

**Subject/Target Grade**

Social Studies and Science/
Upper Elementary (4-6)

Duration

60 minutes – Classroom setting

Materials

per class

- *Analyzing Land Use Readings* (answer key)
- *Analyzing the Impacts of Land Uses* (answer key)
- Readings on MEECS Land Use audio CD
- Photo of farm, Comerica Park, Seney National Wildlife Refuge, and forest on MEECS Land Use CD

per small group

- Enough copies of the following readings for one-fourth the class to have each:
A Farm in Michigan, A Visit to Comerica Park, A Visit to Seney National Wildlife Refuge, and Using the Forest in Many Ways (student resource)

per student

- highlighter
- *Analyzing Land Use Readings* (student activity)
- *Analyzing the Impacts of Land Uses* (student activity)
- *Lesson Assessment* (student assessment)

Reflecting on How the Land Is Used

Lesson Overview

Students examine short readings about individuals' land use preferences and identify the different views of the land held by different individuals. They compare and contrast these individual views of the land.

The big idea for this lesson is that land can be used for many different purposes. Different land uses have different impacts on plants, animals, and people.

Students examine three essential questions: Why do people use land differently? Why do land use conflicts occur? How do different land uses impact plant and animal life and people?

Objectives

Students will be able to:

1. Identify and discuss different views of land use.
2. Analyze reasons why conflicts over land use occur.
3. Explain why people view land use differently.

Michigan Grade Level Content Expectations

- Show how science concepts can be illustrated through creative expression such as language arts and fine arts. **S.IA.04.13; SS 4–G1.0.4; SS 4–P4.2.1; ELA S.7**
- Show how common themes of science, mathematics, and technology apply in real-world contexts. **SS 4–H3.0.1; SS 4–G1.0.3; SS 4–G1.0.4; S.RS.04.14; S.RS.04.16; S.RS.04.17**
- Describe positive and negative effects of humans on the environment. **S.RS.04.18; SS 4–G5.0.1**
- Describe ways in which humans alter the environment. **SS 4–G5.0.1; S.RS.04.18**
- Describe major features of the earth’s surface. **SS 4–G1.0.5; SS 4–G2.0.2**
- Describe the location, use, and importance of different kinds of resources and explain how they are created and the consequences of their use. **SS 4–H3.0.3; SS 4–E2.0.1**
- Organize social science information to make maps, graphs, and tables. **SS 4–G1.0.3**

Background Information

There is a limited amount of land on Earth. Some land is suitable for many different types of land uses. Other land is suitable for only certain uses. Different groups of people view the land in different ways, which has caused conflicts between cultures at times in our history. In North America, different groups of people have viewed the same land in very different ways. For example, the interior of North America is a vast grassland, often called the prairie. Michigan is on the eastern edge of the prairies, where the natural grasslands give way to trees. Over time, the prairies have been occupied by different groups of people. It is the very same land, but its use has changed greatly.

First, the Native Americans relied on the grasslands for hunting and growing crops. The prairie with its grass and animals met their needs. Next came people who wanted to raise cattle. The grasslands were ideal for cattle, and huge herds grazed on the grasslands from Texas to Illinois and Michigan. The herds of cattle gradually replaced the original herds of buffalo, deer, and elk that had been a food supply for the Native Americans. By the time of the U.S. Civil War,

a new group of people had arrived in the grasslands. Many of them came from Europe or the eastern United States. They were farmers by tradition, and the grasslands were plowed and the soil planted with crops such as wheat, corn, potatoes, and barley. The land use had changed again.

The railroads and rivers that connected growing cities and towns introduced the next change. Chicago, Louisville, St. Louis, Minneapolis, Detroit, and Bismarck developed as urban land uses on the prairies. Industries grew in the urban centers. Coal, iron ore, petroleum, and other minerals, as well as agricultural products such as wheat, corn, flax, and potatoes, provided the raw materials for the industries. People from distant places migrated to the growing urban centers to find work, and the centers expanded even more with the new arrivals. The next major land use change occurred near the urban centers. Vast expanses of land surrounding the cities were no longer used for agriculture. Suburban and rural lands were used for houses, shopping centers, business centers, and recreational areas such as golf courses and green belts (a strip of open space marking the boundary of a community and often used to break the urban sprawl). That process of land use change continues to the present.

