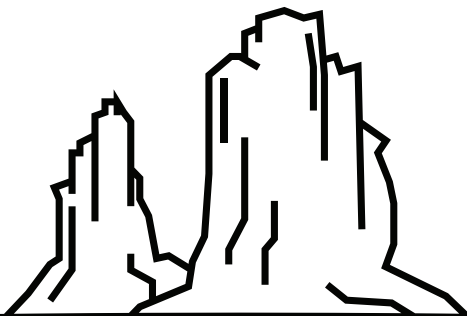


Join us as we learn about ecology. We'll explore what an ecosystem is, look for living and nonliving things near where we live, try different ways to clean up pollution and make some recycled art!

What is ecology?

Ecology is the study of ecosystems. An ecosystem is made up of all the living and nonliving things in a specific area. Your backyard, a prairie or an entire ocean are all examples of ecosystems. They are made of living things, like plants, animals and bacteria, and nonliving things, like water, air, sunlight and rocks. People are a part of ecosystems too. We make and use things that we get from our environment and we can have an impact on where we live too. Ecologists are interested in how ecosystems function and ways to keep them healthy.



Let's Read



Find a comfortable spot and read about ecology! Here are some ideas to get you started:

- *Exploring Ecosystems* by Ella Hawley
- *Recycle!: A Handbook for Kids* by Gail Gibbons
- *EcoKids* by Dan Chiras
- *Kids Can Recycle* by Cecilia Minden
- *The Lorax* by Dr. Seuss
- *Animal Habitats* by Tony Hare

You can download digital copies of these books for free from openlibrary.org. Here is how!

1. Go to openlibrary.org.
2. Click the blue "sign up" button on the top right to create a free account. You will be sent a confirmation email.
3. Sign in.
4. Type the book title and author into the search bar.
5. Find your book and click the blue "borrow" button.
6. Don't forget to return your book when you are finished reading it!

Keep going!

Set up an online reading group with some of your friends. You can read the same book, then talk about what you learned, or you can read different books and share cool ecology facts.

Ecosystem Exploration

What is an ecosystem? Earth is made up of many different living things and nonliving things. An ecosystem is an area where living organisms and non-living things interact with each other. Examples of interactions in an ecosystem might be plants using sunlight and water to grow, or an insect hiding under a rock to hide from a predator. Ecosystems can be as big as Earth itself, or as small as a drop of water. Let's look for the living and nonliving things in the ecosystem where we live!

Before you start, you should have:

- 2 or more pieces of paper
- Art supplies like pencils, pens, crayons, markers or colored pencils

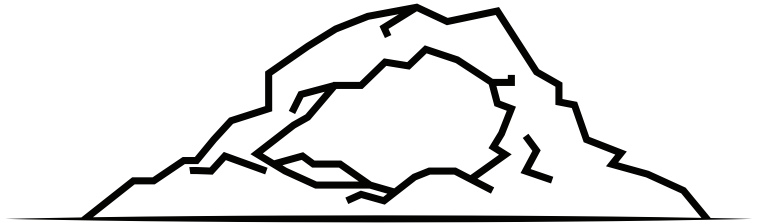
1. Take a walk around your neighborhood, park or yard.

2. Look for living things:

- Find 2 animals.
- Find 2 plants.

3. Look for non-living things:

- Find a rock.
- Look or listen for air blowing.
- Find water.
- Find somewhere the sun is shining.
- Find dirt or mud.
- Find something made by people.



4. Look for ways that the living and non-living things are interacting.

- Is a plant growing in the dirt?
- Is an insect hiding under a rock?
- How are the living things you see interacting with the living and nonliving things around them?

5. When you return from your walk, fold the paper like a booklet.

6. Use art supplies to make a journal of the living and non-living things in your neighborhood ecosystem. You can write about what you saw or draw pictures. Then, tell someone about what you saw!

Keep going!

Add yourself to the ecosystem! Draw or write about where you live and include the living and nonliving things you use or interact with every day.

More information on ecosystems:



<https://climatekids.nasa.gov/10-things-ecosystems/>

<https://www.nationalgeographic.org/encyclopedia/ecosystem/>

Pollution Solution

What can happen if an organism's ecosystem gets polluted? Many things can happen to an ecosystem that can be harmful to the organisms, or living things, within it. Sometimes, natural disasters like floods or droughts can change or harm an ecosystem which will reduce the number, or diversity, of organisms in the area. Sometimes, people do things that can change or harm ecosystems, like polluting water or air, or cutting down forests. Oil spills are one example of how ecosystems are harmed by pollution. Oil spills are caused when liquid petroleum, or oil, leaks from containers, vehicles or drilling rigs either on land or in the ocean. Oil can make animals sick, coat the feathers of birds so that they can't fly and block sunlight from plants. However, people can help to clean up oil spills and the organisms they affect. Let's try some different ways to clean up pollution!

