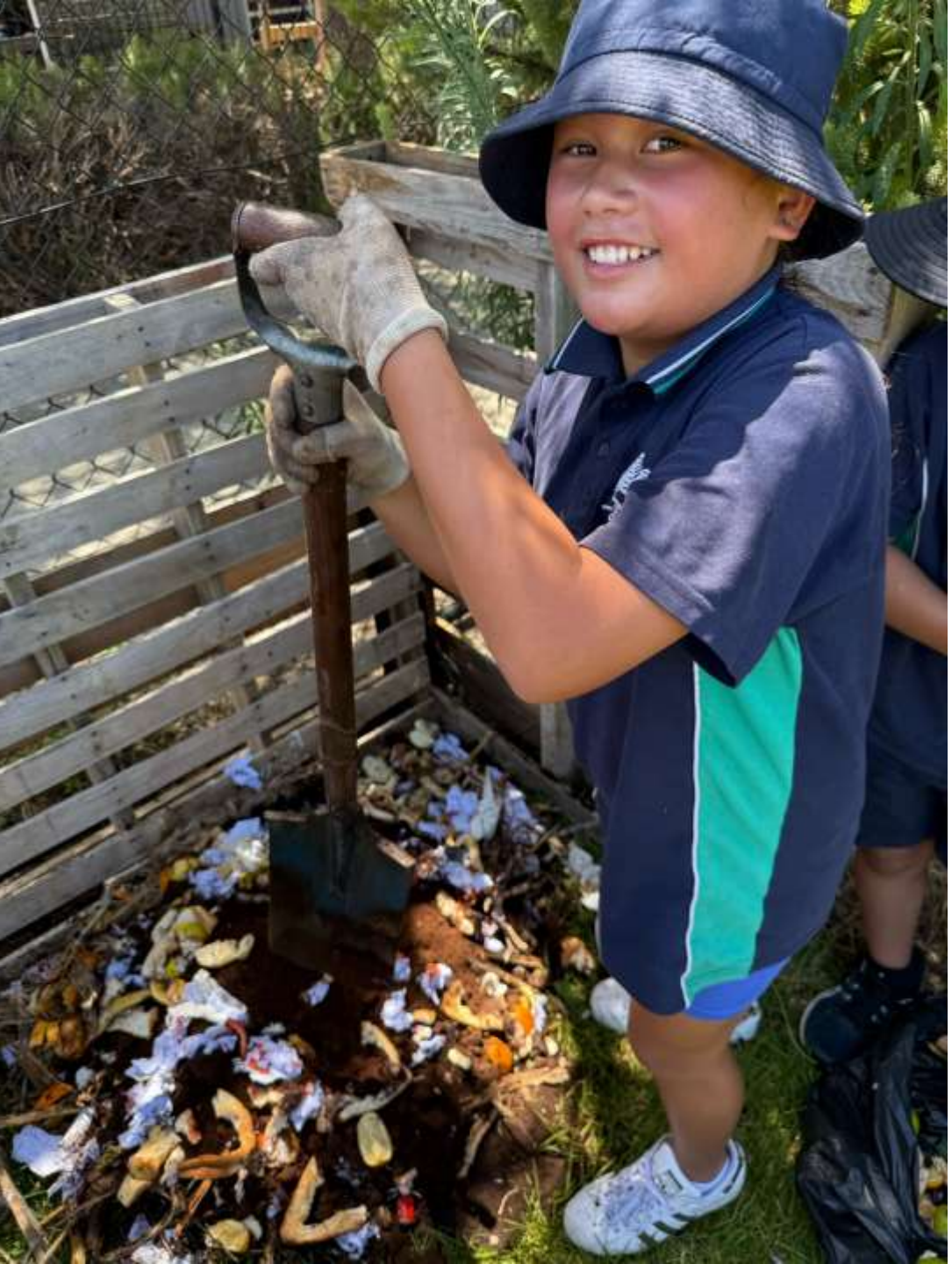










# Compost trouble shooting

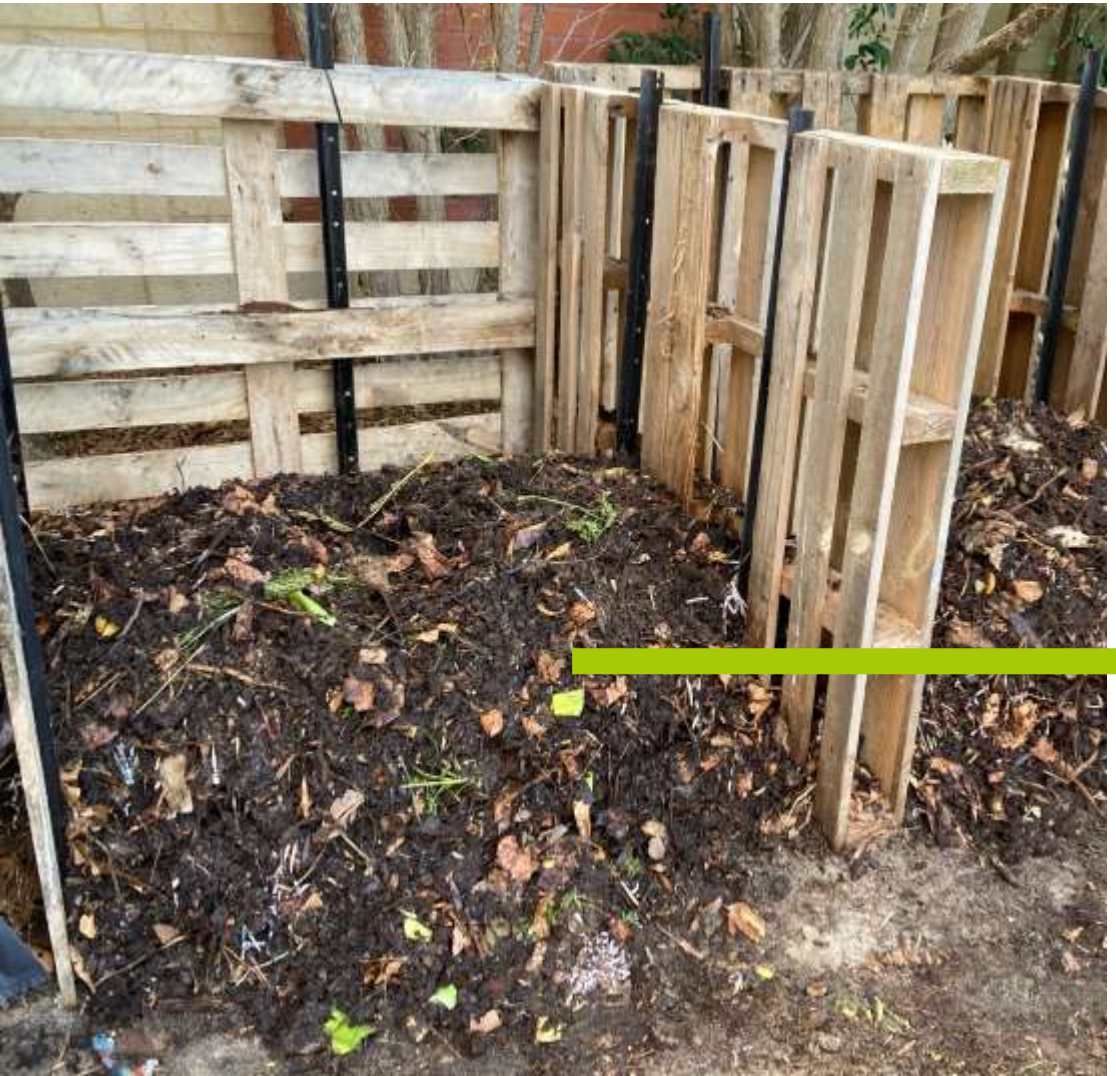
| Problem | | Solution |
|---|---|---|
|  | Smelly compost<br>(rotten eggs = sulphur) | • Compost has become anaerobic<br>• Compost too wet so allow compost to dry out<br>• Add ‘brown’ material to soak up the moisture<br>• Turn the compost frequently |
|  | Ants have moved in | • Compost too dry so add water<br>• Turn your compost more frequently<br>• Add some eggshells |
|  | Flies have moved in | • Bury your food scraps under the organic matter<br>• Let your compost dry out a little |
|  | Rats and mice are running about | • Turning your compost more frequently<br>• Rodent proof your system with stainless steel mesh – works for enclosed compost system, hard in open system |

# Compost trouble shooting

| Problem | | Solution |
|---|---|---|
|  | Cockroaches have moved in | • System overloaded with waste<br>• Do not add meat and bread without processing first<br>• Add coffee grounds to increase the temperature<br>• Turn the compost more frequently |
|  | White ashy substance | • Early indication that compost is becoming anaerobic<br>• Turn the compost well to introduce oxygen |
|  | Compost not breaking down | • Check to see if compost is too dry – the middle area should be moist enough to squeeze out a drop of water<br>• Compost made from large prunings and scraps that are taking a long time to decompose – cut pieces into smaller sizes<br>• Compost too carbon heavy (‘brown’) - add some nitrogen (‘green’) material to reactivate the compost |

# Creating a simple composting system

## 4. The outcome




# Statewide Services Forest

www.pocketforestswa.org

miyawakiforestwa

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where restoration, science and people connect