The same land the Native Americans viewed through their cultural lenses was viewed very differently by individuals and groups of people at a later time. Land use and land cover are constantly going through those changes based on who is using the land and their plans for it. Forests are a good example. Trees provide lumber for buildings, paper for newsprint, camping places, and help conserve water. Each is a suitable land use serving a different purpose.

Local communities undergo land use changes in a similar way. Land that was once used for a particular purpose may no longer be used in the same way. In urban communities, the relocation of an industry may leave vacant parcels of land. In rural communities, the land once used to store harvested crops near the railway may now be used for a retail or farm supply store. In some parts of Michigan, land covered by forests is now used for golf courses. In this lesson, the views that several people have of land use/land cover will be examined.

Procedure



1. Vocabulary development.

Remind students that some words have more than one meaning. For example, *game* can mean an amusement; it can also mean wild animals killed for food. *Horn* can mean a noisemaker on a car or bike; it can also mean a hard structure projecting from an animal's head.

If students are unfamiliar with the term *values*, you will need to spend some time developing their understanding of the term. The following is one method for doing so.

Value is another word that has two meanings and both meanings are important in this lesson. One meaning of value is what a person believes to be right, important, or good. Explore this definition of *value* by asking the following questions:

In a democracy, an important value is freedom. What might be another important value to people who govern themselves? [Many answers are possible: participation, education, or compassion for others.]

Bethany's family volunteers every week at a homeless shelter. All the members of the family help by cooking, serving food, or playing with children at the shelter. What values are important to Bethany's family? [Helping others, compassion, and service.]

DeRon's parents do not allow him and his brother to play video games or watch TV on school nights. When they have finished their homework, they play board games with their parents. What does DeRon's family value? [Education, hard work, and family togetherness.]

If appropriate, ask students to compose questions like the ones about Bethany and DeRon's families, drawing on their own family

experiences or the experiences of families they have read about in books. When they have created their questions, they could take turns asking them to classmates and answering their classmates' questions.

Explain that another meaning of *value* is worth, especially economic worth. If we get something on sale, we might say it was a really good value. If someone owns a piece of land, we might ask what the value of the land is, meaning how much money they could get if they sold the land. However, the land might also be important to them because of their personal values; if the land is outside the city and trees grow on it, that land might be important to them because they believe nature is an important value. In this lesson, students will explore both ways in which the term *value* is important in thinking about land use.

2. Analyze case studies of individuals using the land.

Use a think-pair-share to ask students to name their favorite place. Be prepared to or record these on a sheet of paper. Allow time for a variety of responses. Tell students that a person's favorite place may tell a lot about their values—what they believe is right, important, or good. *For example, if a person's favorite place is the library, what might be some of their values?* [Perhaps learning and quiet.] *If a person's favorite place is the forest, what might they value?* [Perhaps nature and peace and quiet.] Save the favorite place information since you will use it again in the review.

Tell students that people's values influence how they view land use. Students are going to have the opportunity to look closely at some case studies of values and land use.

Organize the students into four groups and give each group one of the readings; all students should also have a highlighter and a copy of the student activity, *Analyzing Land Use Readings*.

In their groups, students should read their case study and use the highlighter to identify the values that influence how the individual in the case study viewed land use. Ask each group to complete the *Analyzing Land Use Readings* student activity worksheet.

Depending on your students' experience working in groups, you may create jigsaw groups to share information about the case studies; these groups of four should include one student from each of the original four groups. Each student should share information about their case study with the group; students should complete the handout for all four case studies based on information from others in their group.

As an alternative, you may have the four groups share information in a large group, so that you can clarify and expand on the information reported, ensuring that all students have a grasp of all four case studies. (See the answer key for the *Analyzing Land Use Readings*.)

The readings are also included on the MEECS Land Use audio CD for listening. The class may read along in each of the readings or may focus on listening. If students listen to the readings, then they may continue the steps as if they had first read them.

If your students are unfamiliar with any of the four places depicted in the readings, the PowerPoint presentation included on the MEECS Land Use CD can be shown for a good visual of these places.

3. Discuss the values that people attach to each land use.

Conduct a class discussion of the values that people attach to the different land uses in the readings. You may use the following questions to stimulate discussion:

What are the values of each person?

[*A Farm in Michigan*: Farmer values the land for growing crops, enjoys working with animals, values farming as a way of life.]

