



The Metamorphosis Game

Roll a '1' to colour the eggs

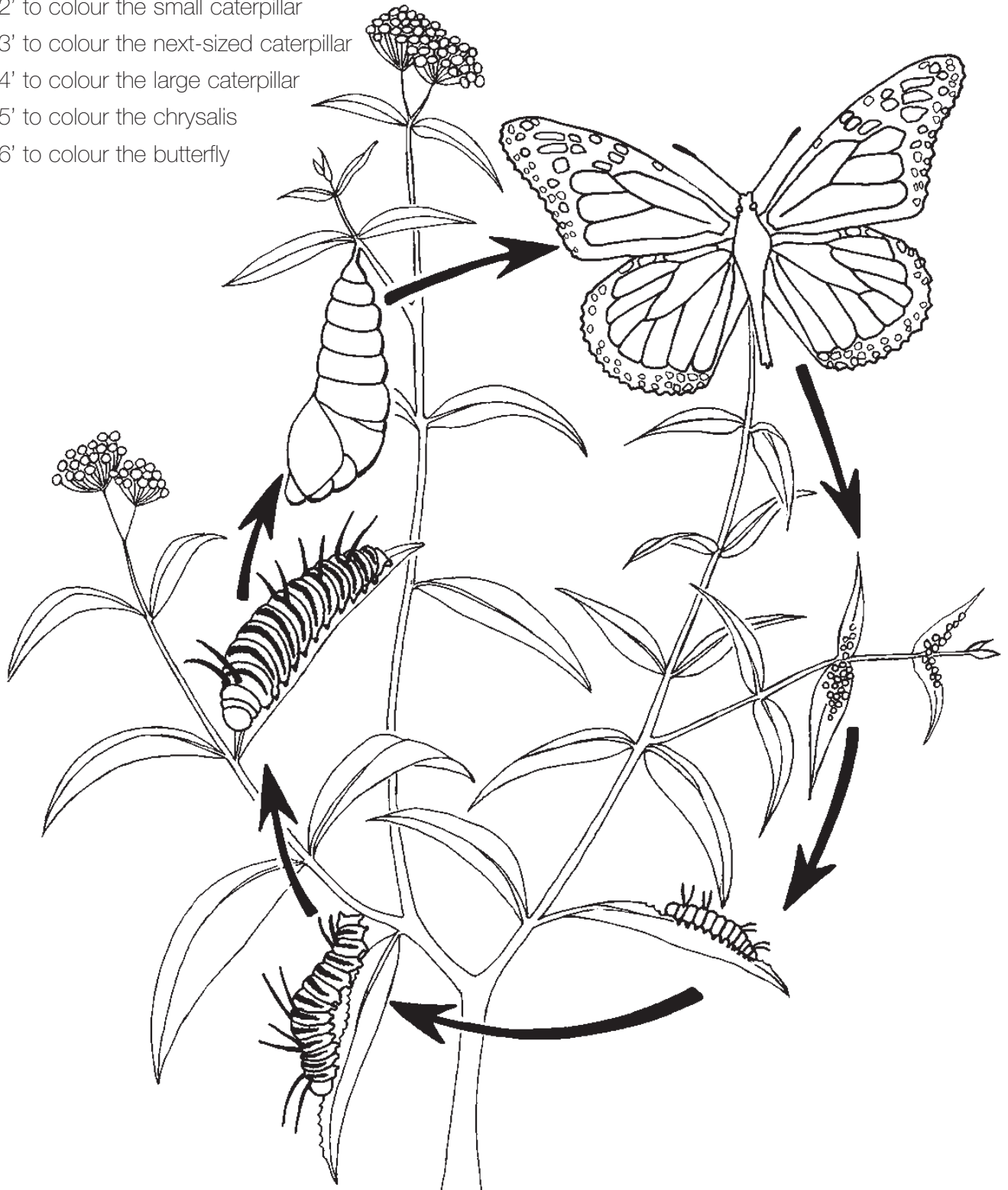
Roll a '2' to colour the small caterpillar

Roll a '3' to colour the next-sized caterpillar

Roll a '4' to colour the large caterpillar

Roll a '5' to colour the chrysalis

Roll a '6' to colour the butterfly



How are plants important in the life cycle of the butterfly?

Colour the plant when you have finished the game.



A bug's story

In this activity students discover the life stages of some insects and create the environment in which these life cycles are completed.

