



EDUCATIONAL INSTITUTIONS

# GROWING COMMUNITY GARDENS

A garden leader's guide to  
community garden projects



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## Acknowledgements

Special thanks to the following educational institutions:

- Broadrick Secondary School
- Edgefield Primary School
- Hougang Primary School
- ITE College East
- Jurong Primary School
- Temasek Secondary School

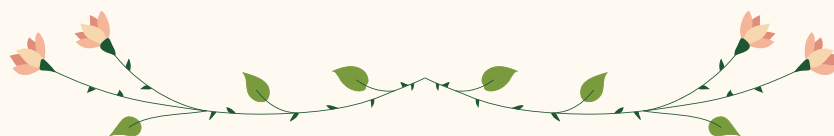


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National Parks Board, 2018

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# INTRODUCTION





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# INTRODUCTION

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## Community Gardens

Community gardens are where people come together to nurture, develop and sustain a lively green space in their estate. They give communities a sense of ownership and belonging and can be found throughout the world.

Such gardens reflect the purpose they serve: engaging, educating, building and strengthening relationships among staff and volunteers in a significant way. They inculcate values such as cooperation, volunteerism, respect for diversity, and ecological awareness.

## About This Guide

This guide aims to help educational institutions start, improve or manage gardens that will bring out the best in their communities. The garden offers a creative space in which garden-based learning programmes lead to increased environmental awareness and greater learning achievements for students. While tips offered here will start you off on your gardening journey, each plot of land will grow to have its own personality. Hence, beyond getting the right mix of soil or using the right tool, the following points may be useful to consider:

1. Good projects are a reflection of our community and help to improve it.
2. Diversity adds strength; strive towards being an inclusive group.
3. A successful community garden is built by empowered individuals.
4. The most important word in “community garden” is community.
5. The best community gardens are always evolving.



### Support From NParks

NParks supports Community Gardening through the Community in Bloom (CIB) programme. CIB aims to promote a gardening culture among Singapore residents by encouraging and facilitating gardening efforts by the community. It is a programme based on collaborative partnership between both public and private sector organisations and volunteer groups. As part of this island-wide community gardening initiative, NParks provides guidance and advice, such as:

- Choosing a suitable site for gardening.
- Working out the garden layout and design.
- Selecting the right plants.
- Improving gardening skills.

For educational institutions, NParks works with the gardening or management committee to provide support.

If you are interested in setting up a community garden, contact NParks early as it takes approximately three months for a community garden to be launched from its inception to construction.

**Website:** [www.nparks.gov.sg/cib](http://www.nparks.gov.sg/cib)

**Email:** [CommunityinBloom@nparks.gov.sg](mailto:CommunityinBloom@nparks.gov.sg)



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# ABOUT COMMUNITY IN BLOOM

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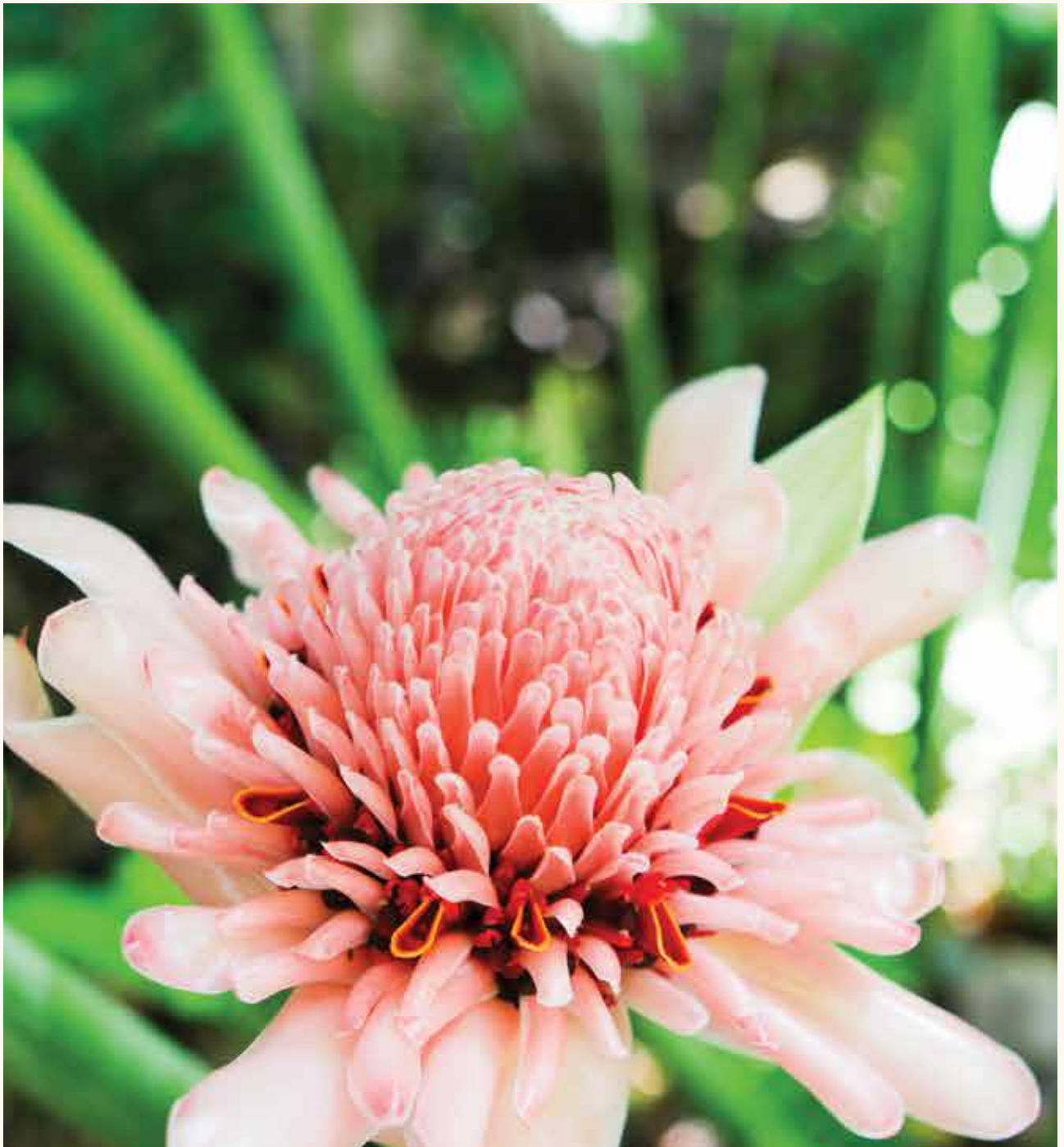


Community in Bloom (CIB) is a programme that was launched by the National Parks Board (NParks) in 2005.

