City of Townsville

# Seeds to Success

## Resource Guide

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# 1. About the program

Seeds to Success is a sustainability initiative for primary schools to engage in ecological stewardship through native plant growing and kitchen gardens. The program aims to empower students to connect with nature, build appreciation for growing and nurturing plants, reducing food waste, and connecting to place and country.

The seeds to success initiative will provide schools the opportunity to apply for **one** of two available packages (details below). The first package (option 1) is a 2-year membership to the Stephanie Alexander Kitchen Garden program. The second package (option 2) is a selection of 25 local native plants and a native beehive from Townsville & District Beekeepers Association. Additionally, all selected primary schools will receive one garden starter kit and one raised garden bed with living soil pile courtesy of Townsville City Council.

# 2. Garden Package Options

Option 1. Stephanie Alexander Kitchen Garden Membership

- Two-year membership
- Access to SAKG online resources, webinars and sharing hub
- 1x raised garden bed flat pack
- $1m^3$ x living soil pile and mulch
- Garden starter kit

Option 2. Native Ecological Garden

- Selection of 25 native plants
- Beekeeping workshop by Townsville & District Beekeepers Association
- 1x raised garden bed flat pack
- $1m^3$ x living soil pile and mulch
- Garden starter kit

# 3. About this resource

This resource guide was designed to provide suggestions on how to implement a kitchen or native garden. This program is designed to be flexible and supportive, recognising that teachers and schools bring different levels of experience with gardening and sustainability program. You do not need to be a gardening expert to successfully implement Seeds to Success – learning alongside students, experimenting, and adapting to your school context is part of the process. Inside this resource guide, you'll find guidance on getting started with your garden, program management, choosing a site, and long-term maintenance. It also provides access to lesson plans for upper primary year 4 to 6, with reference to the Australiana Curriculum Standards.

## 3.1 Benefits of kitchen gardens

Kitchen gardens support students to explore their world, work collaboratively, think creatively and learn authentically. Creating and participating in a kitchen gardens enhances students' appreciation for food, living things and the environment. It teaches important life skills that can enhance emotional and physical wellbeing as well as caring for our planet through sustainable development.

- Promote healthy eating and provides opportunity for hands-on physical activities.
- Empower students to make informed and confident food choices.
- Contribute to students learning, social connection and personal development.
- Sustainable food production systems protect natural resources through practices such as water efficiency, non-chemical fertilisers and re-use of food waste.

## 3.2 Benefits of native gardens

Native gardens provide a living classroom for students to learn about local ecosystems, biodiversity and the importance of nature. By planting local native species this helps students connect to country and understand local cultures, fostering a deeper connection to their environment.

- Promote local native species[10] and their importance to our dry tropical climate.
- Build a home for native wildlife.
- Connecting to country, learning about indigenous food plants.
- Stimulate creativity, exploration and storytelling in a natural setting.
- Develop sustainable practices and caring for the environment.

We recommend engaging with local experts where appropriate for information on native plant species and following school protocols on plant species.

## 3.3 Leadership and assessment opportunities

Both kitchen gardens and ecological gardens create meaningful leadership opportunities for students. By taking on roles such as garden club members, they develop practical gardening skills, build responsibility, teamwork, problem solving, and community involvement. These roles not only enhance their personal development but also contribute to the school's garden's success and sustainability. Some examples of how you could incorporate a student leadership call-out are 'Garden Captains', 'Compost Crew', 'Tool Team'.

# 4. Getting started

## Townsville's Climate

Townsville's climate is shaped by intense dry tropical heat, high humidity and a distinct wet-dry season. Understanding these patterns will help you choose the right location for your plants and protect them through the toughest months.

### Wet Season (Dec – Mar)

January is one of the toughest gardening months, with high humidity, storms and intense sun. Plans can suffer heat stress, sunburn, or waterlogging and pest pressure increases. Pests such as fruit flies, aphids, grasshoppers, and fungal disease thrive in warm, wet conditions.

### Dry Season (Apr – Nov)

Watering needs drop significantly during the dry season. Deep infrequent watering helps build strong root systems. The cooler, drier months are ideal for planting a variety of vegetables and natives that dislike humidity.

## Choosing your site

To set up a productive, sustainable and engaging school garden, it's important to select a suitable site. A site consultation is recommended as this provides details about your school site including garden requirements and accurate information to install garden beds. Generally, a site consultation will take between 1 – 1.5 hours.

**When choosing a suitable area, consider the following questions:**

### Is there enough sunlight?

Direct exposure to sunlight is crucial for your garden. Your site will ideally have 7 – 8 hours of sunlight to accommodate the broadest range of native plants, fruits and vegetables. Keep in mind the seasonality conditions of Townsville, particularly during summer months with high pan evaporation and humidity.

