

13. Butterfly Haven

Aim	Students observe, identify and take photographs/videos of local butterflies that visit the school garden. They brainstorm ways to attract more butterfly species to the garden and create a presentation on butterflies in their school garden.
Recommended for	Sec 1-3
Subject Links	Science: animals reproduction ; IT
Horticultural Skills	Butterfly garden
Process Skills	Observing, classifying, comparing, generating
Equipment/Materials	Magnifying glass, camera or video camera. Optional: butterfly guide e.g. 'A Guide to Common Butterflies of Singapore' (Singapore Science Centre Guide Book)
Duration	1-2 gardening session/s (1-2 hours)
Preparation	Photocopy the handouts, obtain the materials and book the computer room.
Safety	Brief students on Garden Nasties (see page 4). Look out for students who may be allergic to pollen in the air or plant sap.



Procedure

1. Introduce the activity by asking students how many types of butterflies they think we have in Singapore. (about 280 species) *from website stated in the student handout.
2. Distribute the handout, explain the activity and briefly run through the main points on the handout.
3. Students go to the school garden to observe, identify and take photographs/videos of local butterflies that visit the school garden.
4. Let students go to the computer room to download their photos or videos and do more research on their butterflies. They create a presentation about common butterflies in the school. Arrange for them to make a presentation to other students.
5. Teams can post pictures of their butterflies on your school blog or the NParks Gardening blog 'Young Gardeners' (http://www.nparks.gov.sg/blogs/young_gardeners/).
6. Extension: encourage students to make suggestions for new plants that attract butterflies (food or host plants) to be planted in the school garden. Get them involved in planting and caring for these.

Debrief

- § **How to attract more butterfly species to the school garden?**
Provide them with both 'host plants' for butterflies to breed on and nectar-producing plants, as nectar is the most common food for adult butterflies.
- § Nectar is the most common food for butterflies. However, they also 'feed' on liquids on the ground, rotting fruit, plant sap, and even sweat and urine! Adult butterflies may have several food sources, but their caterpillars are heavily dependent on particular species of host plants.
- § Commend teams with well-researched and designed butterfly guides.
- § Ask students to share with the class what they have learnt from this activity. Alternatively, you could ask them to fill in the reflection sheet in Annex 3 and discuss their reflections.

Common butterflies in gardens and their host and food plants:

Common Butterflies Common name Scientific name	Host Plant (where eggs are laid and caterpillars develop on)	Food plant (source of nectar for adults)
Lime butterfly <i>Papilio demoleus malayanus</i>	• Lime plant (<i>Citrus</i> sp.)	Any nectar-producing flower
Lemon Emigrant <i>Catopsilia pomona pomona</i>	• Cassia trees (e.g. <i>Cassia</i> spp.)	
Common Palmfly <i>Elymnias hypermnestra agina</i>	• Palms (e.g. Alexandra Palm <i>Archontophoenix alexandrae</i>)	
Common Mormon <i>Papilio polytes romulus</i>	• Lime plant (<i>Citrus</i> sp.) • Curry leaf plant (<i>Murraya Koenigii</i>)	
Common Grass Yellow <i>Eurema hecabe contubernalis</i>	• Peacock Flower (<i>Caesalpinia pulcherrima</i>) • Seven Golden Candlesticks (<i>Cassia alata</i>) • <i>Albizia</i> sp.	
Cycad Blue <i>Chilades pandava pandava</i>	• Cycads (e.g. <i>Cycas revoluta</i>)	
Lesser Grass Blue <i>Zizina otis lampa</i>	• Mimosa plant (<i>Mimosa pudica</i>)	Coat buttons (<i>Tridax procumbens</i>)
Chocolate Pansy <i>Junonia hedonia ida</i>	• Family <i>Acanthaceae</i> (e.g. <i>Justicia</i> and <i>Strobilanthes</i> spp.)	Any nectar-producing flower
Leopard <i>Phalanta phalantha phalantha</i>	• Weeping Willow tree (<i>Salix</i> spp.)	<i>Lantana camara</i> , <i>Ixora</i> spp.
Plain Tiger <i>Danaus chrysippus chrysippus</i>	• Giant Milkweed (<i>Calotropis gigantean</i>)	Any nectar-producing flower



Activity 13



Name :

Members of your team :

13. Butterfly Haven

Project Objectives

Your Team has to:

- Observe, identify and take photographs/videos of local butterflies that visit your school garden
- Brainstorm ways to attract more butterfly species to the garden
- Create a short presentation about butterflies in your school garden

Butterflies are found almost everywhere in Singapore. Some butterflies prefer forests or fields, while others live around road-side trees and gardens. Gardeners have a mixed reaction to them – on one hand the adult butterflies visiting the garden add colour and wonder to the garden; on the other hand, their voracious caterpillars damage leaves of our plants! One solution – designate selected plants as host plants and be willing to have caterpillars devour these up - all for the sake of the continual existence of local butterfly species!

Be careful of 'Garden nasties' like centipedes, bees and wasps!

Duration of activity

1-2 gardening session/s (1-2 hours)

Equipment/Materials

- Magnifying glass, camera or video camera.
- Optional: butterfly guide e.g. 'A Guide to Common Butterflies of Singapore' (Singapore Science Centre Guide Book)

Suggested Steps

1. Go to the school garden (and nearby park) to observe, take photographs or videos of butterflies in all their life-stages - egg, caterpillar, pupa and adult. Take care not to pluck or damage eggs and pupae.
2. Identify the butterflies (using a butterfly guide) and take note of the plants the butterflies visited.
3. Go to the computer room to do research on the butterflies you had observed and download your photos and video clips.
4. Create a short presentation on butterflies in your school (and nearby park) and share their presentation with other students.
5. You can post pictures of their butterflies on your school blog or the NParks Gardening blog 'Young Gardeners' (http://www.nparks.gov.sg/blogs/young_gardeners/).

Tips!

- For information on butterflies in Singapore, please refer to:
<http://www.geocities.com/RainForest/Vines/2382/bflypage.htm>
<http://butterfly.nss.org.sg/>
- If you have difficulty identifying any butterfly, you could post your picture or description on the Green Culture Singapore – Website and Discussion Forum
<http://www.greenculturesg.com/>



Extension

- You can collect the larvae of the butterfly and keep them in an enclosure until they pupate and emerge as an adult. If possible you should film the different stages of development of the caterpillar in the box.
- Make suggestions to add plants which attract butterflies to your school garden if they cannot be found. Take part in planting and caring for them.