

Soil Matters

Kids to Farms

5 - 6 program

Teacher's Guide



NT FARMERS

Program overview



Educating Kids about Agriculture

The Educating Kids about Agriculture program is funded by the Department of Agriculture, Fisheries & Forestry and aims to encourage young Australians to study and pursue a career in agriculture including taking primary school students and teachers to visit farms and other primary production worksites, both physically and virtually, using innovative activities to learn about where food and fibre comes from and the important role the industry plays in regional communities and to the economy.

These resources, created by PIEFA, align the Australian Curriculum for teachers to support excursions to food gardens, to teach students where food and fibre comes from, how it is processed into food and the opportunities available within the industry in their region, for the future.

How to use this resource

The lessons outlined in this Teacher's Guide can be used to support an excursion to a community/school garden of your choice.

This resource includes:

- 5 - 6 Australian Curriculum (v9.0) links
- 2 x pre-excursion activities
- 2 x excursion activities
- 2 x post-excursion activities
- Worksheets and resources to support each activity





Science

Year 6

Science understanding

AC9S6U01

Biological sciences

Investigate the physical conditions of a habitat and analyse how the growth and survival of living things is affected by changing physical conditions

Design & Technologies

Year 5 & 6

Knowledge & understanding

AC9TDE6K03

Technologies context: Food and fibre production

Explain how and why food and fibre are produced in managed environments

Processes & production skills

AC9TDE6P02

Generating and designing

Generate, iterate and communicate design ideas, decisions and processes using technical terms and graphical representation techniques, including using digital tools



Resources provided

- NT Food Plants images
- *Focus on Food* worksheets
- *Healthy soil makes healthy plants* worksheet

Resources required

- Digital device with internet access for watching video

Activity 1 Focus on Food

Show students the **NT Food Plants** images. Explain that these are just *some* of the food plants that are grown in the Northern Territory. Have any students grown these food plants in their gardens at home? Invite students to share their experiences with eating or growing these foods.

Explain to students that different plants require different conditions to grow successfully. Such conditions include the soil type, soil pH levels, amount of sunlight, amount of water, growing season, etc. Ask students to research a food plant (chosen from the NT Food Plants images) to learn about the conditions that the plant needs to thrive. They can record the information they learn on the **Focus on Food** worksheets.

Activity 2 Healthy soil makes healthy plants

As a class, watch the video [Kids in the Garden, Ep 1: Soil - ABC Education](#). Discuss the main ideas presented in the video. Prompt questions for the discussion may include:

- Why is the health of our soil so important to plants?
- How do plants get nutrients from the soil?
- What are some of the different types of soil?
- How do composting and worm farms help to build soil health?

Ask students to answer the questions on the **Healthy soil makes healthy plants** worksheet.

Video URL:
<https://www.abc.net.au/education/kids-in-the-garden-ep-1-soil-healthy-dirt-makes-healthy-plants/13633060>

Excursion activities



Resources provided

- *Food Fact File* worksheets
- *The soil beneath our feet* worksheet

Resources required

- Clipboard and pencil per student
- Soil pH test kit (available for purchase at nursery or hardware stores)
- Soil thermometer (available for purchase at nursery or hardware stores)
- Hand trowel for collecting soil samples
- 4 x containers (e.g., empty ice cream/yoghurt containers)
- Gardening gloves

Activity 1 What's growing in our garden?

Guide your students on a walk through your community garden. Pay attention to the different types of food plants you see along the way. If a plant is labelled (or if you recognise a plant that is growing), stop and take a closer look. Ask students to complete a **Food Fact File** about this plant. The Fact File will prompt students to respond to questions about:

- Whether the food that is growing is a herb, fruit or vegetable.
- Which part of the plant is producing the food - the leaf, the root, the stem, the fruit.
- How the food is being grown - underground, above ground, on a vine, on a tree.
- The conditions required for growth - sunlight, soil, access to water, current season.

Ask students to complete a **Food Fact File** for at least three different food plants in the garden as you walk through. If possible, try to choose a variety of food plant types (herb, fruit or vegetable) for students to investigate.

Excursion activities



Activity 2 The soil beneath our feet

As a class, investigate the soil conditions in various locations of the garden. Using a hand trowel and container, collect soil samples from four different locations within the garden. If possible, choose a variety of locations to collect your samples - examples may include the soil surrounding a vegetable plant, soil from underneath a mulched area of the garden, soil from the paths that people walk on, soil from underneath a fruit tree, soil from a compost pile (wear gardening gloves if handling compost).

Allow students to analyse each soil sample by looking at and feeling the texture of the soil. Ask them to record their observations on the **Soil beneath our feet** worksheet. Conduct a soil pH test and take a soil temperature reading in each location and ask students to record these results.

Discuss observations and results with students. Which parts of the garden have the best/worst soil conditions and why? Why is maintaining healthy soil such an essential part of food production? How do you think the people that use and work in this community garden are helping to build and maintain soil health?

Post-excursion activities



Resources provided

- Worm farm design ideas
- *Farm for Worms* worksheet

Resources required

- Internet access for research
- Worm farm building materials and tools (optional)

Activity 1 Design task

Ask students to reflect on the soil investigations they conducted on the community garden excursion. As discussed in the pre-excursion lesson, soil can benefit from having nutrients added to it to help plants grow. A way you can do this is by adding nutrient-rich organic matter from a compost pile or worm farm. Were there areas of the community garden in which the soil could have benefited from added nutrients?

Present students with the following design task: Design a worm farm!

- Conduct research into what makes a good worm farm. Use the worm farm design ideas page to help you start your research.
- Try to use recycled items in your design.
- Draw and label your design on the **Farm for Worms** worksheet.
- Include information about the types of materials you have used in your design.
- Explain how your farm will work.
- Explain how worm farms can contribute to improving the health of the soil in places such as the community garden.

Post-excursion activities



Optional extra Build your design!

As a class, review the various worm farm designs created by the students. Choose one design that you would like to construct together. Gather the recycled materials and tools required to complete the chosen design. Allocate construction roles and carefully supervise the use of equipment and tools. There may be parts of the construction process that are more suitable for teachers to perform, depending on your chosen design.

When the worm farm is completed, consider taking it back to install in your community garden as a lasting contribution!