It aims to nurture a gardening culture among Singaporeans by encouraging and facilitating community gardening efforts. It is also an opportunity to build community bonds and strengthen social resilience in our City in Nature.

**Visit our website to find a community garden near you:**

[www.nparks.gov.sg/cib](http://www.nparks.gov.sg/cib)



GET INSPIRED



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# GET INSPIRED

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## Award-winning Community Gardens

A community that plants together grows together. As there are no set rules in gardening, the garden model may differ according to location and the institution's needs.

The pictures below are a compilation of award-winning gardens cultivated by institutions on their own premises.

### Broadrick Secondary School





## Broadrick Secondary School





## Edgefield Primary School





## Hougang Primary School









## Jurong Primary School





## Temasek Secondary School





# GETTING STARTED





# GETTING STARTED

Planning is the key to building a strong foundation when starting a community garden. Successful gardens are often those where gardeners take the time to plan and design right from the start.



*Students attending a workshop on how to set up a community garden.*

## Steps For Success

Starting a community garden is hard work and requires time, energy and commitment. To achieve a successful garden, learn to prioritise the following tasks:

- Develop a strong and committed gardening group that will share the responsibilities.
- Conduct adequate research and site visits to other community gardens to learn important tips.
- Work as a group to achieve your objectives.
- Plan and create a roadmap that is geared towards achieving a shared vision.
- Design the garden with the vision in mind.

Before starting, it is important to ask yourself the following questions:

- Are there enough interested and committed staff and students within the institution to sustain the project in the long term?
- Is there support from the institution's principal or management committee to carry out this initiative?
- Is there an appointed leader (or co-leader) to oversee the gardening project and activities?
- Are there staff or students with 'green fingers' and those with specialised skills?
- Will the garden be funded by the institution? If yes, how much is the initial start-up and maintenance cost?
- Is there adequate time allocated to plan garden details?





STEP 1: GET PEOPLE



# STEP 1: GET PEOPLE



Before starting a community garden, it is important to make sure that there are staff and students who share the same interest as you and are willing to support and sustain the garden.

## Form A Gardening Group And Get Support

- Gather interested participants from among your staff and students.
- Appoint a leader for your gardening committee.
- Get support and approval from the institution's principal or management committee for your gardening project.

## Tips To Get People Interested

- **Share benefits:** inform interested students of the health, environmental, educational and social benefits of community gardening.
- **Word of mouth:** promote the garden to staff and students and ask them to spread the word.
- **Partner with established organisations:** talk to groups such as community centres, other schools, clubs and businesses in your neighbourhood about getting their members involved.
- **Promote internally:** With the approval of the principal or management committee, create simple posters that list contact information, meeting times, and upcoming activities and post them around the institution's premises to inform staff and students.



*Social media platforms such as Youtube are a great way to promote and inform the community of the school garden.*



## A Simple Checklist

### 1. Forming a gardening group

- ☐ Is there interest in the institution for a garden?
- ☐ Do you know who will be using the garden?
- ☐ Are there at least four to five interested participants?
- ☐ Support from the principal/management committee?

### 2. Roles and responsibilities

- ☐ Are there staff/students willing to take on the different roles?
- ☐ Who is the appointed leader(s)?

### 3. Identifying participants and their skills

- ☐ Gardening experience?
- ☐ Landscaping experience?
- ☐ Other types of beneficial skills and experience e.g. project management

### 4. Selecting the site

- ☐ Is the site easily accessible to the participants?
- ☐ Does the site have favourable sun, shade and wind conditions?
- ☐ Are amenities such as a water source nearby?

## Organise A Sharing Session

It is a good idea to hold a sharing session to discuss the potential community garden and to recruit students if they have not already been identified. At this session, share who will be involved in the garden, who it will benefit, and what kind of garden it will be. Identify and invite students who may be keen on participating.

- Organise a sharing session for staff and students for NParks staff to share ideas on setting up garden plots and tips on good gardening practices.
- Consider inviting volunteers from the parent support group to participate in the committee.
- Visit established community gardens to learn and exchange tips.

## Sample Agenda For First Garden Meeting

Below is a sample agenda for your first meeting and a list of tasks to accomplish.

### Welcome and introductions

- ☐ Find a comfortable setting (the garden, if possible)
- ☐ Conduct an icebreaker activity by asking the group to share their names and reasons for their interest in community gardening

### Garden project overview and update

- ☐ Provide background information on the garden project, where it would be sited and explain how the idea originated
- ☐ Explain what has been done so far and the purpose of the meeting

### Brainstorm and discuss the garden project

Some of the key questions to be discussed during this session include:

- ☐ What is the purpose of the garden and who is the garden for?
- ☐ Who will be in the garden committee?
- ☐ What is the budget set aside for the garden and how will it be maintained?
- ☐ How will garden duties be split and allocated?
- ☐ What will be the name of the garden?

### Next steps and wrap up

- ☐ Keep a short record of decisions taken and actions agreed
- ☐ Assign specific roles (planting, watering, propagation, etc. to each grade to manage or get them to volunteer



*A linear garden making use of border shrubs and a piano to create interest in a narrow space.*



## Tips For Active Leadership In Your Community Garden

### #1 Promote an open culture

An open concept garden allows students to explore the garden freely and learn to appreciate and respect nature.

### #2 Shared leadership

All students should have a sense of ownership towards the garden. Allow them to take the lead in an area of their interest. Every student has something to offer; tap on their strengths. The garden's sustainability and success depends on a core group of student leaders, not just a few individuals.

### #3 Turn the 'ME' into 'WE'

A community garden is a collaborative effort. Working towards consensus should be a core principle in how things get done. Have garden meetings where opinions are respected. It is important to understand what motivates your students to spur them on.

### #4 Be open and flexible

Listen and be open to the ideas each student brings. Keep an open mind;

some gardens had brilliant ideas contributed by young gardeners. Be responsive and act on all suggestions. Let students try out their ideas and allow their creativity to grow.

### #5 Acknowledge all contributions

A little appreciation goes a long way. Always say 'thank you'. Give credit when it is due and acknowledge all efforts, big or small.

### #6 Setting guidelines

Garden guidelines are an excellent way to ensure that everyone understands how the garden will operate and what is expected of them.

### #7 Community building initiatives

Celebrate and enjoy the garden as a group by sharing the harvest from the garden among students and staff.

### #8 Be inclusive

Include students from different grades and encourage them to grow different types of plants to learn different things.



Garden guidelines are useful for reminding everyone how the garden will operate.



