



PERMACULTURE PRACTICES

Permaculture

All levels



WATCH THE
MASTERCLASS



Students watch the *From Paddock to Plate Permaculture Practices Masterclass* (in the Masterclasses section of the Resources Library) to see real-life examples of best working practices.



The following practical projects provide an opportunity for students to learn about sustainable food systems and permaculture principles, while also engaging with their local community and contributing to environmental stewardship. The biggest outcomes will be creating healthy soil, reducing food waste, making compost, doing a garden health check, and creating an edible school garden that you and all the teachers and students at your school will be able to reap the benefits from for years to come.

www.frompaddocktoplate.com.au/program/

Australian Curriculum Links

English

- **Year 3** Expressing and developing ideas ACELA1483
- **Year 3** Texts in context ACELY1675
- **Year 4** Language for interaction ACELA1489
- **Year 5** Texts in context ACELY1698
- **Year 6** Expressing and developing ideas ACELA1525
- **Year 8** Interacting with others ACELY1730

Identify the effect on audiences of techniques, for example shot size, vertical camera angle and layout in picture books, advertisements and film segments

Identify the point of view in a text and suggest alternative points of view

Understand differences between the language of opinion and feeling and the language of factual reporting or recording

Show how ideas and points of view in texts are conveyed through the use of vocabulary, including idiomatic expressions, objective and subjective language, and that these can change according to context

Investigate how vocabulary choices, including evaluative language can express shades of meaning, feeling and opinion

Interpret the stated and implied meanings in spoken texts, and use evidence to support or challenge different perspectives



Permaculture Practices Practical Projects (continued)

<p>Mathematics</p>	<ul style="list-style-type: none"> • Year 6 Using units of measurement ACMMG138 / ACMMG139 • Year 8 Money and financial mathematics ACMNA189 • Year 8 Using units of measurement ACMMG195 	<p>Connect volume and capacity and their units of measurement</p> <p>Interpret and use timetables</p> <p>Solve problems involving profit and loss, with and without digital technologies</p> <p>Choose appropriate units of measurement for area and volume and convert from one unit to another</p>
<p>Science</p>	<ul style="list-style-type: none"> • Foundation Biological sciences ACSSU002 • Year 1 Biological sciences ACSSU017 • Year 1 Use and influence of science ACSHE022 • Year 2 Chemical sciences ACSSU031 • Year 2 Use and influence of science ACSHE035 • Year 3 Physical sciences ACSSU049 • Year 3 Use and influence of science ACSHE051 • Year 4 Biological sciences ACSSU073 • Year 4 Use and influence of science ACSHE062 • Year 4 Use and influence of science ACSHE083 • Year 9 Chemical sciences ACSSU179 	<p>Living things have basic needs, including food and water</p> <p>Living things have a variety of external features</p> <p>People use science in their daily lives, including when caring for their environment and living things</p> <p>Different materials can be combined for a particular purpose</p> <p>People use science in their daily lives, including when caring for their environment and living things</p> <p>Heat can be produced in many ways and can move from one object to another</p> <p>Science knowledge helps people to understand the effect of their actions</p> <p>Living things depend on each other and the environment to survive</p> <p>Science knowledge helps people to understand the effect of their actions</p> <p>Scientific knowledge is used to solve problems and inform personal and community decisions</p> <p>Chemical reactions, including combustion and the reactions of acids, are important in both non-living and living systems and involve energy transfer</p>
<p>Technologies</p>	<ul style="list-style-type: none"> • Year F & 2 Design and Technologies Knowledge and Understanding ACTDEK001 • Year 3 & 4 Design and Technologies Knowledge and Understanding ACTDEK012 • Year 5 & 6 Design and Technologies Knowledge and Understanding ACTDEK019 • Year 7 & 8 Design and Technologies Knowledge and Understanding ACTDEK029 	<p>Identify how people design and produce familiar products, services and environments and consider sustainability to meet personal and local community needs</p> <p>Investigate food and fibre production and food technologies used in modern and traditional societies</p> <p>Examine how people in design and technologies occupations address competing considerations, including sustainability in the design of products, services, and environments for current and future use</p> <p>Analyse how food and fibre are produced when designing managed environments and how these can become more sustainable</p>



Permaculture Practices Practical Projects (continued)**Activity: Perform a food waste audit at school**

PERFORM a food waste audit at school can help identify areas where food waste can be reduced and help promote more sustainable practices. It can also help save money and resources by reducing the amount of food waste generated.



“So a great activity for you to try at your school, if you haven’t yet, is to do a food waste audit. It’d be great to do an audit of all the waste in your school, so look at papers, cardboard, hard and soft plastics and so on. But to then carefully look at the food waste that is being produced at your school as well. If there are not chickens or compost happening already at your school, then these are two places you could direct your food waste into, to turn that waste into soil.

