

Field Guide: Teacher Notes



Bob Winters ©

Activity 2

Living things depend on each other
and their environment

Objectives

After completing this activity, students will be able to:

- Understand that living things depend on each other and their environment.

Target audience

Level 4

Activity

This lesson builds on what students have understood from the previous activity on identification. In the first activity, students learnt that plants and animals are alike in some ways and different in others. In this activity, students will investigate how living things depend on each other and their environment. Students will learn how animals use their environment for shelter, food and how their requirements are related to their abundance.

Duration

50 minute session

Materials

iPad, iPhone or computer with internet connection
Flora and Fauna Field Guide App. or Field Guide from the Ecolinc website
Data projector linked to a computer with an internet connection and PowerPoint
Student workbook
Pencil

Begin this lesson by engaging students in a brainstorming session about animals that are common in your schoolyard or backyard. Ask students to tell you what makes these animals so common. Talk about the habitats and diets of these animals and introduce the terms habitat, omnivore, herbivore and carnivore. Record student responses on the board and consider these prompts to keep the discussion lively (answers have been provided):

1. What animals are common in your backyard?

Students may talk about cats; dogs; birds such as sparrows, magpies, seagulls, plovers, rainbow lorikeets; reptiles such as lizards; insects such as butterflies, ants, moths and bees. Answers will vary.

2. What makes these animals so common?

Students may talk about less competition (for resources, food and shelter) for these animals.

3. What is a habitat?

A habitat is a home for an organism.

4. What are some habitats found in a grassland?

Grasslands tend to provide open habitats. Students may discuss many possibilities such as amongst the thickets of the tussock grasses and wildflowers, under or around rocks or hollows in trees.

5. What does an omnivore, herbivore and carnivore eat?

Omnivore: an organism that eats plants and animals

Herbivore: an organism that eats plants

Carnivore: an organism that eats animals

Explain to students that they will study two birds and will investigate their requirements. On the data projector, use the PowerPoint to show the House Sparrow and the Red-tailed Black Cockatoo. Ask students; Which do you think is the most common? Ask students to answer the first two questions in their workbook.

Using the data projector, so all students can follow; go to the Field Guide and find the House Sparrow. Ask students to point out where information on diet and habitat is found. Students will use this information to answer questions in their workbook for both birds. With this information, students will determine whether the birds have broad or specific needs. Explain that an organism with broad needs is one that has a varied diet and habitat. It is an organism that thrives. An organism with specific needs has few organisms in their diet and a small number of habitats it can occupy. As a result, less of these organisms will be found in an ecosystem.

Explain that in Investigation 2, students will choose their own organisms, which show broad and specific needs. As they are already looking at birds it might be easier for students to continue with them. Here are some examples of birds with broad and specific requirements if needed:

Broad requirements	Specific requirements
Superb Fairy-wren	Superb Parrot
Pacific Black Duck	Yellow-tailed Black Cockatoo

Ask students to complete their workbook, using the Field Guide.

Conclude the session by engaging students in a brainstorming session about how organisms depend on their environment to survive. Ask students to tell you whether having specific or broad requirements makes an organism common or rare. Students will complete the conclusion questions in their workbook.

Student workbook

Activity 2: Level 4 Living things depend on each other and their environment

You will investigate how organisms in grasslands depend on one another and their environment to survive. Use the Flora and Fauna Field Guide to examine the following organisms and answer the questions.

Investigation 1

Compare the **House Sparrow** to the **Red-tailed Black Cockatoo**.

1. Which of the two birds do you think is more common?

Answers may vary however students will probably assume that the House Sparrow is more common.

2. Why do you think the bird you chose is the most common?

Students may say that they see a lot of sparrows in their schoolyard or backyard but have never seen a Red-tailed Black Cockatoo.

Use the Flora and Fauna Field Guide and examine the information about the House Sparrow and the Red-tailed Black Cockatoo.

3. What is the diet of the House Sparrow?

Omnivore, feeding on a range on food including invertebrates, seeds, flower buds, berries and food scraps.

4. What is the diet of the Red-tailed Black Cockatoo?

Herbivore. Forages for seeds mainly in fruiting Brown Stringybark and occasionally in thickets dominated by Casuarinas, Banksias, Hakeas and Acacias. Seldom feeds on the ground.

5. What is the habitat of the House Sparrow?

Parks, cities, towns, farmlands, crop growing areas.

6. What is the habitat of the Red-tailed Black Cockatoo?

Generally restricted to Brown Stringybark forests or woodlands with peripheral stands of River Red Gum, Yellow Gum and Buloke.

7. Which bird has more specific needs?

The Red-tailed Black Cockatoo has specific needs.

8. Which bird has broad needs?

The House Sparrow has broad needs.

Investigation 2

Choose one organism which demonstrates specific needs, and another organism which demonstrates broad needs.

9. Complete the following table

Specific needs	Broad needs
Name	Name
Type	Type
Group	Group
Diet	Diet
Habitat	Habitat
Native status	Native status

Conclusion

10. How does the House Sparrow and the Red-tailed Black Cockatoo depend on the environment and other organisms to survive?

The habitat requirements of the House Sparrow are diverse compared to the Red-tailed Cockatoo. The House Sparrow thrives as it lives in urban and farming environments where invertebrates, seeds, buds, berries and food scraps are plentiful. The Red-tailed Cockatoo's habitat requirements are more specific, as it mainly feeds on seeds from one species of Stringybark and occasionally on seeds from a few other native trees. Both birds require a variety of habitats, and plants and animals in their diet to survive.

11. Does having broad needs make an organism more common or less common in an ecosystem? Why?

An organism with a varied diet and habitat requirements will have a greater population as the environment can support larger numbers, as there is a greater availability of resources.