## STEP 2: PLANNING YOUR GARDEN





## STEP 2: PLANNING YOUR GARDEN



*Students attending a model making lesson in garden landscape to help them in the design process.*

It is important to have a garden plan and a site design before actual planting. Community gardens should be developed for communities to gather and grow together in the long term.

The needs of every gardening group is different. Thus the garden plan should be designed according to the group's needs. From initial meetings and outreach activities, the group should have an idea of the type(s) of garden(s) that best meets their objectives.

### Identify A Suitable Site For The Garden

Contact NParks to help you select a suitable location for the proposed community garden. The following points should be considered when selecting a gardening site.



**Location of nearby residential blocks** – Locate community gardens in places with high human traffic to generate interest and encourage participation through outreach activities.

☐


**Accessibility** – The site should allow for comfortable mobility for participants, easy movement of soil, plants, tools, water and access to other common amenities (space for vehicle access, loading area, etc).

☐



**Water source** – Water is key. Look around the plot area to ensure that there is a water source nearby. If there is none, have the institution's Operations Manager install a water point to make it easier to water the plants.

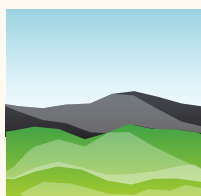
☐


**Amount of sunlight that the site gets –**

It is important that the site gets adequate sunlight for a variety of plants to survive. Observe the site at different times of the day to determine whether it receives adequate sunlight and if there are any potential obstructions such as large trees or buildings.

☐


**Plot size & shape** – Determine the size and shape of the plot. This will influence the number and size of plants you can grow. It will also influence the space for structures that your group will require, such as a storage shed, rest areas, compost area, etc. Remember to make allowance for the garden to grow.

☐


**Level or sloping ground** – While levelled ground is preferred for a gardening site, it is also possible to create beautiful gardens on sloping ground. A terraced layout lined with wooden or stone frames can add a special touch to a garden. Avoid sites with inherent ground conditions e.g. waterlogging.

☐


**Air circulation** – All plants need good air circulation to stay healthy and prevent pests and diseases. However, sites that get strong winds are not recommended.

☐

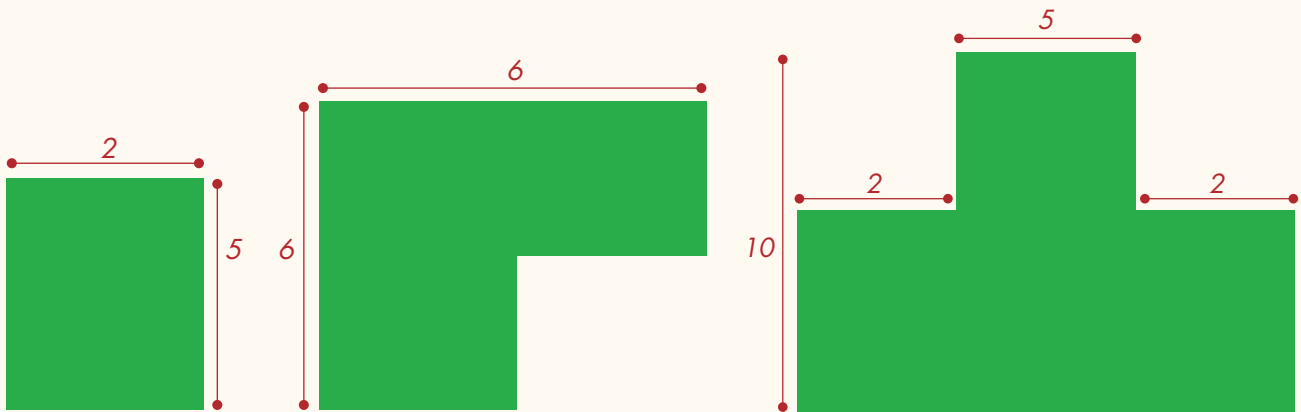

**Other safety considerations** – Site should be away from the main road or heavy vehicular traffic. Check for electrical cables and gas pipelines that may be buried under the soil surface; existing lamp posts, electrical boxes or other markers on site are indicative of their presence.

☐



### Getting The Scale Right

Keep the garden plan simple and manageable for the first year. Once the garden is established, there will be plenty of opportunities to add new elements. For gardens that are medium and large in size, allocate groups to work on specific plots before moving to other areas. Below are some examples of different plot sizes.



*Small – 5 to 10 sqm*

*Medium – 10 to 50 sqm*

*Large – above 50 sqm*

### Selecting A Garden Theme

Gardens can be designed to any style or theme, with each having its own beauty and character. Choosing a style can help you decide on the types of plants, patterns and garden features to have.

Themed gardens are designed around specific ideas, such as particular plant groups or purposes. They are characterised by an overall concept, and plants with similar growing requirements are grouped together to form unique collections or landscapes.

Community gardens can include a combination of themes such as vegetable and herb gardens, butterfly and bird gardens, children and seniors gardens. Create a design that engages students and meets your shared goals.



*By positioning shade-loving plants under a shelter or at the edge of a garden, you can create interest and diversify the plants you grow.*

**Herb and spice gardens** focus on planting a variety of herbs and spices.



**Ornamental gardens** are designed to increase the aesthetic value of an area.



**Fruit gardens** are gardens that grow a variety of seasonal and tropical fruits. Some garden leaders advise limiting the selection to small fruit trees for ease of maintenance, especially if the garden site area is limited in size.



**Bird and butterfly gardens** focus on planting specific biodiversity-attracting plants which provide food and shelter to sustain biodiversity growth.



**Edible gardens** encourage the community to grow their own food. This includes vegetables and other edible varieties.



**Kitchen garden** is one that is designed for and by people who love to cook using fresh ingredients.





## Design Considerations For New Gardens

It is useful to speak to other garden leaders and obtain professional guidance from NParks when designing a community garden. Where possible, try to recruit a permaculture or landscape designer into your group. Bear in mind the following points when designing your garden.

### Design for:

**Low waste** – Build a compost area for onsite management of organic waste generated by the garden.

**Sustainability** – Use recycled and local materials in construction. Where possible, install energy and water saving systems. For example, solar energy can be used to power the timers for sprinkler while rainwater harvesting can help to conserve water.

**Water management** – Maximise opportunities for rainwater harvesting and efficient irrigation. On sloped sites, use swales, terraces or beds that run along the contour of the slope to catch water.

**Integrated pest management** – Include a range of plants that provide shelters for small birds, frogs, lizards and predatory insects. Also include sources of water such as ponds and bird baths.