Before you start, you should have:

- A pie pan or other large container
- 1 cup cooking oil
- Cup
- Water
- Spoon
- String or yarn
- Cotton balls
- Paper towels
- Sponges
- Optional: Stones
- Optional: Twigs
- Optional: Fabric (old rag, fabric scraps, etc.)
- Optional: Dish soap (Dawn or Joy works best)

Get started:

1. Fill the pie pan or container half full with water.
2. Add 1 cup cooking oil.
3. Stir the oil and water mixture to spread out the oil.
4. Think about different ways you could remove the oil from the water by using the different materials you have.
5. Try using the string first. Put any oil you remove into the cup.
6. Next, try using the cotton balls.
7. Try each of the remaining materials. Which worked the best? Which removed the least amount of oil?
8. Tell someone how you would clean an oil spill in the water.

Keep going!

Place different materials like stones, twigs and fabric into the oil and water. Try to remove the oil from the materials. Start by using clean water, then try cotton, paper towels and sponges. Finally, try using the dish soap. Which worked the best?

More Information on oil spills:



<https://www.youtube.com/watch?v=3DbSIAG3F3A>



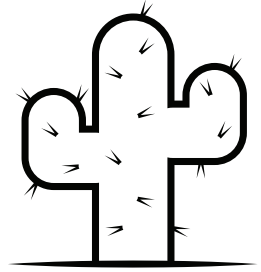
[https://www.nwf.org/~media/PDFs/Kids/oilspill_mini-page.ashx](https://www.nwf.org/~/media/PDFs/Kids/oilspill_mini-page.ashx)

Recycled Art

How can we help reduce pollution? People can contribute to pollution and the harming of ecosystems by throwing away a lot of trash. Plastics and other kinds of trash, like metals, don't break down quickly over time and can end up in oceans and landfills for hundreds of years. Animals can end up eating or getting caught in trash that is not disposed of properly. You can help reduce waste and pollution by using fewer plastic and single-use items, and by reusing recyclable materials you have at home. Let's reuse some things you might have thrown away in a creative way!

Before you start, you should have:

- Recyclable materials such as:
 - o Cardboard
 - o Plastic caps
 - o Newspaper or magazines
 - o Paper towel rolls
 - o Plastic cups
 - o Egg cartons
 - o Foam
- Glue or tape
- Scissors
- Art supplies like crayons, paint or markers



Get started:

1. Look at some of the art made from recyclable materials below.



• http://static.boredpanda.com/blog/wp-content/uploads/2014/12/recycled-diy-old-cd-crafts-7__605.jpg



• <https://adorableanklebiters.files.wordpress.com/2014/02/robert-bradford-recycled-toy-sculptures-2.jpg?w=360&h=360&crop=1>



• https://c1.staticflickr.com/3/2932/14258398038_05af6bfed3_b.jpg



• <https://creativejewishmom.typepad.com/.a/6a011570601a80970b019affea1eed970d-800wi>

2. Use the materials and your imagination to make your own sculpture or work of art!

Keep going!

Think of a way to use recyclable materials to make something to help the living things in your ecosystem. You could make a birdbath, hummingbird feeder or watering can for a garden. Get creative!

More information on recycled art:

<https://www.ecomena.org/recycling-art/>

<https://kids.niehs.nih.gov/topics/reduce/index.htm>

Let's Play: Recycle Relay

What is recycling? One way to help eliminate waste from the earth is through recycling. Recycling means that an object is used again for another purpose. Almost everything you use at home can be recycled. Plastics like bottles and containers, paper like cardboard and magazines, metal from aluminum cans or tinfoil, and glass can all be recycled.

Before you start, you should have:

- Clean, empty plastic items such as milk jugs, plastic bottles or yogurt containers
- Paper items such as newspaper, magazines or cardboard
- Clean, empty metal items such as cans or aluminum foil
- 3 bins or labeled bags for plastics, paper and metal
- Space to move
- A partner



Get started:

This can be an indoor or outdoor activity, but it's best done outside with lots of room!

- 1.** Mix the recyclable materials in a trash bag and place at one end of your yard or a space inside with room to move.
- 2.** Place the three bags or bins for paper, plastic and metal on the other side of the space.
- 3.** Have your partner call out a type of recyclable material, either "paper, plastic, or metal."
- 4.** Find the material in the trash bag and run to place it in the correct bin, then run back to the bag.
- 5.** Do this until all the recyclable materials are sorted.
- 6.** Switch with your partner and have them sort the materials while you call out the material types.

Keep going!

Race your partner! Have another person call out the names of the recyclable materials while two of you race or time yourselves and see who sorted the materials quickest.

More information on recycling



<https://kids.niehs.nih.gov/topics/reduce/recycle/index.htm>



<https://www.youtube.com/watch?v=VIRVPum9cp4>