[*A Visit to Seney NWR*: Geographer: values conservation and natural areas; studied in college to prepare for a job that would be enjoyable; values wetlands, animals, and plants living in that habitat.]

[*A Visit to Comerica Park*: Students value organized sports, such as baseball, and the satisfaction they get as spectators; they value the newness of the park and the alternatives it provides for recreation and entertainment.]

[*Using the Forest in Many Ways*: Conservation Officer values the natural environment, values the ways that people and the natural environment may interact, and values the wise use of resources for economic development.]

How might a person's cultural background affect their views of the land?

[*A Farm in Michigan*: Farmer's family tradition is agriculture and the farmer continues to honor and value farmland.]

[*A Visit to Seney NWR*: Geographer was raised in Marquette, an urban area, and values the natural setting available at the wildlife refuge.]

[*A Visit to Comerica Park*: Young people in a large metropolitan region hear about and observe changes in sports team, recreation parks, and organized athletic events. This is determined by their knowledge of the baseball park and enthusiasm to visit. It is similar to the enthusiasm for theme parks.]

[*Using the Forest in Many Ways*: Conservation officer was active in the out-of-doors as a child and believes the natural resources should be used but protected. This value reflects a cultural tradition that is well established in Michigan.]

How do people's values affect the impact they have on the land?

[People who have considerable positive experiences with the natural environment

may feel more comfortable and be reluctant to make major changes. They value the out-of-doors, recreation, and nature. People who value land as a resource to be used, such as in built environments, may see the most important use of the land being the building of structures, mining minerals, or clearing the land for various uses. The value people hold for the land impacts the way they use it personally, as well as the way they view its use by others.]

4. Examine the impact of land uses in the case studies.

Tell students they are going to look at the impact of different land uses, using the readings. As a class discussion and using the board, ask students to list possible consequences from each land use, focusing on people, plants, and animals. [Examples: Comerica Park would have major negative impacts on plants and animals because habitat would be removed. The farm and the managed forest would also have effects on plants and animals by providing habitat for certain animals. Farm crops are harvested and that removes land cover, thus reducing or removing the land cover. Forest land cover remains as habitat throughout the year. The Seney National Wildlife Refuge would have positive effects by providing a positive environment for animals and insects. Mixing agricultural land with forest has been positive for Michigan's deer population growth.]

Distribute the *Analyzing the Impacts of Land Uses* student activity worksheet and ask students to estimate the impact of the different land uses on plants and animals. Also have students estimate the impact that people have on each land use in the third row of the worksheet. Following are several suggestions for estimating the impacts on plants and animals.

Which land uses have the highest impact on plants and animals? Please be sure each of these deals with the land use and not the person/user. [See the *Analyzing the Impacts of Land Uses* answer key. Farming has the highest impact since it requires clearing land and planting crops. The conservation officer decides on how the forest will be harvested and some trees are cut. The Seney NWR is protected from most changes because it is a refuge. Little is done to change in the natural environment. Comerica Park is a land use designed for people and little impact is made there by visitors, although creation of the park completely changed the landscape.]

Where do you see the role of government in these readings? [The readings on Seney NWR, the forest uses, and agriculture have clear indications of the role of government. The federal government acquired the land for Seney NWR and is in charge of maintaining and protecting it. If you visit, you may notice that the people who work there are part of the National Park Service. Areas of the Upper Peninsula and the Lower Peninsula are U.S. National Forests. The U.S. Forest Service is part of the U.S. Department of Agriculture and those agencies are responsible for managing and protecting the national forests. The Huron National Forest is one example in Michigan. Michigan also has state forestlands that are under the management and protection of the Department of Natural Resources. Other forests in Michigan are in private holdings and are not part of the U.S. national or state forestlands. Agricultural land is mostly under private ownership. Federal and state government provide programs and services to the owners of agricultural land for erosion control; in Michigan county government, there is usually a drain commissioner who is in charge of drainage ditches, some of which are in agricultural areas and some in urban and suburban areas. The redevelopment in Detroit of Comerica Park also involved local and state government.]

5. Discuss *A Farm in Michigan* reading.

This reading highlights the idea that Michigan's rural land is changing into urban and suburban land. Stimulate discussion of this idea by asking the following questions:

What are the cultural, economic, and personal reasons for the farmer's attachment to the land?