**Windbreaks** – Planting native trees and shrubs on the perimeters will shelter the garden from strong winds and reduce evaporation of valuable moisture in the soil.

**Biodiversity** – When carefully designed, community gardens can be part of a citywide network of local native bird and animal habitats.

**The senses** – A garden designed to engage the senses will be a place where people want to be. It will also enable your garden to 'speak' to a wider cross-section of the community. Try to include scented plants, colour, public art and auditory elements such as wind chimes.

**Learning** – Think about how groups will be accommodated; design for outdoor learning areas and paths with nodes that allow a group to pause for discussion. Create opportunities for experiential learning, demonstrations and practical small-group activities.

**Accessibility** – Narrow pathways will make it difficult for participants to move equipment around. Trellises should be easy for gardeners to maintain and harvest fruits from.

**Cultural diversity** – Include plants and cultural traditions of various cultural groups who make up your institution. Invite participants of various cultural groups to participate in the design.

## Plant Selection

Place plants with similar growth requirements (e.g. watering and light requirements) in the same planting bed or area. This makes it easier to water and maintain. Consider companion planting (a form of polyculture) for pest control, pollination and space maximisation. The following are some recommended plants that you can begin planting with.

### Plant Care Requirements



Prefers full sun



Prefers semi-shade



Prefers full shade



Prefers little water



Requires moderate amount of water



Requires abundant water

### Vegetables/Leafy Greens

Vegetables need lots of sunlight, water and fertiliser. Most are non-woody plants.

**Chinese Spinach**  
*Amaranthus tricolor*



**Lettuce**  
*Lactuca sativa*



**Cekur Manis**  
*Sauropus androgynus*



**Long Beans**  
*Vigna unguiculata*  
subsp. *sesquipedalis*



**Corn**  
*Zea mays*



**Sweet Potato**  
*Ipomoea batatas*



**Eggplant (Brinjal)**  
*Solanum melongena*



**Radish**  
*Raphanus sativus*



**Kang Kong**  
*Ipomoea aquatica*



**Turnip**  
*Brassica rapa* var. *rapa*





## Herbs and spices

Spices and herbs are aromatic plants used for flavoring food. Some have medicinal properties. Most are small, non-woody (herbaceous) plants that need full sun and regular fertilising.

### Chilli

*Capsicum annuum*



### Curry Leaf Tree

*Murraya koenigii*



### Chinese Parsley

*Coriandrum sativum*



### Basil

*Ocimum basilicum*



### Fragrant Pandan

*Pandanus amaryllifolius*



### Sawtooth Coriander

*Eryngium foetidum* L.



## Vibrant Flowers

These are plants grown for their brightly-coloured flowers. Most of these need full sun, lots of watering and frequent fertilising.

### Canna

*Canna hybrids*



### Hibiscus

*Hibiscus rosa-sinensis* cultivars



### Flaming Beauty

*Carphalea kironatron*



### Star Cluster

*Pentas lanceolata*



### Heliconia

*Heliconia* cultivars



### Periwinkle

*Catharanthus roseus* (L.) G. Don



## Biodiversity-attracting Plants

Having these plants in your garden will attract birds, bees and butterflies.

**Cape Honeysuckle**  
*Tecoma capensis*



**Orange Jasmine**  
*Murraya paniculata*



**Common Lantana**  
*Lantana camara*



**Pagoda Flower**  
*Clerodendrum paniculatum*



## Ground Cover

Ground cover plants are small shrubs that spread quickly to cover the area where they are planted. The following ornamental plants help prevent soil erosion and growth of weeds.

**False Heather**  
*Cuphea hyssopifolia*



**Red Flame Ivy**  
*Hemigraphis alternata*



**Japanese Rose**  
*Portulaca grandiflora* cultivars



**Yellow Peanut Plant**  
*Arachis pinto*



## Climbers

These plants occupy little ground space and are ideal for screening unsightly features and brightening up hardscape elements such as fences, trellises, arches and bare walls.

**Golden Trumpet**  
*Allamanda cathartica*



**Pale Blue Flower**  
*Clitoria ternatea*



**Kock's Bauhinia**  
*Bauhinia kockiana* Korth



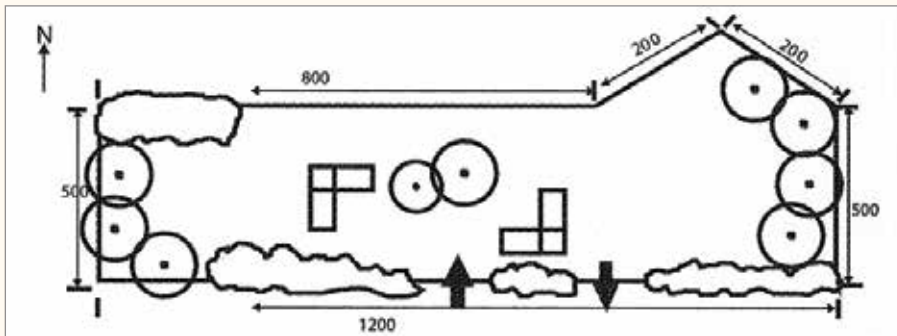
**Money Plant**  
*Epipremnum aureum* 'Gold'





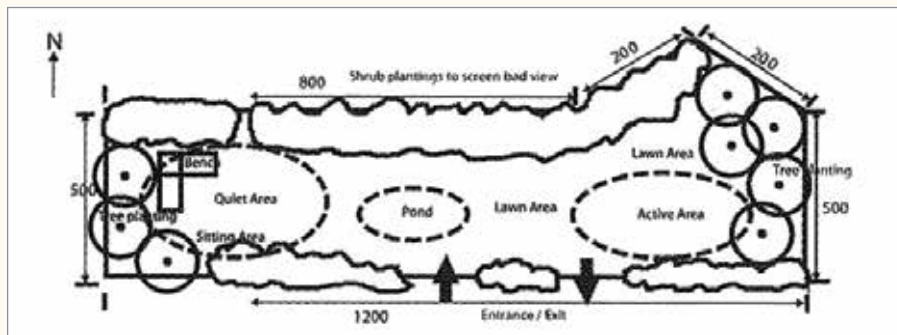
## Drawing Your Garden Design

Drawing out your design can help you plan your garden better.



