



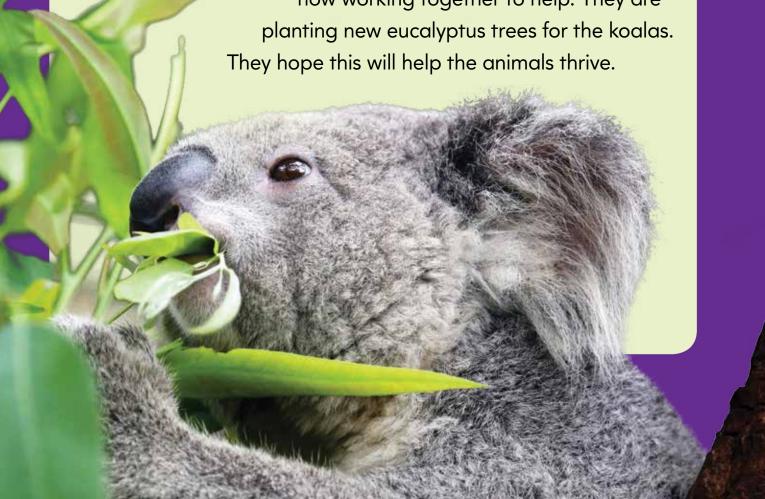
Koalas are quickly losing their homes! Can they be saved?

Koalas live in Australia. But people are taking over their habitats, the places where they live. Now there's less food and shelter for the animals.

Koalas are very picky eaters. They eat only the leaves of eucalyptus (yoo-kuh-LIP-tiss) trees. But people have cut down many eucalyptus forests. They have turned the land into farms, highways, malls, and

houses. Today, there are not many koalas left.

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Schoolyard Safari

What lives in your schoolyard? Find out!

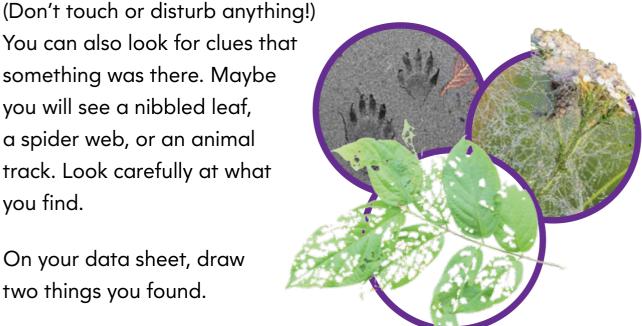
1. Close your eyes and imagine you are walking around your schoolyard. What different ways do people use it? Record your thoughts on your data sheet.

Materials

- ★ clipboard
- ★ pencil
- "Schoolyard Safari" data sheet
- 2. What other living things do you think might use your schoolyard? They might be living there, or they might just visit. Make a list.
- 3. Go on a Schoolyard Safari. Go outside and look for signs of life. You can look for living things, like a tree or a butterfly.

You can also look for clues that something was there. Maybe you will see a nibbled leaf, a spider web, or an animal track. Look carefully at what you find.

- 4. On your data sheet, draw two things you found.
- 5. Share your discoveries with the class. What surprised you the most?



Name: _____

Schoolyard Safari

1. What different ways do people use your schoolyard?

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Habitat Makeover

What would you like to live in your schoolyard? How would you change your schoolyard to make it a good home?

- Think of three animals or plants you would like to have in your schoolyard. List them on your data sheet.
- 2. Look at your list. Does your schoolyard have what each one needs to survive? (For clues, look at the "What Do Living Things Need?" chart.)
- 3. Pick one living thing that could not get what it needs from your schoolyard. How could you change your schoolyard so it would be a good habitat for your plant or animal? Write your ideas on your data sheet. Draw a picture of one or more of the changes on your sheet.
- 4. Share your plans. Listen to other people's.
 Which plans would be hardest to carry out?
 Which would be easiest?

Materials

- ★ "What Do Living Things Need?" chart (from your teacher*)
- ★ pencil
- ★ "Habitat Makeover" data sheet



Habitat Makeover

1. List three animals or plants you would like to have in your schoolyard.



2. Do Step 3 of the Task Card. Write your ideas below.

3. Draw a picture of one or more of the changes below.

What Do Living Things Need?

Each kind of living thing has its own special needs. Here are some to think about.

Food	Some animals eat plants. Some eat other animals.				
Water	Some animals just need water to drink. Some plants need to soak up water with their roots. But other plants and animals live in the water, so they need a lot more.				
Shelter	An animal might need a cave or a good place to dig an underground burrow. It might need a branch and twigs for making a nest.				
Territory	Some animals never travel very far. Some hunt over large areas. Others fly or swim thousands of miles every year.				
Temperature	Some plants and animals need warmth. Some are happy in the cold.				
Amazınt	Some plants need a lot of sup Some grow well in				

Amount of light

Some plants need a lot of sun. Some grow well in the shade.



for teachers

Background

Australia used to be home to millions of koalas. In 2015, the Australian Koala Foundation estimated that there are less than 80,000 koalas left in the wild.

