13. Butterfly Haven



Aim Pupils observe, identify and take photographs/video of some local

butterflies and the plants these butterflies visit. They observe the main stages of a butterfly's life cycle (eggs, caterpillar, pupa, adult)

in the garden (not necessarily on the same plant).

Recommended for Primary 4-6

Subject Links Science: classification of animals, life cycle of animals,

reproduction in animals (Pri 5 & 6); IT

Horticultural Skills Butterfly gardens

Process Skills Observing, classifying, comparing

Equipment/Materials Magnifying glass, camera or video camera. Optional: 'A Guide to

Common Butterflies of Singapore' (Singapore Science Centre

Guide Book)

Duration 2-3 hours

Preparation Photocopy the handouts, obtain the materials and book the

computer room

Safety Brief pupils on 'Garden Nasties' (see page 4). Look out for pupils

who may be allergic to pollen in the air or plant sap.

Procedure

- 1. Introduce the activity by asking pupils what butterflies visit the school garden.
- 2. Explain that butterflies visit many habitats and some are common garden species.
- 3. Distribute the handout and explain the activity pupils go to the school garden to observe, take photographs or video-tape adult butterflies that visit the garden. They identify the butterflies (using a butterfly guide) and take note of the plants the butterflies visited (filling in the handout).
- 4. Pupils then look around the garden for the main stages of a butterfly's life cycle egg, caterpillar, pupa and adult (not necessarily on the same plant). They take photographs of each stage they find.
- Pupils go to the computer to download their photos and video clips and do some research. Here are some good websites on butterflies in Singapore: http://www.geocities.com/RainForest/Vines/2382/bflypage.htm http://butterfly.nss.org.sg/

If they have difficulty identifying any butterfly, they could post a photo of that butterfly or its description on the Green Culture Singapore – Website and Discussion Forum http://www.greenculturesg.com/

- 6. Pupils use their photgraphs, videos and information to create a short presentation on butterflies in the school garden.
- 7. Debrief the activity
- Encourage pupils to post pictures of butterflies and/or their reflections on your school blog or the NParks Gardening blog 'Young Gardeners' (http://www.nparks.gov.sg/blogs/young_gardeners/).







9. Extension:

- Teams take turns to make a presentation to other pupils.
- They can collect the larvae of the butterfly and keep them in an enclosure until
 they pupate and emerge as adults. If possible, the pupils should film the different
 stages of development in the box.
- Make a poster or signage on common butterflies in the school garden.

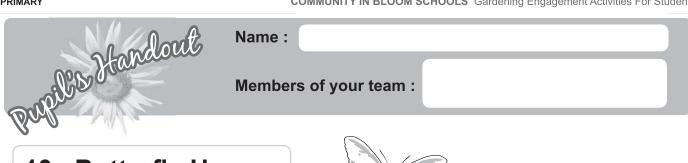
Debrief/Background Knowledge

- § Run through the main species of butterflies common in your school garden.
- § Discuss the following information about butterflies:
 - What do butterflies eat? The most common food for adult butterflies is nectar from flowers. 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.
 - How do we attract butterflies to our garden? We need to plant both nectarproducing plants (to provide food for adults), as well as 'host plants' for butterflies.
 Adult butterflies seek out host plants to lay their eggs on. The eggs will hatch into caterpillars which will eat the leaves of the host plant to continue its life cycle.

Here is a list of common butterflies in the school gardens and their host and food plants

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

§ Ask pupils what they have learnt through this activity. Alternatively, you could ask them to fill in the reflection sheet in Annex 3 and discuss their reflections.



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Butterflies Observed in our School Garden.

Common Name of Butterflies	Description/ Which plant/s did it visit	Do you have a photograph or video-clip of the butterfly?

Stages of butterflies we found. Describe the butterfly, egg, caterpillar or pupa and take a picture:

