***Biodiversity study*** Planning ahead and equipment list

**Planning ahead**

**N.B. Downloading resources from the Queensland Museum website**: When you click on any of the website links you will asked for a username and password. In order to access the PDFs and videos, click ‘Cancel’ and then the PDFs and videos will open.

* Read the ‘Backyard Explorer Leader’s Guide’, Queensland Museum website, <http://www.qm.qld.gov.au/microsites/wild/pdf/backyard-explorer-leader-guide.pdf> for detailed instructions on how to complete the biodiversity study. This guide includes background information, instructions, images, hints and tips on how to carry out the study successfully.
* Each student requires a copy of the ‘Backyard Explorer User Guide’ (herein referred to as the ‘student workbook’), Queensland Museum website, <http://www.qm.qld.gov.au/microsites/wild/pdf/backyard-explorer-user-guide.pdf> to work through each group activity.
* Each group activity will take approximately one hour.
* All materials and equipment required for each activity are also documented within the student workbook.
* Determine which method of insect trapping you will use for **Group activity 4: Trapping and identifying invertebrates—**pan traps are the easiest option and are very successful in collecting a number of insects.
* Refer to the student workbook for more details on equipment and instructions for trapping insects (pp. 12–14).
* View the videos from the Queensland Museum (supplied within this CLE’s Digital content document) or the information on ‘Setting up a yellow pan trap’, on the American Museum of Natural History website, <http://www.amnh.org/learn/biodiversity_counts/read_select/ht/yellowtrap.htm> to help you choose the most suitable method for trapping insects for your circumstances.

**Note:** Each of the group activities needs to be carried out for each study site so that a comparison between sites can be completed at the conclusion of the study.

Options for completion**—**carry out each study concurrently, dividing the class into half with each half studying one site OR complete one study before commencing the next.

## Equipment required for every activity

* ‘Backyard Explorer Leader’s Guide’, Queensland Museum website, <http://www.qm.qld.gov.au/microsites/wild/pdf/backyard-explorer-leader-guide.pdf> (Teacher notes)
* ‘Backyard Explorer User Guide’, Queensland Museum website, <http://www.qm.qld.gov.au/microsites/wild/pdf/backyard-explorer-user-guide.pdf> (Student workbook)
* Hat. Sun-safety gear is a requirement for each lesson when working outdoors
* Pen or pencil
* Digital camera (optional)

## Group activity 1—Naming the habitat

Equipment needed per group:

* 30 cm ruler
* 1 m2 quadrat, made with plastic irrigation pipes or similar. (A quadrat is a square plot of land marked off for the study of plants and animals.)
* transect line or tape measure
* tent peg, to measure soil compaction
* Copy of downloadable resource ‘Science Skills: How to name habitats’*,* Queensland Museum website, <http://www.qm.qld.gov.au/microsites/mangrove/pdf/scienceskills/QM_how_to_name_habitats.pdf>

## Group activity 2—What is my habitat like?

Equipment needed per group:

* thermometer
* tent peg
* water
* gloves
* anemometer (to measure wind speed)
* hygrometer (to measure relative humidity)

***Note:*** if availability of anemometers and hygrometers is low, share one between groups.

## Group activity 3—Habitat profiles: What animals could live in this habitat?

Equipment needed per group:

* Digital camera, optional (may assist students to draw images)

## Group activity 4—Trapping and identifying invertebrates

Equipment needed per group:

* Refer to student booklet (pp 12–14) for details on equipment for your chosen insect collection technique (beating, netting, pitfall traps, pan traps and leaf litter collection)

If using pan traps you will need:

* yellow coloured plastic plates – minimum 1 per group
* water
* detergent
* magnifying glasses
* tweezers

## Group activity 5—Other consumers: reptiles and birds

Equipment needed per group:

* Binoculars

## Group activity 6—Physical factors of the study area

Equipment needed per group:

* Equipment required is dependent on the physical factors chosen to measure. Refer to the student workbook page 22 for specific details.

Equipment may include:

* thermometer
* distilled water
* universal indicator solution
* barium sulfate powder
* hydrogen peroxide solution
* tiles, spotting tiles
* stirring rod or skewer
* test tubes
* gloves
* anemometer (to measure wind speed)
* hygrometer (to measure relative humidity)