[The farmer grew up on the land and wants to pass it along to his/her children. The farm is the way the family makes its living. He seems to value the open spaces and the fresh air.]

The farmer has conflicting feelings about what to do with the land in the future. What is the conflict? [Between economic gain by selling the land and wanting to remain a farmer to pass the farm along to his/her children.]

How do other people want to use agricultural land? [Residential housing.]

How are these two land uses different? [Many answers, including the size of an individual plot and the amount of work activity. The farm would produce more dust, more smells, and possibly more chemicals. The residential use would depend on the stewardship of the owner.]

Contrast the values of individuals and groups who prefer the residential land use with the values of people who favor agricultural land use. [The farmer thinks of the land much more like a business; homeowners think in terms of shelter, but also in terms of relaxation, recreation activities in a yard, storage of cars, boats, lawnmowers, etc.]

6. Compare *A Farm in Michigan* to *Using the Forest in Many Ways*.

What are the products being produced from the land? [Crops and lumber.]

What is the conflict each person sees?

[The conflict is between different kinds of land uses with different kinds of economic or social returns.]

A similar mix of discussions regarding the two remaining readings may be included in a jigsaw or group discussion.

Guide students to begin forming conclusions about land use decisions by asking the following questions:

Is it acceptable for people to disagree regarding land use? [Certainly.]

Why does disagreement on land use occur?

[Because different people have different personal goals. One of the ways people and groups make a decision is to put an economic value on the land. The land use with the highest value can afford to purchase the land. Value in monetary terms may be less than the value placed on land for other reasons, such as historic monument, a park, or cemetery.]

Is it always possible to reach a compromise on which land use is the most preferred?

[No. In some cases the decision to use land in a particular way is agreed upon by everyone involved. This is usually the case for land use with schools and churches since they are usually viewed as good neighbors. When governmental planning commissions consider land use requests, they often have to reach a compromise. Compromise may be necessary for any single piece of land, or for the mix of land uses over a large area. Compromise is the preferred means to settle land use conflicts, since everyone usually gets something they want in a compromise.]

7. Review.

Return to the list of favorite places and answer the questions on *Analyzing the Impacts of Land Uses* student activity worksheet (column 1) for students' favorite places.

Assessment Options

Distribute the *Lesson Assessment* student pages (you will want to copy each page of the student activity assessment as separate sheets). Read the following passage to the class as students read along on the student activity sheet.

Two vacant pieces of land are near your school. One is along a small stream. It has woods and wildflowers. The other is next to the school playing field. It is mostly grass, but there are several large trees. Both are available to use. The school prides itself on its environmental education projects. It also has a growing after-school sports program. Think about the two pieces of land and the school programs. You are to answer either (a) or (b) after you think about the choices available.

- (a) You are to recommend the land use for each piece of land. Support your decision with two thoughtful reasons. One reason should support the land use decision you make for each piece of land.

– OR –

- (b) Draw a map of the two pieces of land. Use symbols to show how the land should be used.

Write answers on Lesson Assessment, page 2.

Adaptations/Extensions/Enhancements

Enhancements

1. **Expert in the Classroom.** Many of Michigan's counties have an office of the MSU Agricultural Extension Service. The office may be contacted to arrange for a visiting speaker to discuss land use issues. It may be possible to have the Extension Office refer two people with different positions regarding land use in the community. One person could visit on one day and the other another day. The students can take notes and then compare and contrast the positions presented by each speaker. Note that each speaker should be informed that the other will also participate in the study of the topic, but on a different day.
2. **Identifying Values that Impact Land Use.** Ask students to list some of their own values. What do they believe is right, important, or good? Tell each student to create a poster showing the relationship between individual values and views on land use, using one of their own values as an example. Encourage students to think beyond the ideas discussed in this lesson. For example, valuing education might influence someone to want to devote more land to schools, outdoor learning labs, etc.

Other resource persons in the community may serve as speakers. Real estate agents, Farm Bureau or Grange members, developers, farmers, and other businesspersons to present their particular point of view on land use issues.