(11:15 – 11:45)



“Looking at the food scraps and categorising them into processed and unprocessed foods would be a great way to start. A lot of processed foods that are high in sugar, or come from a meat or dairy source, are usually the kinds of foods that will attract pests, for example mice and rats into your compost. They’re attracted to those foods and it is probably not ideal in a school situation. Start with just your fruit and vege scraps. Even if it was just composting things that you have from your fruit break, then you’d be on your way to getting started with your own compost building.

(11:46 – 12:31)



“As I said, chickens are another options as well. So if there was room at your school to have a chook pen set up, chickens are great as well at doing the same decomposition work there. In this case it is acting as their food source, before turning it into manure. Similarly we could use worms as well. So if you are a school with space constraints, and you don’t have enough room for setting up a chook pen, or if composting might be a bit tricky, then worm farming or fermaculture as it is known, is another way you could urn food scraps back into healthy soil.”

(12:31 – 13:13)



“One of the things that I do as a permaculture designer is when I am looking at a farm or garden I am looking at what other energies and useful resources that are around that aren’t being used to the best of their ability. Two things that are pretty common across all sites are sunlight and rainwater. When you are doing your audit and looking at your food scraps or looking at all sorts of waste across the school, another thing to do would be to look at how is sunlight and water captured and used in your school. Do you have solar panels? Do you have rainwater tanks?”

(18:00 – 18:40)



Permaculture Practices Practical Projects (continued)



Here are six steps to follow:

1. **Plan the audit:** Identify the scope of the audit, such as which areas of the school to audit, what time period to audit, and who will be involved in the audit.
2. **Collect data:** Record the weight or volume of all food waste generated in the selected areas during the chosen time period. This can be done using a scale or by estimating the volume of food waste generated. Also, categorize the waste into different types, such as uneaten food, spoiled food, or food packaging.
3. **Analyse and understand data:** Look at the data to identify patterns and trends. For example, is there a particular day of the week where more food waste is generated, or are there certain types of food that are frequently wasted?
4. **Identify areas for improvement:** Based on the analysis, identify areas where food waste can be reduced, such as improving portion control, reducing overproduction, or donating excess food to local charities.
5. **Implement changes:** Develop a plan to address the identified areas for improvement, such as educating students and staff on reducing food waste or implementing composting programs.
6. **Monitor progress:** After implementing changes, continue to monitor food waste to see if there is a reduction in the amount generated. This can be done through regular audits or by tracking waste data over time.

Activity: Create your own compost and worm farm



Listen to Will talk about safety considerations when attending to your compost, why you might see steam coming off the pile, and why your compost is not dissimilar to lasagne layers!



“Ok, guess where you are now? Yes you are in the compost bay. You are sitting there amongst the compost. Can you smell that? No, you actually can’t, can you? Neither can I, because I really healthy compost doesn’t actually smell bad at all.”

(13:14 – 13:31)



“Because of the dust and all the microorganisms and things that can live in here, if I’m moving it around what I will normally do is put on a mask so I am keeping myself nice and safe and not breathing those things into my body as well.”

(14:25 – 14:36)



“Sort of something a bit interesting that you might not have heard of in compost heaps before. I don’t know if you can see that, but can you see the steam coming out of this pile. Hopefully I am picking that up on camera.”

(14:40 – 14:52)



Permaculture Practices Practical Projects (continued)

Now it's time to CREATE your own compost!



Make sure to WATCH the **Composting, Worm Farming and Reducing Food Waste Masterclasses** and complete the associated **Practical Projects** in the *From Paddock to Plate Program* before getting started.

Activity: Perform a garden health check

The objective of this practical lesson is to equip students with the knowledge and skills to conduct a thorough health check of their garden, allowing them to RECOGNISE potential issues and take appropriate action to maintain a healthy and thriving garden.



“One of the principles that we make sure we stick to here at Maplewood Permaculture Farm is that we are always keeping the soil covered. If we can see bare soil, it means that we've got some work to do.”

(19:23 – 19:37)



“Mainly I'd like you to look at those things that we talked about for your soil to be healthy, so is it kept covered, has it got plants in there. You might even be able to do a scientific investigation about what are some of the creatures that are living in your gardens around the school already too.”

(23:01 – 20:19)



“The next thing would be to think how are we using our natural resources. Is our garden in a good place for sunlight? Is it a place where we are collecting rainwater and using that on the garden? And are we planting things, not just as food for us to eat, but also for the insects, birds, lizards, everything that is in our environment around us so that we have that balance in the ecosystem. That is really what we are trying to create.”