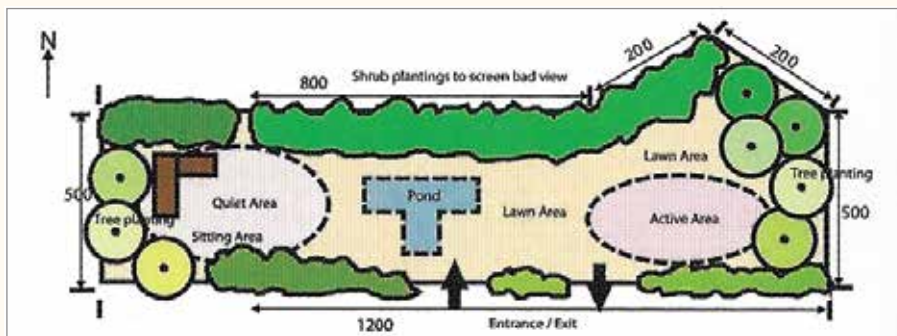
### 1. Make a scale drawing

Include measurements, physical conditions, boundaries, existing plants and built-up structures.



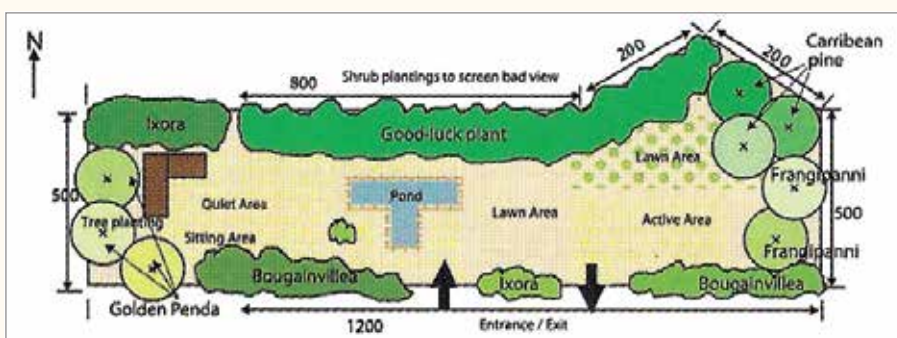
### 2. Create a few designs

Make a few copies of your scale map and try different designs. Use different shapes to represent plant beds or areas occupied by trees or large shrubs.



### 3. Evaluate and finalise the design

Incorporate the best features into the final design.

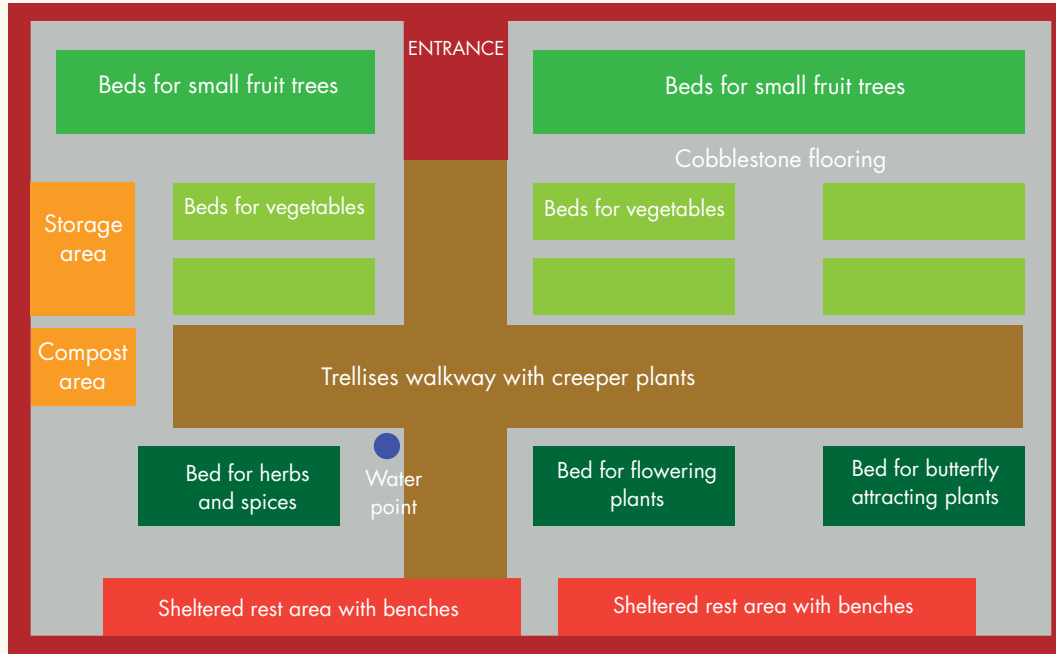


### 4. Fill in the details

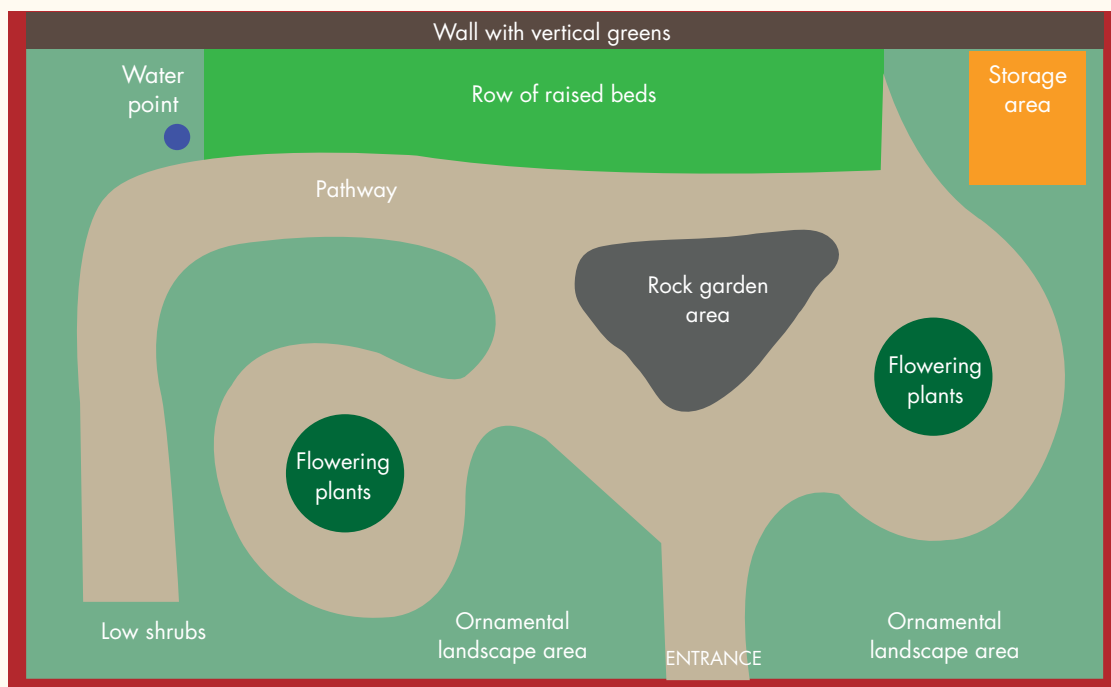
List the selection of plants, materials to be used, and types of garden decorations.