Extensions

1. **Farmland Development.** In this lesson from the curriculum *This Land Is Your Land: Lesson Plans for Land Use* (United Growth for Kent County and the Michigan State University Extension), students graph and interpret trends in farmland and population data. They also plot land use scenarios and evaluate the pros and cons of developing farmland. This lesson can be found at http://www.msue.msu.edu/portal/default.cfm?pageset_id=27672&page_id=158096&msue_portal_id=25643, or as part of your MEECS materials kit.
2. **Investigating Land Use Research.** Introduce students to the idea that land use is a topic for scientific study. Researchers study patterns of land use, how land use changes, and the effects of such changes. They also develop tools for improving land use planning. Lead students in brainstorming a list of questions they would like to ask a land use researcher. Encourage students to think of questions related to the topics covered in this lesson—the impact of values on land use, changing uses of land that was formerly agricultural, and conflicts about land use. Arrange for such a researcher to visit the class and be interviewed by students. Local college or university departments of geography, urban planning, and resource management/development, the Michigan Land Use Council, and nonprofit organizations interested in land use issues are potential sources for researchers.

There are numerous options available. For example, a discussion with a researcher can be completed by telephone between the class and the researcher. Class questions should be prepared before the researcher either visits or has a telephone conversation. Written questions

may be submitted and responded to by e-mail. Video stream on the World Wide Web is also possible if both locations have the necessary technical capabilities. Research on land use usually takes place in government agencies, universities, and private firms. The agricultural extension service at Michigan State University may be able to put a class in contact with a researcher.

3. **E-Mail Discussion with Local Resource Planner.** Contact a resource planner in your local area (such a person may work for city or county government) and ask whether that person would be willing to take part in an e-mail discussion with your students. Students would develop and e-mail questions to the planner, who would answer the questions. Be sure to inform the planner of your students' grade level and what they are learning about land use through this curriculum. Once these arrangements have been made, work with students to develop several questions for the planner. Small groups can be assigned the responsibility for certain questions; those groups will e-mail the questions to the planner and then report the answer to the rest of the class.
4. **Opposing Viewpoints on Land Use Planning.** Invite a local land developer or real estate representative to talk with the class about the business aspects of land use planning. The next day, host a land conservancy or land use protection advocate to talk to the class about land use issues from that perspective. Following the two visits, help students create charts comparing and contrasting the views of the two visitors. What values seem to be most important to each person? How are those values reflected in their views on land use?

Additional Resources

The following resources provide additional information about land uses, the reasons for the land use, and how the land is impacted by people. Several of the sites are web cams. They show land use in specific regions and locations. The teacher would have to visit the site to classify land uses visible on the web cams.

Bureau of Land Management. (2011). *In the Spotlight*. Retrieved June 2, 2011 from <http://www.blm.gov/wo/st/en.html>

Major League Baseball. (2011). *Comerica Park: Raising the Expectations*. Retrieved May 3, 2011, from <http://detroit.tigers.mlb.com/NASApp/mlb/det/ballpark/comericapark.jsp>

National Geographic Society. (1996-2010). *Public Lands – America's Backyard*. Retrieved June 2, 2011 from <http://www.nationalgeographic.com/geography-action/lands.html>

National Geographic Society. (2011). *Nat Geo Games: Plan it green for PC*. Retrieved June 2, 2011 from <http://shop.nationalgeographic.com/ngs/product/kids/toys-and-games/all-games/pc-and-console-games/nat-geo-games%3A-plan-it-green-for-pc?code=NG90319>

Phyllis Haehnle Memorial Audubon Sanctuary (2011). Retrieved May 3, 2011 from <http://www.haehnlesanctuary.org/>

U.S. Fish & Wildlife Services. (2004). *Seney National Wildlife Refuge*. Retrieved May 3, 2011 from <http://www.fws.gov/midwest/seney/>

Reading 1: A Farm in Michigan

Have you ever driven a tractor? I started driving tractors when I was in elementary school. Driving a huge machine like a tractor may sound like fun to you, but it's part of the work on a farm. As a kid, I helped my parents work this farm, and it wasn't all fun. I also had to feed the animals and clean up the barns. That can be a smelly job!

Now, I run the farm where I grew up. Some day, I hope my children will own the farm. It's a big part of our family's heritage, and it's a great farm. The land in this part of Michigan is good for growing crops. Just reach down and take a pinch of this soil. You'll notice it sticks together. It is a sandy loam. Crops like this soil. They also like the 50 centimeters of rainfall Michigan gets every year.

I grow wheat, corn, and hay. I feed the corn and hay to my pigs, sheep, cattle, and horses. I sell the wheat and the animals. I work hard and feel good that I am helping feed my neighbors in Michigan. But I am not going to get rich being a farmer.