Information for teachers

Insects undergo complete or incomplete metamorphosis. The lifecycles of butterflies and beetles are examples of complete metamorphosis, involving larval, pupal and adult stages. During incomplete metamorphosis the young (nymphs) are similar to the adult and grow to adulthood through a series of moults. The lifecycles of leafhoppers and stick insects are examples of incomplete metamorphosis.

You will need

A copy of the diving beetle or dragonfly lifecycle for each student. (Copies of *A Diving Beetle's Story* and *A Dragonfly's World* are provided on the following pages.)

What to do

Review the lifecycle of a common insect such as a butterfly.

Discuss the concept of metamorphosis (changing shape). The *Metamorphosis Game* will help to consolidate this process.

Introduce students to illustrations of the dragonfly and diving beetle lifecycles.

Discuss aspects of the environment in which these creatures live, including plants, shelter, food sources and predators. Be sure to include the impact of human activity.

Provide each student with a copy of the dragonfly or diving beetle lifecycle. Have them add the additional things that are important to this animal's environment. Information about predators and food can be found in the information section of this website.

Following on with drama and story writing

Act out the process of metamorphosis of a butterfly. Write a script, appoint a narrator, make costumes, and add some excitement by including predators, such as spiders, wasps, lizards and birds.

After rehearsals, videotape your performance.

Write a class story of the life-cycle of a favourite insect. Good examples of the style of these stories can be found in picture storybooks from the library.

Three examples are:

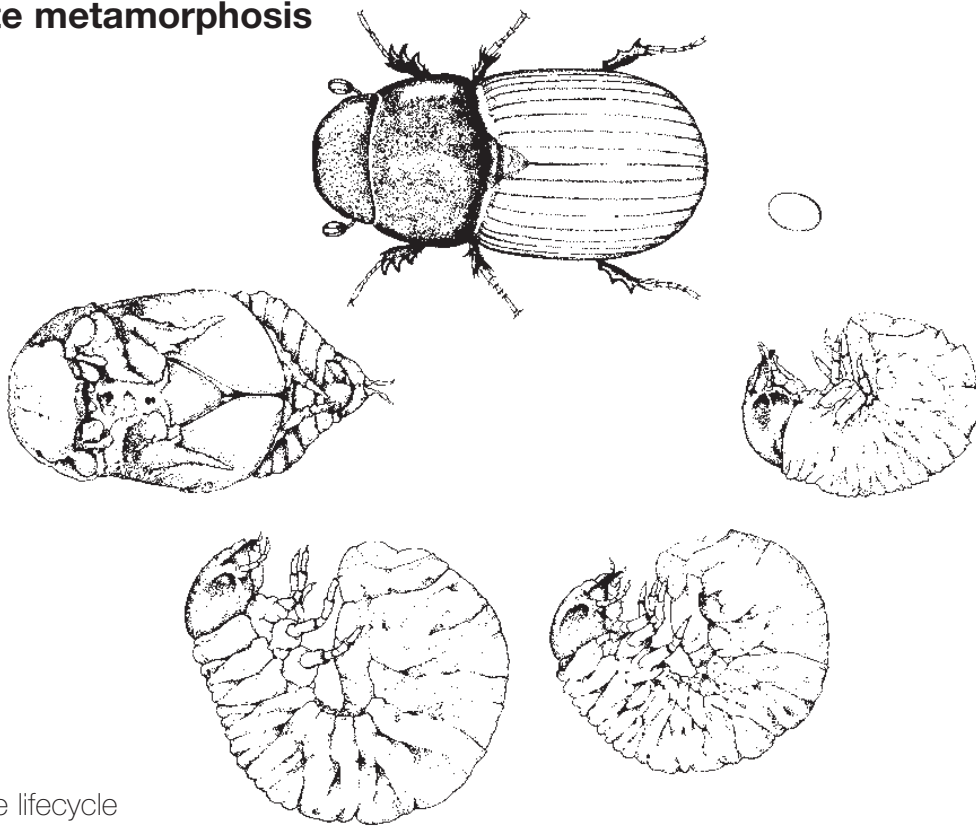
The Very Ordinary Caterpillar by Gary Fleming. This Australian publication tells an interesting story about the butterfly life cycle.

The Very Hungry Caterpillar by Eric Carle. An old favourite that tells the story of a caterpillar eating its way to become a butterfly.

Butterfly Kiss by Vicki Churchill and Charles Fuge. A story telling of a butterfly's search for 'butterfly food'.

