



Life on the Land

Lesson Description

Students consider the other important uses for land besides food production.

Teacher Background

This lesson highlights wise *land use*. Land use refers to the ways in which private and public space is used. For example, land use can be residential, commercial, governmental, agricultural, or recreational. People often think of soil only as the substance in which we grow our food, but it has other important uses for humans.

One-third of Earth's surface is land, and only a portion of that land is suitable for human habitation. How we use this precious *natural resource* affects the health and happiness of all people. The factors that most influence land use are the physical properties of the land—the soil, slope, and water availability. Competition and other social and economic factors also come into play when communities decide how to use private and public lands. Often, a community's *planning commission* must make difficult decisions about the restrictions that apply to various land uses.

Encourage your students to consider land availability, soil productivity, locality, and safety during your

Subjects

Art, Geography, Language
Arts, Science, Social Studies

Time

Prep: 15 minutes

Activities: 2 ½–2 ¾ hours
(not including Extensions)



Student Objectives

Students will be able to:

- give examples of humans' use of the land;
- demonstrate an awareness of the trade-offs involved in land use; and
- illustrate how a planning commission might develop a town.

Materials

For the Class

- Apple
- Small knife
- Vegetable peeler
- Stapler
- Chart or poster paper
- Paper towels or toilet tissue

For Each Student Group

- Several paper bags of different sizes
- Several crayons or markers
- Colored construction paper
- Tape
- Newspaper or used white paper

discussions about land use. For example, the buildings in a crowded, urban environment will differ from those in an open, rural environment.

Learning Cycle

Perception: 30 minutes

- 1 Ask students to think about where their food comes from. Is their food grown nearby or far away from their home? (Answer: most food is probably grown or raised in other parts of the country, transported, and then purchased at local grocery stores.)
- 2 If applicable, ask students to brainstorm foods grown locally.
- 3 Demonstrate the limited amount of land available for growing food with the model in Figure 5.1. Discuss what will happen to Earth if we lose such a precious resource as land. Relate the idea of land use to students' lives.
- 4 What is soil used for besides growing food crops? If applicable, discuss students' yards and gardens—do the gardens take up more space than the homes?
- 5 Brainstorm other uses of soil or land and list ideas on the board or poster paper. Examples of land use are:
 - surfaces for homes, schools, hospitals, businesses, and airports
 - surfaces for roads and highways
 - surfaces for mining coal, ore, gravel, and minerals



- surfaces for parks, recreation, and wildlife
- land for growing food and fiber crops
- land for raising animals for food

Figure 5.1. Only a small portion of land is capable of producing food.



1 Imagine the Earth as an apple.



2 Cut it into fourths. Only one part is land—the rest is water. Set aside the three sections that represent water.



3 Cut the land section in half. One part represents land that is mountains, deserts, or covered with ice. Set this part aside.



4 Cut the other livable area into fourths. Three of these are too rocky, wet, hot, infertile, or covered with roads and cities to grow food. Set these three aside.



5 There is now only $\frac{1}{32}$ of a slice of apple remaining. Peel the skin from this tiny piece.



6 The skin represents the soil on which the food is grown that must feed all the people on Earth.



- 6 Explain to students that sometimes there isn't enough land for all uses and people must decide what is most important. Describe town planning commissions—people who decide how to use the land.

Exploration: 45 minutes

- 1 Ask students to think about land uses they consider most important. How is land being used in your community? Record ideas on the board as students discuss important land uses.
- 2 Divide the class into small groups and assign two specific uses of land (e.g., home, fire station, school, park, store, gas station, city hall, hospital, power plant, and vegetable farm) to each group. Groups should spend about 10 minutes to determine how much space is needed for that particular use, if the institution should be in a business or residential area, and how much green space would be left.
- 3 Each group should present its plan for land use to the class, which acts as the town planning commission. The planning commission should vote on whether to approve the group's plan. The planning commission may refuse a request to build if members feel that a building will be built in an inappropriate part of town.
- 4 As a class, discuss how much space each building, farm, park, etc. needs. Have the class reach an agreement on how to plan the town. Help students understand that land space is important for many reasons besides growing food.
- 5 Have groups draw and label pictures of the planned town, or draw one large map on poster paper.



Application: 1 hour

Prep Clear a space in the classroom about 2.5-by-2.5 meters so that students can develop an ideal city that incorporates varying uses of the land.

- 1 Divide students into small groups from the Exploration section.
- 2 Pass out different size paper bags. Have groups decorate the bags like buildings using markers and construction paper, then stuff the bags with crumpled newspaper. You can staple the students' bags at the top to make buildings.
- 3 Use the maps to arrange the town. Set out the paper-bag buildings along strips of paper—toilet tissue or paper towel—that represent streets. Suggest adding a garbage dump, power plant, and parks, and have the class vote on where these buildings and areas should be built.
- 4 As students arrange their city, guide the discussion to past and future uses of land in your own town.

Evaluation: 15–30 minutes

Observe students as they work and discuss land use within their groups. At the end of the activity, each student should be able to identify at least three uses of land and explain why those uses are important. For example, students might list houses or apartment buildings as places for people to live, businesses and stores as places to buy things, schools where children are educated, parks where people can play or relax, and farms where food is grown. Younger students can draw pictures of land use while older students might write a few sentences or short paragraphs, or give a presentation on land use in their community.



Extensions: 30–45 minutes each

- If space is limited in your classroom, create a land puzzle instead of a paper-bag city. First, cut large sheets of butcher paper into seven or eight irregular pieces like a jigsaw puzzle. Then assign a different land use—such as homes, parks, mines, farms, and businesses—to each student to draw on the pieces. By fitting the pieces together, students can demonstrate how people work together to create good land use. Students could also discuss how some land uses are incompatible when put side-by-side. For example, a smelly garbage dump may be incompatible next to a park.
- Students can dramatize their city by role-playing mayors, police officers, firefighters, teachers, doctors, and farmers. Designate a city hall, police station, fire station, school, hospital, and farm in the paper-bag city. Consider different emergency scenarios such as a fire or a storm and ask how students would help one another.
- Tape strips of poster paper together and create a wall mural of a town or city. Students should remember to show gardens, parks, and farms.