Sometimes I wonder if I should sell my land. Some people would like to buy it to build houses and apartments. Streets would cross the fields. People would drive cars where I drive my tractor now. They might make one of my fields into a golf course. I don't know if I would like that. But I would have a lot of money to send my children to college.

Some of my neighbors live in homes that were built where there used to be a farm. I wonder what they would say if I asked them why they moved to the country. Maybe they wanted lots of fresh air or more land for their families to enjoy. Maybe they were tired of crowded streets.

Michigan has a Commission to study the changes in farmland. It was started by the Governor. They say there is less and less farmland each year. Other people say we have plenty of farmland.

Kalamazoo, MI 2004

Reading 2: A Visit to Seney NWR

What is your favorite place? Mine is the Seney National Wildlife Refuge. It is located in Michigan's Upper Peninsula. Much of the refuge is wetlands and forests. The wetlands include lakes, streams, and marshes. The forests have pine and fir trees. There are birds, deer, bears, and other small animals—that includes me!—in the forest.

Early mornings in the Seney National Wildlife Refuge are peaceful and quiet. One summer morning I took my canoe to the refuge. I was floating on the river when I heard a gentle splash in the water. A bald eagle caught its breakfast—a fish—in its talons. It flew just a few feet above my head. Its huge wings lifted it above the trees.

A refuge is a special land use. The impact of individuals is very small. People who walk stay on trails. Others may drive their cars on special roads. They stop along the way (at marked places) to view animals and plants.

The Seney National Wildlife Refuge is preserving wetlands. Wetlands are important for animals and plants. People and animals enjoy wetlands. It is unlikely that this area will change much because it is a National Wildlife Refuge. I often think about the refuge when I am at my home in Marquette. I can sit at my computer and view pictures of the refuge on the web cam. My work as a geographer with the Department of Environmental Quality keeps me outside to enjoy nature. I often think that more people should visit Seney National Wildlife Refuge. I wonder if more visitors would cause changes in it.

Marquette, MI 2004

Reading 3: A Visit to Comerica Park

What is your idea of a great day? Mine is going to Comerica Park to watch the Detroit Tigers play. That's what I'm doing today. I'm looking forward to having fun with my friend, Renae, and 40,000 other people.

"Is that it?" I asked Renae. "No," she replied. "That is Ford Field. It is where the Detroit Lions play." Ford Field and Comerica Park are located next to each other. They use a lot of land near downtown Detroit.

Then I see it. Wow! Across the entrance "Comerica Park" appears in huge letters. We park and walk a long way from the car to the gate.

We walk inside the Park. There is a shopping mall and office buildings. A neatly decorated sign points to the Ferris wheel. What a sight! The Ferris wheel cars are shaped like large baseballs with seats for five people. There is also a carousel. Brightly decorated tigers go round and round as baseball theme music plays.

Comerica Park is packed today. Our seats are high in the stands and we have a great view of the playing field. We wondered how this land was used before Comerica Park was built. We are certain that the landscape has changed. Stores and restaurants are nearby so some old stores and restaurants were probably torn down to make room for the park. Comerica Park was built to be used by many people. It is a really big building with enormous parking lots. There have been huge impacts on the land.

Suddenly music fills the Park. Near the centerfield wall a fountain sprays colorful water. It is great! I can't wait to e-mail my sister. She's a geography student at Western Michigan University. She is studying land use in cities. I think Comerica Park is a place she should visit.

Livonia, MI 2004

Reading 4: Using the Forest in Many Ways

Do you like to climb trees? When I was a small girl, that was my favorite thing to do. I still love the forests along Lake Huron. People hike, camp, and explore in the forest. Birds, deer, mice, squirrels, chipmunks, and foxes live there. The trees are tall and straight. Now my job is to manage the forest. I am a conservation officer.

The trees in the forest have been here a long time. There are stumps where big trees used to stand. In the early 1900s, trees were cut for lumber. Houses and wooden ships were built from that lumber. People still live in many of those houses in Alpena. Both houses and ships have economic benefits. One is to shelter people. The other is to transport products on the water. Trees are a natural resource that have a direct economic benefit. They also have another benefit. People enjoy the forest. Besides that, paper and cardboard come from trees. I enjoy and use trees every day.