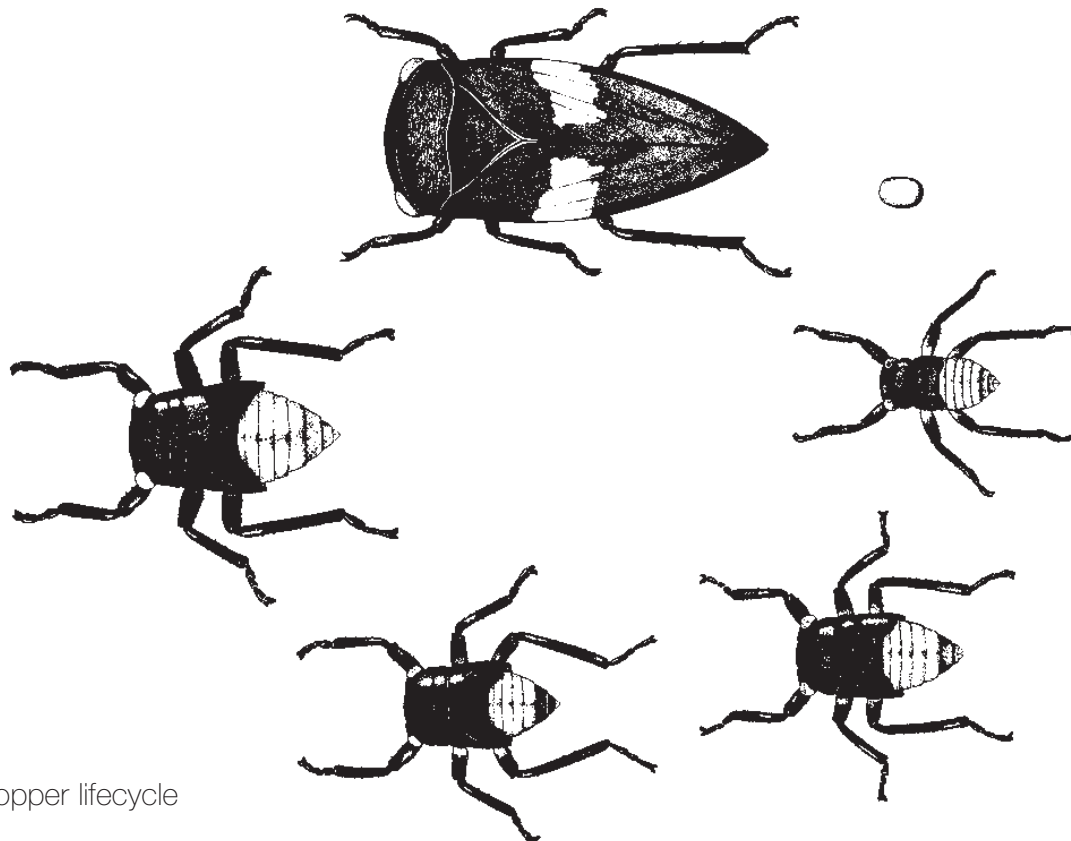


Complete metamorphosis



Dung Beetle lifecycle

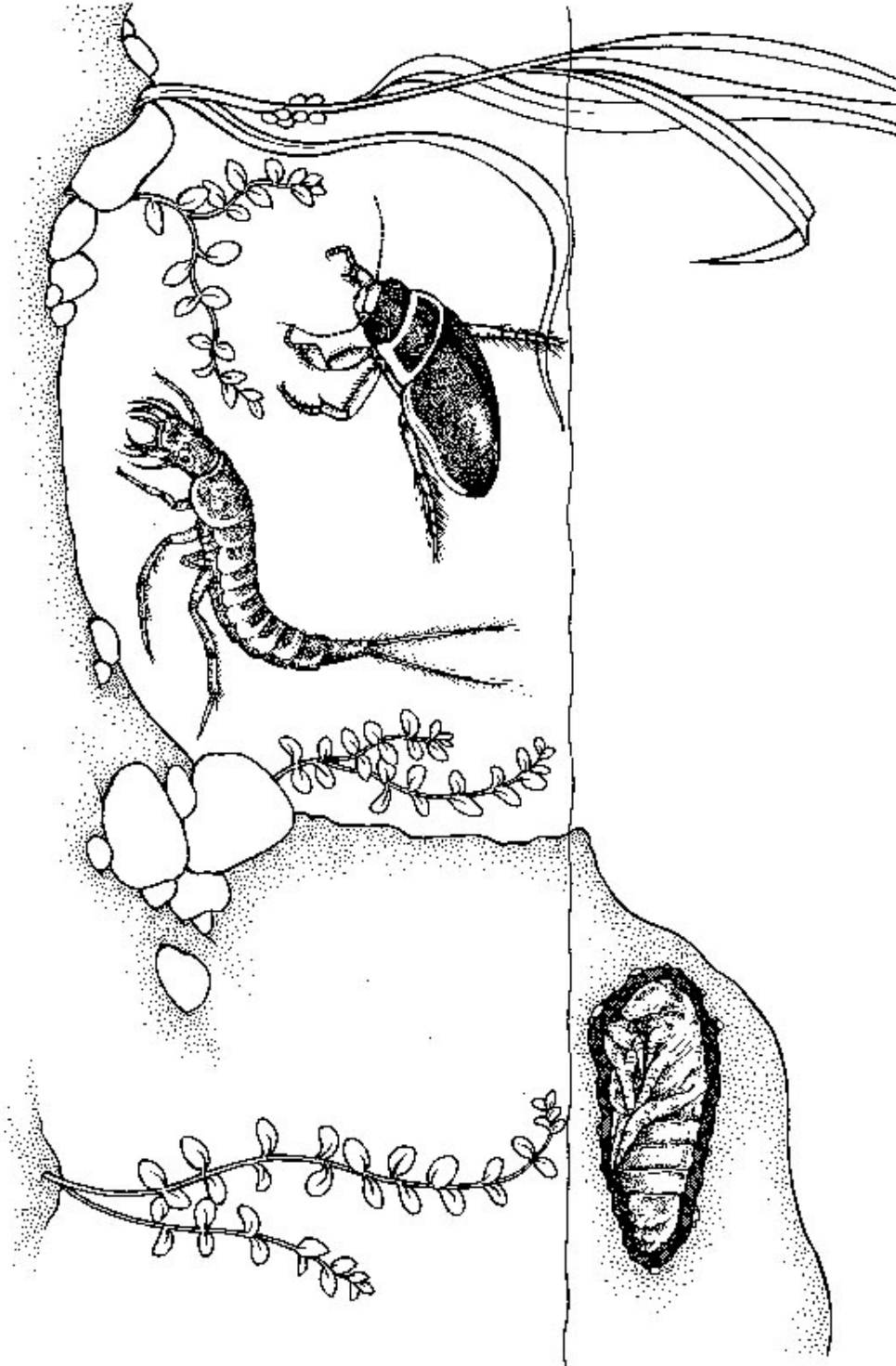
Incomplete metamorphosis



Leafhopper lifecycle



A Diving Beetle's story





A Dragonfly's world





Animals in the classroom

Keeping live animals in the classroom encourages children to observe, discuss and record changes that occur as animals grow.

What to do

Select a 'bug' project on which to keep an animal growth diary. Record children's observations of the changes in size, shape, colour and movement.



Hatching moths and butterflies

A small number of caterpillars can be collected from the school ground and raised if you have access to a continuous supply of their host plant. Caterpillars require specific food sources, so note which plant species they are feeding on when found. They also have huge appetites.

Butterfly eggs, and information about their care, can be purchased from the Zoo Education Service (ph. 9285 9355). Butterfly eggs and kits must be ordered prior to the start of terms 1 and 4. A source of citrus leaves is needed to raise the Orchard Swallowtail caterpillars that are supplied.

If you have access to a supply of Mulberry leaves, the silkworm is a wonderful species to maintain and observe in the classroom. Eggs hatch to coincide with new season's growth of Mulberry leaves. Eggs can be obtained from Monnie Fenner billmonniefenner@bigpond.com, subject to availability.

Plant a butterfly garden. Butterflies take nectar from a variety of flowers but lay their eggs on specific host plants that provide food for their caterpillars. Planting the host species of plant will encourage butterflies to lay eggs in your area.

Information about host plants can be found at www.museum.vic.gov.au/bioinformatics/butter/

Keeping Phasmids (stick and leaf insects)

These creatures are fascinating animals to study – a supply of fresh gum leaves and suitable housing is all that is required. Detailed information about obtaining and caring for phasmids and other insects is available from The Australian Insect Farm. Full details at www.insectfarm.com.au

Lifecycle in a jar

A simple lifecycle to observe is the mosquito. Collect some mosquito larvae (wigglers) from a pool. These will quickly become tumblers (pupal form) before turning into adult mosquitoes. Refer to activities, *A Bugs Story* (prep-2) and *The Cycle of Life* (years 3 – 8) for an outline of the mosquito lifecycle.