### Where is your water source?

Your site should ideally be located to the nearest outdoor tap or standpipe (roughly one hose length away). If you plan to install in-ground irrigation, the distance away from your water source will affect the pressure needed to get water to your garden.

### What type of soil is on site?

The key to a successful garden (particularly food gardens) is building and maintaining healthy soil. Ensuring your soil is healthy and balanced gives your garden the nutrients it needs to thrive. The best soil structure is lightly textured, full of organic matter that's continually breaking down, and provides enough air pockets for roots to infiltrate and water to travel.

Conducting a soil test with the pH test kit is a good starting point to find out what nutrients you may need to add. The best source of organic nutrients is finished compost and well-rotted manure. Both can augment whatever soil is available on site.

For more information on healthy soils, refer to the additional resources at the back of this guide.

### Is the site accessible/secure?

The site should be easily accessible to students and staff to allow for regular maintenance. Equally, consider whether the garden should be fenced to keep out animal pests and unwanted foot traffic taking short cuts. Is there a location close to an existing fence that could help reduce any expenses for additional perimeter fencing.

## Garden beds and equipment

Your school will receive one 1.5m x 1.5m raised garden bed flat pack. This raised garden bed can be utilised in a couple of options depending on your selected package. It can be used in any suitable location to grow herbs and vegetations, germinate seeds, or as a flower garden bed to attract beneficial insects.

The flat pack can be converted to a wicking bed. The school will need to purchase additional equipment to support this type of garden bed which may include but not be limited to:

- pond liner,
- agi pipe,
- PVC pipe,
- elbow and end cap,
- drainage gravel,
- geo-fabric,
- soil mix.

Follow this step-by-step guide on how to assemble a wicking bed.

## Risk management

While gardening has many proven benefits for health and wellbeing, schools should assess and manage any risks or hazards associated with gardening, such as students with anaphylaxis to insect stings, exposure to sun, accidental ingestion of slugs or snails, use of mulches and potting mix, and use of garden tools and equipment.

Managing risks in school curriculum activities

Insect bites and stings | Queensland Poisons Information Centre

## Potting mix

To minimise risks in using potting mix:

- Always wear gloves when handling potting mix
- Use only fresh potting mix, using the whole bag and not using stored leftover mix
- Ensure potting mix is damp to prevent breathing airborne particles
- Wash hands immediately after using potting mix.

## Tool use

When using gardening tools, teach students how to use and store them properly, particularly where and how to put down tools to keep themselves and other students safe. It is recommended to spend the first one or two garden lessons explicitly teaching students garden safety.

As a suggestion, it may be appropriate to issue 'tool licences' for the use of larger and sharper tools with students being individually assessed in their use. Even with a 'tool licence' students should be under close adult supervision. It is not appropriate for students to use sharp cutting and trimming tools, such as secateurs.

## Garden journal

Have students keep a garden journal such as a small blank exercise book or ring bound diary to track their gardening experience from the beginning. This form of nature journaling enables students to capture meaningful observations and information that can enrich their learning and strengthen their connection to nature and place. It allows students to:

- Slow down, notice small details and record them in a personal way
- Describe the gardens process and transformation
- Write observations, reflections, thoughts and feelings
- Sketch design ideas and solutions to problems

During lessons, allow time for students to journal in the garden – sketching, drawing or writing in their own way. They might include leaf rubbings, soil smudges or photograph items.

# 5. Materials and equipment

To help support your seeds to success journey, your class will be provided with the following materials to get started:

- 1 garden starter kit:
  - 25 gloves
  - 25 trowels
  - 10 watering cans
  - pH test kit
  - 1xBee Friendly Flower mix
  - 1x pack soil booster
- 1 Raised Garden bed flatpack (1.5m x 1.5m)
- $1m^3$ x Living soil pile
- $1m^3$ x mulch pile
- (Package 2 only) Bee hotel 1 per student (1 class)

# 6. Program management

The operation and management of the school's kitchen or native garden are influenced by various factors such as school size, available spaces, resources, and expertise. Some ways in which schools have managed and run their garden programs include:

- Class teachers conduct regular lessons, with support from other staff.
- Support of an additional teacher to team teach with class teacher
- Relief from face-to-face teaching program
- Release for a class teacher to run garden program with other classes as team teaching
- Programming the garden program into the school's scope and sequence for one or multiple year levels.

## Time allocation

To get the most out of your school garden, ensure enough time is allocated to run each session. The ideal length for garden activities (including any food preparation lessons) is 1.5 to 2 hours. Consider timetabling a two-hour session once a fortnight. A one-hour session may be more manageable but keep in mind the activities being delivered during the shorter timeframe.