The tallest trees in the forest are about 75 years old. Most are younger. Every ten years some of the older trees are cut for lumber. The small trees grow very close together. Some of them are also cut. They are not big enough for lumber, so they are used to make paper. Others are left to grow. In 50 years, they will also be cut.

People want to save and consume the forest at the same time. Is that possible? I want the forest to stay the same so I can hike and camp there. But I also use wood products. It is possible to both cut some trees and let others grow. We must use resources wisely. If we use resources in a smart way, then we should never run out.

Alpena, MI 2004



Analyzing Land Use Readings

	Farm	Seney NWR	Comerica Park	Forest
What land use did each reading present? Briefly describe it in the correct box.				
What did the person in the story believe was right, important, or good about the land use?				



Analyzing Land Use Readings

	Farm	Seney NWR	Comerica Park	Forest
What land use did each reading present? Briefly describe it in the correct box.	Farmland; growing crops and raising animals	Protected natural areas, recreation for hiking, bird watching, canoeing	Recreation	Forestland
What did the person in the story believe was right, important, or good about the land use?	Family heritage, helping others through food production, hard work	Wildlife conservation, wildlife must have land and water where they live	Entertainment and recreation; it is fun to attend sporting events	Spend time outdoors; viewing animals and plants, economic benefits

Analyzing the Impacts of Land Uses

Different land uses affect plants and animals differently. When land is used in different ways, it has different levels of impact on plants and animals. This sounds complicated—and it is. The table below is set up to help you analyze the impact of the four land uses you learned about in the readings.

High = big impacts Low = small impacts

	Farm	Seney NWR	Comerica Park	Forest
Think about the way this land use has changed the environment. Does this land use have a High, Medium, or Low impact on plants?				
Think about the way this land use has changed the environment. Does this land use have a High, Medium, or Low impact on animals?				
Think about the individual person in each reading. Does that person have a High, Medium, or Low impact on the way the land is used in the story?				





Analyzing the Impacts of Land Uses

Different land uses affect plants and animals differently. When land is used in different ways, it has different levels of impact on plants and animals. This sounds complicated—and it is. The table below is set up to help you analyze the impact of the four land uses you learned about in the readings. (Answers will vary. These provided below are sample answers.)

High = big impacts Low = small impacts

	Farm	Seney NWR	Comerica Park	Forest
Think about the way this land use has changed the environment. Does this land use have a High, Medium, or Low impact on plants?	<i>High</i>	<i>Low</i>	<i>There is little impact on plant life at the park since there are few plants. However, there was other plant life there before Comerica Park was built. It has greatly changed.</i>	<i>Low</i>
Think about the way this land use has changed the environment. Does this land use have a High, Medium, or Low impact on animals?	<i>High or Medium</i>	<i>Low</i>	<i>Same as for plants but for animals</i>	<i>Low</i>
Think about the individual person in each reading. Does that person have a High, Medium, or Low impact on the way the land is used in the story?	<i>High</i> <i>Crops are planted and harvested each year. Farmers have a big impact on the land.</i>	<i>Low</i>	<i>Low mostly but could be medium due to waste, litter, and car exhaust.</i>	<i>High</i>



Lesson Assessment

Directions

Read the following information.

The following statement describes two pieces of land near a school. Answer part (a) or part (b) after you read about the school.

Two vacant pieces of land are near your school. One is along a small stream. It has woods and wildflowers. The other is next to the school playing field. It is mostly grass. There are also several large trees. Both are available to use. The school prides itself on its environmental education projects. It also has a growing after-school sports program. Think about the two pieces of land and the school programs.

Answer:

- (a) You are to recommend the land use for each piece of land. Support your decision with two thoughtful reasons. One reason should support the land use decision you make for each piece of land.

– **OR** –

- (b) Draw a map of the two pieces of land. Use symbols to show how the land should be used. Include a key to the map.

Write answers on Lesson Assessment, page 2.



Which option did you answer: (a) or (b)? _____

Write your answer **or** draw your map in the space below.

- **For option (a), be sure to include:**
 1. your decision on the land use for each piece of land.
 2. one reason to support your decision for each piece of land.
- **For option (b), draw your map using symbols to show how each piece would be used.**

Write your statement about your land use decision here:

(a). Reason for piece 1 land use: _____

Reason for piece 2 land use: _____

(b). Draw your map about your land use decision here.