## Examples Of Garden Design Layouts

### Example 1 - A mixed garden theme layout



### Example 2 - An ornamental garden layout







## STEP 3: PLANT YOUR GARDEN



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## STEP 3: PLANT YOUR GARDEN

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### Preparing The Groundwork

Once the principal or management committee has endorsed the garden plan, the gardening committee can start preparing the groundwork with the students or by engaging a suitable contractor.

Students should be involved in the planning and preparation of the site, as these would encourage them to learn important lessons in managing garden resources and site preparation. There are four key stages to constructing the garden, which can occur at the same time or separately depending on time and available resources.



Stage 1: Prepare the site.



Stage 2: Build and install garden infrastructure.



Stage 3: Plant the garden.



Stage 4: Maintain the garden.



### Purchasing Gardening Materials and Tools

Always plan before you purchase. Ask what you will need to start and run a garden. Figure out what you already have and make a list of the skills and resources available from your own institution.

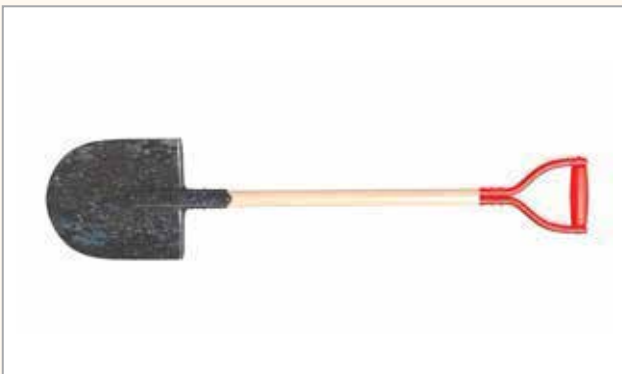
Here is a list of some basic gardening tools for any gardener:



**Spade** – to dig in transplants and remove small weeds.



**Gloves** – essential to prevent blisters and protect you from thorny plants.



**Shovel** – comes in many types and used for breaking ground, moving soil and more.



**Watering Can/Hose** – for ease of watering plants.



**Rake** – useful for gathering leaves to use as mulch.



**Secateur** – used for pruning and clipping.



**Wheelbarrow** – used to move heavy objects such as soil and large plants.



**Digging Fork** – good for loosening hardened soil and dividing perennials.



**Shears/Loppers** – are a larger, two-handed, long-handled version for branches thicker than secateurs can cut.



**Changkol** – available in different sizes for moving small amounts of soil, weed control and digging.

The infrastructure that is installed will depend on the garden design and needs of both the gardening group and the institution. Keep in mind that not everything needs to be completed in the first phase and projects can be added as the garden develops. Some of the items you can consider installing include:

- Raised beds
- Pathways and ramps
- Composting bins
- Garden shed
- Fences and gates

- Trellises
- Irrigation systems
- Rest areas
- Play areas
- Art and feature areas

In the first few years of gardening, it is important that gardeners have successful yields and enjoy eating what they grow in order to build confidence and enthusiasm. Consider planting a mix of both ornamental plants and vegetables to allow participants to have a choice of activities.

Depending on experience and timing of planting, the group may choose to plant the garden from seeds, seedlings or young plants that are transplanted into the garden, or a combination of both. Start gardening immediately to avoid hardening or erosion of the soil.



## Checklist For Community Garden Projects

The checklist below is a useful guide for garden leaders to determine their aims and objectives before starting on a community garden.

### 1. What will be the purpose of the community garden?

- ☐ A platform for garden-based learning programmes for students
- ☐ A place for relaxation and recreation e.g. shade, play and rest areas
- ☐ A place that provides access to fresh, nutritious food

Others: \_\_\_\_\_

Will the garden be open to use and/or visitation by surrounding community groups and schools? Yes ☐ No ☐

### 2. How will we garden?

- Organic gardening? Yes ☐ No ☐
- Container gardening? Yes ☐ No ☐
- Raised bed gardening? Yes ☐ No ☐
- In ground gardening? Yes ☐ No ☐

Other methods: \_\_\_\_\_

Reasons: \_\_\_\_\_

### 3. What structures should we include?

- ☐ Rest areas to sit
- ☐ Lockable shed for storage
- ☐ Compost area
- ☐ Nursery for plant propagation
- ☐ Educational signs

Others: \_\_\_\_\_

### 4. What support will we need?

- ☐ Support from the institution i.e. principal, the teaching and support staff
- ☐ Support from local authorities e.g. Town Councils
- ☐ Support from the parents i.e. Parent Support Group

### 5. Who will we include in the gardening committee?

- ☐ Teachers/school administrators and support staff
- ☐ Parents
- ☐ Students/ex-students
- ☐ Community volunteers

Others: \_\_\_\_\_

**6. What training do we need?**

- ☐ Gardening skills  
☐ Design skills  
☐ Craft skills  
☐ Education on plants e.g. how to identify weeds  
☐ Others: \_\_\_\_\_

Are any of these skills available within the institution? Yes ☐ No ☐

**7. How will we manage waste?**

- ☐ Create own compost  
☐ Mulching  
☐ Recycle materials  
☐ Others: \_\_\_\_\_

**8. How will we conserve water?**

- ☐ Mulching  
☐ Rainwater harvesting  
☐ Irrigation systems e.g. Drip irrigation, Soaker hose  
☐ Grow low-water-use plants  
☐ Others: \_\_\_\_\_

**9. How will we fund the garden?**

- ☐ Sponsorships and donations  
☐ Allocated budget from the institutions

Others: \_\_\_\_\_



*Conserve water through the use of a rainwater tank – used to collect and store rainwater runoff, typically from rooftops via rain gutters.*





## MANAGEMENT TIPS



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# MANAGEMENT TIPS

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## Tips For Success

### Ideas for sustainability

- Start small and expand later.
- Establish (and maintain) a good water supply e.g. an eco-pond, piped water source.
- Use organic approaches to improve and conserve the soil.
- Choose plants and crops which are adapted to local conditions and are easy to cultivate.
- Get trained and experienced teachers and student leaders to share their experience.

### Motivation

- Establish clear objectives for students to meet.
- Choose garden leaders who know how to manage people as well as plants.
- Praise, recognise and reward students and teachers for their achievements.
- Publicise success and make garden activities visible to the public and the whole institution.

