Conservation

This chapter concentrates on the relationship between humans and their environment. Throughout this manual we talk about ecology. Ecology comes from the Greek word meaning home and is the study of relationships between living things and their environment.

As human beings we sometimes forget that we have an impact on our environment. In this chapter we offer activities that explore the effects we have on our earth home, and address such important questions as “Am I using more energy than I need?”, “Where does my garbage go?”, “Where does my food come from?”, and “How do human decisions about land use affect other species?”

The “No Garbage Lunch” activity is intended as a challenge your class can do together. Like many important questions we explore in this chapter, this challenge is an invitation to be creative and practice discovering the costs and consequences of our actions so we can make a thoughtful decision.

Teaching Ideas:

Resource to Consumer Chalk Talk – Activity

From Carrot to Consumer – Handout

No Garbage Lunch – Handout/Activity

Our Garbage & Recycling – Handout/Songs

Land Use and You – Activity
Resource to Consumer Chalk Talk

Objective
To demonstrate the interdependence of jobs and resources to produce consumer products.

Materials
- Chalk board or similar surface and/or
- A large pieces of newsprint and markers

Activity
- Ask each of your students to label a piece of paper “What I Ate for a Day” and to make four columns headed “Breakfast”, “Lunch”, “Dinner” and “Snacks”. Have them write down everything they eat for one day and bring the list back to class.
- Have the students share their lists and make one master list on the board under the four headings “Breakfast”, “Lunch”, “Dinner” and “Snacks”.
- Choose one food (consumer product) for your discussion or let your class choose one.
- Lead a chalk talk discussion from source to product. Draw and label as you go. If your product has more than one ingredient, choose the main ingredient (e.g., wheat for English Muffins) to trace. It is important to elicit as much information from the students as you can. Be sure you have plenty of space – it can fill a whole chalkboard!

Things to retrace and emphasize:
- Each truck, car or machine = a nonrenewable energy use
- Each stop along the route = a new group of people involved
- Interdependence of jobs and resources to produce consumer products
- You may then want to divide the class up into small groups and have each group make their own production chain. Don't forget to have them share with the class.
From Carrot to Consumer

Name ____________________________
Activity:
* Share this page with students (perhaps enlarge for your bulletin board) and ask if they think everyone in your class can live up to the challenge of packing a lunch that produces no garbage.
* Read the paragraph (with the star) that begins “Lots and lots of energy goes into your lunch...”
* Ask the class to help you brainstorm a list of ways they could pack lunches for the day of the field trip without creating garbage. Some ideas are given below, but be creative and come up with more!
* Remember, you will need to pack out any trash, so the hike at the Preserve is a good opportunity to test your skill at meeting the No Garbage Lunch Challenge! “Once you’re done eating there is no garbage!”

![Diagram](image)

**Lots and lots of energy goes into your lunch before you even see, touch, smell or taste it! The sun provides energy for all living things. Farmers use human energy, gas, electricity to help food grow. Plus, farmers drive trucks that use energy to transport food from farm to processing plant to stores. Your car uses gas to transport food from store to home to school.**

**HOW?... DON'T BUY ANYTHING EXTRA:**

**A. Reduce**
- Plastic containers
- Paper, bags etc.

**B. Reduce by not buying garbage = extra packaging**
- Chips or pickles, love to live in a reusable yogurt container.

**C. Recycle**
- Paper, cardboard, glass, aluminum, tin etc.

**D. Rot**
- Decompose organic matter in a garden compost pile

**EXAMPLE:**
- A sandwich can fit into a cottage cheese container... cut in quarters.
- Chips or pickles, love to live in a reusable yogurt container.
- Water in a plastic syrup squirt bottle... easy to open and close.
- An apple can stand on its own. All wrapped in a Bandana.

**YUM.** Now, wipe your mouth with the Bandana.
Our Garbage
(Sung to the tune of "My Bonnie Lies Over the Ocean")

1st Verse: Our garbage gets thrown in the ocean,
            Our garbage comes up on the sand,
            So why don't we all get in motion;
            Together we'll clean up this land.

Chorus: Recycle, recycle, recycle your garbage today, today;
        Recycle, recycle, recycle your garbage today.

2nd Verse: The garbage truck picks up our garbage
           And takes it someplace "far away";
           When “far away” fills up with garbage,
           It’s here where the garbage will stay.

Chorus:

3rd Verse: Recycling reduces our garbage,
            Recycling saves resources, too;
            So save up your cans, bottles and paper;
            It's really the right thing to do.

Chorus:

4th Verse: Now hay fever season's upon us
           Our noses are telling us so.
           Instead of a boxed paper wiper
           A good old cloth hankie will do.

Chorus: Ah choo, ah choo, a good old cloth hankie will do, will do;
        Ah choo, ah choo, a good old cloth hankie will do.

Recycling
(Sung to the tune of “I've Been Working on the Railroad”)

I've been working on recycling, all the livelong day,
I've been working on recycling, let me show you the way.
We can't mix up all our garbage; select and choose with care.
You can help us clean up our Earth, you can do your share!

Clean up our Earth, Clean up our Earth,
Together we can clean up our Earth, our Earth;
Clean up our Earth, Clean up our Earth,
Together we can clean up our Earth!

Everybody's helping to recycle, everybody's helping I know,
Everybody’s helping to recycle, so a healthier Earth will grow!

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Land Use and You

Objectives

• To recognize potential land use conflicts and consider the effects of land use decisions on wildlife and on human communities.
• To gain a greater awareness of land use issues affecting students' communities.
• To practice developing and expressing a personal point of view, while respecting those expressed by others.
• To practice critical thinking skills.

Materials

• Chalk board, similar surface, or large pieces of newsprint, markers, and a bulletin board.
• Maps of your community (1 for every 3-4 students. Street maps will do with some imagination, but ideally these maps would show locations of businesses, parks, and so forth. Check with your local chamber of commerce—they may be able to help).

Activity

Students work in small groups using a local map to create two lists. One lists the various ways land in your community is used, and the second shows the types of habitat that exist in your community. After reasonable time has been allowed, call the class together and brainstorm master lists with your students. As you think of items for the list, write each item on the chalk board or large newsprint. Your “how land is used in our community” list should include roads, schools, shops, houses, theaters, offices, parks, and so forth. Create a second list showing the types of habitat that exist in your community. Are there meadows, streams, forests, beaches, parks, gardens, vacant lots? From the habitats on your second list, circle any areas where wildlife currently live.

For homework, ask students to interview neighbors, grandparents, and others who have lived in the community for a long time. They should try to discover what changes have occurred in land use in the past 30-50 years in this community. This exercise could include research utilizing library materials and public documents as well. What existed on the land where your school was built? Is there a park or open space area now that didn't exist 30 years ago? Are there any land use changes underway now? What is being developed in these places? What is being replaced? What effect do these changes have on wildlife? On human beings? Are there any conflicts between the needs of human beings and the needs of wildlife in your community?

Identify any conflicts between human needs and the needs of wildlife in your community. Make a third list of specific instances where these conflicts occur in your community. Lead your class in exploring both sides of one of these issues. Remember that human needs and the needs of wildlife are both important. Assist your students in thinking of at least three alternative ways to resolve the conflict between human and wildlife needs in this case. For each suggestion list positive and negative results for human beings and for wildlife. Ask
your students to think about how they would make this difficult decision if they were in charge of land use in your city. Who would be happy with their choice? Who would be unhappy? What kind of information would they need to make good decisions? Would they always decide to meet human needs first? Wildlife needs? Would they choose in favor of human beings some times and in favor of wildlife other times? Would decisions that protect wildlife habitat ever help human beings? Would decisions that serve human needs ever help wildlife? What are some of the ways that we help humanity when we protect wildlife habitat? Remind your students that difficult decisions like these take a lot of thought and require a lot of accurate information to make. Identify the government agencies responsible for making these decisions in your community (City Council, Board of Supervisors, etc.)

Encourage your students to read the local newspaper and look for articles and letters to the editor about any land use decisions facing your community. Keep a bulletin board display going for these articles. Encourage students to bring in information about how human beings and wildlife are affected by these decisions and include this information on the bulletin board as well. Discuss these issues together after establishing clear guidelines for respecting and accepting differences of opinion. Using the newspaper clippings, help students differentiate between opinions and facts expressed there. What is the difference between a fact and an opinion? Is it a fact if you agree and an opinion if you don't? Have the students do library research to uncover pertinent information for this discussion (for example, it would be a good idea to check the “facts” quoted in letters to the editor, and it would be informative to find multiple definitions of and synonyms for the words “fact” and “opinion”). Add the information from the library research to the bulletin board. Continue to build the bulletin board display until there is sufficient information to illustrate both sides of an issue thoroughly. Working together with the class, go through the bulletin board materials and use two different colors of highlighters to mark comments which are factual and those which are opinions. Use a third color for comments you still need to research before calling “fact” or “opinion”.

At this point you may choose to invite speakers from the community to come and discuss each position with your class. Prepare your students by helping them formulate careful questions for the speakers designed to identify facts and opinions. If it is a controversial issue, you will play an important role in establishing each person's right to express differing opinions, and to teach your students the value of tolerance for diverse views. On the other hand, if all students in your class lean toward the same opinion, it would be wise to assign the “Devil’s Advocate” role to a group of students who will be responsible for researching and presenting the opposing opinion regardless of their true feelings. After each presentation, you can ask students to reflect on how their research affected their true point of view. Did anyone change their mind? Do they now think the issue is simpler or more complex than they originally believed? Is it useful to know more about a point of view you disagree with? Why or why not?