(23:20 – 23:42)



Step 1: Introduction (5 minutes)

UNDERSTAND the importance of regular garden health checks to maintain a vibrant and productive garden. EXPLAIN that early detection and intervention can prevent problems from escalating and help ensure a successful gardening experience. DESCRIBE the key areas to focus on during the health check, such as plants, soil, pests, and overall garden maintenance.

Step 2: Assessing Plant Health (15 minutes)

Students inspect each plant individually, starting with the foliage and working their way down to the roots. FIND signs of diseases (discoloured or spotted leaves), insect damage (chewed leaves or presence of pests), or wilting. RECORD observations and note down any concerning symptoms or abnormalities.



Permaculture Practices Practical Projects (continued)**Step 3: Evaluating Soil Quality (10 minutes)**

EXPLAIN the importance of healthy soil for plant growth and productivity. Students use a hand trowel to dig a small hole in various areas of the garden, focusing on different plant beds. ASSESS the soil moisture, texture, and colour. If available, use a soil testing kit to check pH and nutrient levels. RECORD and CALCULATE findings and identify any potential soil issues, such as compaction or nutrient deficiencies. Is the soil covered as Will suggests in the Masterclass?

Step 4: Identifying and Managing Pests (10 minutes)

DISCUSS common garden pests and their damage. Students carefully inspect plants for signs of pests, such as chewed leaves, webs, or visible insects. SUGGEST organic pest control methods, such as handpicking, introducing beneficial insects, or using natural pest repellents. Students note down any pest-related concerns and their proposed solutions.

Step 5: Garden Maintenance Check (10 minutes)

ASSESS the overall garden maintenance. LOOK for signs of weeds, overgrown plants, or any other maintenance issues. DISCUSS the importance of regular weeding, pruning, and removing dead or diseased plant material. RECORD any maintenance tasks identified and prioritise their actions.

Step 6: Wrap-up and Discussion (5 minutes)

EVALUATE observations and findings. DISCUSS the importance of ongoing monitoring and regular health checks to maintain a healthy garden. RESPOND to questions about the experience.



Permaculture Practices Practical Projects (continued)

Marking rubric

	Beginner	Developing	Proficient	Advanced
Understands the tasks and intended outcome.	Limited comprehension of topic.	Fundamental requirements of tasks covered.	Good understanding of the activities. Some relevant detail.	Thorough recap of tasks and ideal outcomes.
Grasps the concept and practical skills required and their importance.	Understands a few of the skills needed to perform this task.	Explains the importance and relevancy of this skill for seeking employment.	Shows thorough knowledge and understanding of the topic.	Asks questions to improve the outcome beyond current guidelines.
Offers alternative solutions to achieve the same outcome.	Unable to suggest another option to practise the same skill.	Adapts the activities to the current learning environment based on resource accessibility.	Finds more effective and efficient methods of achieving same goals.	Applies the skills acquired in the Masterclass to solve a current real-life issue.
Solves the problems/ completes the activities to achieve desired outcome.	Completes one of the activities in this Practical Project satisfactorily.	Completes all activities in this Practical Project satisfactorily.	Excellent problem-solving techniques in all activities.	High quality, clear and useful information presented in a clear and succinct form.
Implements this skill in an everyday life situation.	Unable to see how the activities relate to, and used in, the workplace.	Demonstrates initiative in incorporating skillset in daily situations.	Uses these skills to apply for a job and identifies relevancy to job criteria.	Refines skills to seek successful employment in relevant field of work.



Permaculture Practices Practical Projects (continued)

If you liked this practical project, you might like these other interactive materials in our Resources Library:

Lesson Plan

- Geography (Year 9)



Lesson 5: People and Food Production. Students consider and debate the reality of individuals becoming self-sufficient in large numbers. Is this possible? Do students think that people will take up self-sufficiency in large numbers? What factors are in favour and what are against this happening?

Masterclasses



Composting with Port Phillip Ecocentre's, Fam Charko.

Worm Farming with Port Phillip Ecocentre's, Fam Charko.

Veggie Garden Creation with Port Phillip Ecocentre's, Fam Charko.

Greenhouse DIY with Port Phillip Ecocentre's, Fam Charko.

Reducing Food Waste with curriculum specialist, Beverley Laing.

Practical Projects



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Farmer Network

Organise a time for the students to chat with permaculture designer, Will Power, directly e.g. a Zoom meeting on the big screen in the classroom is very effective, to answer questions and assist with the practical project.

Virtual Video Excursions



Head over to our Virtual Video Excursions in the *From Paddock to Plate Resources Library* and watch the episode on Vegetables to see the permaculture practices that this grower is using.