### Educational value

- Recognise the garden as a learning experience and a learning tool.
- Involve students in planning, decision making, organisation and publicity activities.
- Link the garden to the institution's curriculum.
- Encourage observation, experimentation and record keeping.
- Start a Garden File for all garden documents.
- Contact and conduct exchange programmes with other institutions with gardens.



*Biodiversity gardens provide an outdoor space for students to learn about flora and fauna beyond their textbooks.*



Use this checklist to decide which of these aims are your priorities.

	<b>PRACTICAL AIMS</b> The institution's aims are to:	<b>EDUCATIONAL AIMS</b> The students learn to:
GARDENING	create a successful, sustainable garden using organic methods	grow things in a safe and sustainable way
		manage their own gardens
		enjoy gardening and learn to respect nature
	provide a model for learning-based activity	talk to parents and community members about gardening practices
NUTRITION	produce food for consumption	grow food for themselves
	improve appreciation of food and encourage wider palate	improve their diet and prepare healthy meals with garden produce
	improve student's eating habits	appreciate healthy foods and to change their own eating habits
MARKETING	sell garden produce to raise funds	develop business skills and entrepreneurship
ENVIRONMENT	improve the school environment	respect and take interest in their institution's environment
	conserve water, to create a biodiversity-rich environment etc.	be more aware of environmental and nature issues.
CURRICULUM	reinforce some areas of curriculum	be more active through hands-on experience
LIFE SKILLS	help students develop fundamental concepts on nature	plan, make decisions, collaborate etc
INSTITUTION & COMMUNITY	bring the institution, students, parents and community together in a common activity	gain awareness of gardening practices

## Responsible Gardening – Health And safety

### Health and Safety

A responsible gardener practises personal safety and considers the safety of others. By anticipating problems before they occur and implementing systems to avoid or minimise them, you can protect both the community from injury and your project from costly and potentially damaging allegations of negligence.

Conduct a simple risk assessment that considers the following, with particular reference to the safety of children and the elderly:

- Poisonous or potentially allergenic plants
- Trip hazards
- Sharp or dangerous edges
- Manual handling of heavy loads, including the use of wheelbarrows
- Use of sharp or dangerous tools
- Use of soils and manures
- Poisons and pesticides



*Always use gloves when handling soil, sharp tools and garden chemicals.*



*Beware of trip hazards; demarcate work areas to make them visible.*





*Keep unused containers upturned to prevent mosquitos from breeding.*

Be careful not to collect water and breed mosquitoes in your garden:

- Keep unused containers upturned and stored away.
- Keep drains and gutters clear of leaves.
- Always have fish in ponds and water features.
- Check pots and plant dishes for stagnant water.
- Clean and scrub the inner sides of plant dishes thoroughly to remove mosquito eggs.



SUSTAINING INTEREST



# SUSTAINING INTEREST

## Activities

Maintain the long-term interest of your students by creating ongoing activities and learning opportunities.

### Attract new participants

- Engage staff and students by putting up photos and drawings of garden events and activities.
- Get students to choose a name for the garden and display it.
- Make your garden interesting and inviting by including musical and artistic elements; art in the garden can be a source of fun and amusement.
- Design posters and prepare displays and presentations.
- Design and install attractive graphical signage to label different parts of the garden.
- Keep a Garden Journal or Yearbook to document the story of the garden. It can be shown to visitors and the media during visits.

### Orientate and retain new participants

- Conduct a simple induction and introduce new students to the group. Match students' tasks with their skills to engage them.
- Ensure new participants are familiar with the garden and its rules.
- Consider setting up a mentoring system. Mentor and share gardening knowledge with new students by pairing them up with skilled gardeners.

### Commission special projects

- Create sculptures or art projects from recycled materials to stand out and make a bold statement.
- Challenge your students with new or creative projects to sustain their interest. For example, create a vertical garden feature out of recycled bottles.

### Create opportunities for learning

- Organise or facilitate garden education activities for all grades.
- Set up stations so that students can rotate through different activities.
- Arrange gardening workshops, talks or sharing sessions presented by skilled gardeners, or bring in an expert to build capability within the group on a range of related topics.
- Co-ordinate visits to other gardens to exchange ideas; invite other community gardeners for networking and information-sharing sessions.

### Visitors and contracts

- Invite the surrounding community to some of the garden events e.g. harvest parties.
- Get student leaders to take visitors on guided tours.
- Have visitors bring home food samples, specially wrapped with descriptive labels written by students.
- Ask parents to contribute something small (e.g. seeds or plants) so that they feel involved.

## Garden Rules

Everyone involved in the community garden should be aware of the rules and policies that underpin the project. Doing so would ensure participants understand their responsibilities and rights. It is also important to consider every individual's inputs when drafting these rules and policies.

The following are some guidelines on garden rules and policies:

### **#1 Garden organically**

Gardens are part of a diverse ecosystem and we should use organic and natural methods to encourage plant diversity, attract beneficial insects, and create conditions for healthy plant growth. Chemical fertilisers and pesticides are not recommended. Observation and good soil fertility are the best defences against pests and diseases.

### **#2 Ensure regular attendance**

The garden survives only through the dedicated efforts of its participants. Remember: many hands make light work.

### **#3 Conduct regular garden maintenance and inspection**

Keep the garden weeded and trimmed. Paths should be kept level and clear to allow visitor to access. A well-tended area where vandalism is immediately reported has been observed to be a big deterrent to further destruction.

### **#4 Care for common tools**

Treat the shared tools and equipment with care. Clean the dirt off tools and wind hoses before storing them. Keep sheds and storage boxes locked except when removing or replacing tools, and never leave personal valuables unattended. Double-check before you leave the site to ensure that all tools have been locked away.

### **#5 Be respectful to nature**

Inform students not to pluck the flowers or harvest from the garden unless invited to do so.

### **#6 Personal and tool safety**

No running in the garden; no running with tools; do not carry or swing tools on your back; Walk with the tool by your side, blade down.



## Garden Project Ideas

The following are some ideas of how institutions can develop their immediate surroundings or introduce interesting projects to make gardening fun and enjoyable.



Set up a terrarium to perk up your indoor space.



Set up a mushroom farm.



A vertical garden helps to maximise limited space and enhance the visual appearance of the building.



Set up a garden trail with checkpoints.



Discarded bottles can be recycled into a hanging water bottle garden.



## FEATURE GARDEN 1

### Hougang Primary School

**Location:** 1 Hougang Street 93

**Main attractions:** Butterfly garden and vertical walls

This garden was conceptualised as a means for hands-on education for the students and has integrated many garden areas within the school grounds for use in their learning programmes. These include a plant nursery, mushroom farm, begonia and orchid garden, fruit orchard, herbs and spice garden, heritage walk with heritage trees, butterfly hatchery, eco-garden, outdoor classroom, vertical green walls and fernery, all complete with educational sign boards. Students even learn about energy conservation as the garden uses solar panels to power the sprinkler timers.