European settlers who moved into Australia 200 years ago cut down eucalpytus forests and hunted koalas for their soft fur. In some areas, the animals have almost disappeared. Today, hunting koalas is illegal. But they're still losing their habitat to people. Living so close to people also puts koalas in danger. Many are hit by cars or attacked by pet dogs.

Hands-On Hints

Task Card 1: Schoolyard Safari

How you do this activity will depend on your schoolyard, but even a city school's paved play space will likely have some signs of life. Look in the cracks or on the edges for small plants and insect life. Look for leaves or seeds that have blown in from outside.

Talk over safety rules with your class before going outside. Details will depend on your schoolyard, but should probably include:

- Never put your fingers where you can't see them—like inside a hole in a tree trunk or the ground.
- Do not touch or otherwise disturb any animals, including insects.
- Signs of animal life like molted feathers, spider webs, and animal scat (poop—yes, that's a sign of life!) should be left where they are. Children should let a teacher know if they want to bring something inside for closer examination.

- Don't eat anything you find for instance, berries.
- Add any necessary warnings about poison ivy, nettles, thorns, and so on.

If you wish, help children gather some signs of life for closer examination in the classroom. Feathers, half-eaten acorns, and such can be collected in zip-top bags or placed on a tray. This will make them easier to pass around and examine. You can use clippers, scissors, or a trowel to carry away a plant sample. Put it in water to keep it fresh. Insects can be kept in clear containers with air holes. Include a sample of the plant they were found on and let them go at the end of the day. You can provide hand lenses in the classroom for closer observation.

Task Card 2: Habitat Makeover

Print copies of "What Do Living Things Need?" (page 7 or page 15).

Invite children to think as big as they want. If they decide to imagine how their schoolyard could accommodate a whale, consider it Next Generation Science Standards LS2.C Ecosystem Dynamics, Functioning, and Resilience LS4.C Adaptation LS4.D Biodiversity and Humans ETS1.B Developing Possible Solutions

ETS1.C Optimizing the Design Solution

a good opportunity for them to exercise their problem-solving abilities! They will be thinking about animal needs and ways humans can lessen our impact on other living things. Younger children can rely on their previous knowledge and their imaginations. Encourage older children to research their subjects.

Children may choose a living thing that could realistically be added or attracted to your schoolyard, or you may suggest one yourself as a class project. This will, of course, depend on your geography, but birds and butterflies are both animals whose needs can be met with feeders or plantings. Good resources would include a local chapter of the National Audubon Society or the American Horticultural Society website.



For optimal results, we suggest following these steps:

- 1. Introduce the topic by reading aloud the nonfiction acticle. The article helps build background knowledge and provides context for the hands-on activities. You can project it onto your interactive white-board as you read it aloud. There is also a printable version that you can distribute to students so they can read along.
- 2. Divide the class into small groups. Hand each group a Task Card, and give each student a Data Sheet. (We recommend starting with Task Card 1.) Together with the class, read aloud the steps of the activity to ensure everyone understands what to do. You may also want to have each group conduct an inventory of their materials to make sure they have everything they need.
- **3.** Have students do the activity and record on their Data Sheets.
- **4.** Make sure to leave enough time before the end of the period so you can have a class discussion about the activity. Invite groups to share their findings and results, including any challenges they may have faced.
- **5.** Gather students' data sheets to assess for understanding.

If you plan to continue the unit in your next lesson with the second Task Card, you might want to review the article with the class. In some cases, Task Card 2 builds upon Task Card 1, so you may want to quickly go over the first activity as well.

At the end of a unit, consider asking students to evaluate the topic and activities. This can be as simple as a thumbs-up or thumbs-down. Engage them in a discussion about what they liked or did not like and why. You might find this feedback useful for future lessons.

The two Task Cards feature hands-on activities that incorporate the following eight science and engineering practices—identified by the NGSS as essential for all students to learn:

- **1.** Asking questions and defining problems
- 2. Developing and using models
- **3.** Planning and carrying out investigations
- 4. Analyzing and interpreting data
- **5.** Using mathematics and computational thinking
- **6.** Constructing explanations and designing solutions
- **7.** Engaging in argument from evidence
- **8.** Obtaining, evaluating, and communicating information

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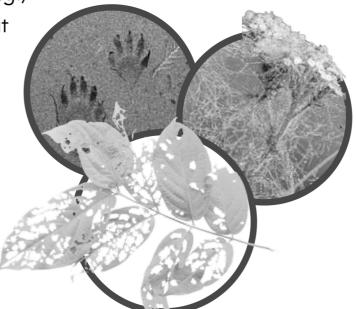
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