## Support

Should you require support at any point during the program please contact our Customer Service Centre on 13 48 10. Additionally, there is a wealth of information and resources available online related to kitchen gardens and native gardens.

# 7. Garden Maintenance

Having a garden maintenance plan in place ensures your school garden can keep thriving long after it's been established. This requires consistent care and smart strategies which focus on efficient watering, pest management, seasonal tasks, and encouraging participants throughout the year.

## Watering

Work with your groundsman to help establish a regular watering schedule that matches the needs of the selected plants. Aim for early morning watering to reduce evaporation. Depending on your plans watering needs, use drip irrigation or soaker hoses covered with mulch to conserve water and deliver moisture directly to plant roots. Be mindful overwatering in some instances can encourage weed seeds to germinate rapidly, particularly after rainfall.

## Pest Control

Monitor your garden for pests like aphids, caterpillars, or beetles and choose organic control methods such as introducing beneficial insects like ladybugs or using neem oil. Avoid chemical pesticides as they harm beneficial organisms and disrupt the garden's ecosystem.

Garden pest seasonal calendar

| Insect type | SUMMER | AUTUMN | WINTER | SPRING |
|---|---|---|---|---|
| Ants<br>Black, Green |  | | |  |
| Aphids | |  | |  |
| Bed Bugs |  |  | | |
| Bees |  |  | | |
| Beetles<br>Elephant, Christmas |  |  | |  |
| Biting Insects<br>Mosquito, ticks, fleas |  | | |  |
| Crickets |  | | | |
| Flies<br>Whitefly, Housefly, March flies |  |  | | |
| Mice, Rats |  |  |  | |
| Roaches<br>German, American |  | |  |  |
| Spiders<br>St Andrews Cross, Redback, Huntsman |  |  |  |  |
| Stinging insects<br>Hornets, wasps |  |  | |  |
| Termites |  |  |  | |

## Insect hotel

Regularly check the hotel to ensure that it is not overcrowded and the insects are not being disturbed. It's important to keep the hotel clean and free of debris, which can be a source of stress for insects. Avoid strong odours as these can repel insects such as chemical herbicides. Ensure the hotel is protected from strong winds, heavy rain, and direct sunlight to maintain a stable environment for the insects.

## Seasonal Care, Crop Rotation, and School Holidays

Roster and plan seasonal maintenance activities including pruning, mulching and removing dead plants to keep the garden healthy.

For kitchen gardens, rotate crops yearly to prevent soil nutrient depletion and reduce disease buildup. For example, grow leafy greens in one bed, root vegetables in the next, and legumes in another to naturally replenish nitrogen. Compost garden and food waste and add organic matter to improve soil structure and fertility.  It's a good idea to keep a garden calendar to track planting, harvesting and maintenances tasks aligned with local climate patterns.

Draw up a roster of volunteers to visit over the school holidays and help with watering and harvesting, it may only need to be once or twice a week. Alternatively, set up a self-watering system such as time irrigation to keep plants hydrated.

# 8. References and Resources

## Kitchen Gardens


1. A_guide_to_composting.pdf, NSW Department of Education
2. DIY Composting, Townsville City Council
3. Food Gardens - Sustainable Schools NSW, Sustainable Schools NSW 2023
4. Fruit, Vegies and Herbs - Gardening Australia, Gardening Australia, ABC
5. Gardening in schools, Pick of the Crop, Health & Wellbeing Queensland, 2023
6. Home - KidsGardening
7. Organic Schools : Home, Australian Organic Schools, 2022
8. Sustainable School Food Gardens | Life Ed Qld, Life Education Queensland 2026
9. Teaching Schools About Composting: How to Get Involved, The Compost Kitchen


## Native Gardens


10. Native plants of the Townsville region, Native Plants Queensland 2023
11. Native plants of Townsville LGA, Department of the Environment, Tourism, Science and Innovation 2025
12. Queensland Dry Tropics | Grow Me Instead, Nursery & Garden Industry Queensland, 2009
13. A dry tropical style, Queensland Gardening Pages
14. Gardening with native plants | Australian Plants Society, The Australian Plant Society, 2020
15. Designing your native garden - Australian Native Plants Society, ANPS, 2024
16. Feature: Dry Tropics Native Plant Species - Paten Park Native Nursery, Paten Park Native Nursery
17. Gardening Guides - Native Plants Queensland, 2026


## Pest Control


18. Annual Pest Control Calendar - Pestline
19. SF001-X-24.1-Pollinator-Guide-Townsville-QLD-V01B.pdf


## Soils and pH


20. How to Build and Nourish Healthy Garden Soil | Eartheasy


## Outdoor learning and sustainability


21. Outdoor Learning  Australian Curriculum, Curriculum Connections