Upon entering the school, there is an impressive butterfly garden with various species of butterflies fluttering about the flowers. It stretches from the front of the school all the way to the side, and is accentuated with ground plants and tall vertical green wall features. With such massive grounds to cover, and over 500 species of plants, students have created a 'touring route' throughout the school gardens, with various checkpoints around the school, to ensure that nothing is missed.



*Top left and right: The dark-blue Snakeweed (Stachytarpheta cayennensis) and Bloodflower (Asclepias curassavica), are some of the butterfly attracting plants found in the school.*

*Bottom left: Caterpillar of a Danaus chrysippus butterfly, also known as the Plain Tiger or African Monarch.*

*Bottom right: The butterfly trail with vertical green walls lining the main entrance of the school facade.*



There is an outdoor classroom, sheltered by a trellis rooftop of plants, and surrounded by an eco-garden, where students have lessons. In the eco-garden, every area has a purpose when it comes to teaching and learning. Here, students witness the creativity of Mother Nature through the sheer variety of plants. Logs, leaf litter and a compost heap allow students to observe the natural decomposition process. There are about 70 species of herbs and spices, as well as medicinal plants available to learn about. There is also a large pond to learn about water plants.

Occasionally, new plants and trees are discovered, grown from seeds dispersed by birds whereas at the fernery, students learn about spores and seed dispersal. There is also a short walk through a rainforest, complete with rainforest type plants, a carpet of dead leaves and shady ambience for an experiential experience. There is also a short walk through a rainforest, complete with rainforest type plants, a carpet of dead leaves and shady ambience for an experiential experience.



*Left: The Eco-garden is located within the school compound making it conducive for garden-based learning programmes. Right: A 10-year-old oil palm towering above the grounds provides a natural canopy for the fernery below.*

### Tips From The Gardeners

- Keep sprinklers above ground for easy maintenance.
- Install sustainable features such as solar-powered timers and rainwater harvesting tanks to save on maintenance cost.
- Keep rainwater tanks closed at all times and ensure a closed loop system to prevent mosquitos from breeding.



*The decomposition area serves as a compost area for onsite management of organic waste generated by the garden.*



*The rainforest area simulates how the undergrowth of a tropical secondary rainforest would look like.*



*An outdoor classroom provides an alternative venue to educating youth on the natural environment.*



*The eco-pond supporting habitats of flora and fauna.*

“

Start small and expand gradually over the years.

**Garden Leader – Mr Mohan Krishnamoorthy**

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## FEATURE GARDEN 2

### Jurong Primary School

**Location: 320 Jurong East Street 32**

**Main attractions: Promotes recycling by turning used bottles into a hanging bottle garden and vertical bottle green wall**

Instead of disposing used bottles, this school was the first to advocate the concept of bottle gardening. Not only does this encourage recycling among students, it also promotes student creativity.

Bottled plants can be seen all around the school in unique arrangements. Some hang along the walkway like hanging potted plants, others are arranged vertically on the green walls.

There are about 30 Green Club students who water the plants daily and lend a hand in planting and nurturing new plants. Water for the plants is taken from the outdoor Eco-Pond, which is another form of conservation. These Green Club students also alternate tasks such as recycling and preparation of the collected bottles for planting.

To create the bottle garden, they are joined by the entire student body – the lower primary students in the Recycling Club collect bottles from the whole school, while the older students cutting and preparing the bottles. This cultivates a “Green” culture in the school – greenery in terms of plants, as well as the practice of recycling.

Four teachers are in charge of the Green Club and supervise the students as they do the gardening work around the school compound. In addition, senior citizens from Zone D Residents Committee and parents regularly help out in the gardens and share their knowledge with the students.



*Students from the Green Club alongside volunteers (senior citizens from Zone D Residents Committee and parents) planting and watering vegetables in a container gardening session.*

The Green Club students go on learning trips to other community gardens to learn more about the various plant species. They also promote bottle gardening in other schools and locations around the neighbourhood.

Other gardens and learning corners within the school include a butterfly garden, plots for orchids, cacti and succulents, tubers, poisonous plants, ferns, flowering plants, vegetable beds, fruit trees and an area dedicated to learning the basics of hydroponics.



*The hanging bottle garden and vertical green wall made from recycled bottles.*

### Tips From The Gardeners

- Make learning interesting by including the garden as part of the curriculum.
- Rally fellow teachers and parents to join gardening activities.
- Teach students how to differentiate between the plants and weeds.
- Plan the watering schedules during extended holidays to prevent the plants from dying.





*Different gardens are located around the school compound.*

“

It is not starting but maintaining the garden which is more important.

Garden Leader – Ms Wendy Chua

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## FEATURE GARDEN 3

### Temasek Secondary School

**Location:** 600 Upper East Coast Road

**Main attractions:** Science garden

Temasek Secondary's vision of becoming a 'Garden School' is realised through the school's commitment in caring for the environment.

Teachers and staff hold the environment in high regard, and take responsibility in educating students on practical and meaningful measures to care for the environment. The community garden has since become the school's main green project.

The garden's design is in line with the school's green objective of *Aesthetically pleasing, Environmentally friendly and Educational* (AEE). Students and teachers from the Green Club collaborate to come up with a modern design where participants can explore the garden through their senses like touch, smell and sight.

To increase student participation, teachers also rope in students who express interest in gardening and are looking to earn extra Community Involvement Programme (CIP) hours. They get to learn about transplanting and re-potting through the technique of stemming, to distinguish between weeds and grasses, and participate in garden competitions conducted by the Green Club.

The Green Club also welcomes gardening enthusiasts and parents to join the school's gardening community and harvest is shared among the students and parents so that they can literally savour the fruits of their own labour.



Featured projects from student competitions promoting a green culture in the school.





*The science garden is located next to the school lobby and boasts a large outdoor koi pond.*

### Tips From The Gardeners

- Submit a feasible proposal and obtain support from management.
- Find an area within the school compound that can be turned into a gardening plot, e.g. unused carpark area.
- Research the Internet and visit other gardens to find out more about the plants that you wish to grow in the plot.



*An outdoor hatchery where butterflies can hatch safely from predators before being released into the garden.*



*Unused parking lots along the side of the building were converted into gardening plots.*

“

Create a community of sharing – willingness to share with other schools so that we can learn from one another.

**Garden Leader – Ms Suriadi Kassim**

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