Looks Count!

Community Planning, Natural Resource Protection, and the Visual Landscape

An Interdisciplinary Middle School Unit for Social Studies, Language Arts, Math, Science and Art

Western Upper Peninsula Center for Science, Mathematics and Environmental Education
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Looks Count! — Community Planning, Natural Resource Protection and the Visual Landscape
An Interdisciplinary Middle School Curriculum Unit for Social Studies, Language Arts, Math, and Science

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Additional Science Lessons (not included in booklet)
Color Me A Watershed - students observe land use changes over time and how this affects the quantity of runoff. (Project WET Curriculum & Activity Guide, p. 223)

Dragonfly Pond (from Project WILD Aquatic Activity Guide, p. 154)

Stream Monitoring - compare water quality above and below an urban area
Preface

Wise stewardship of a community’s built and natural environment requires public education. Few educational programs have been directed at middle and high school students to help them understand the choices and future consequences of community land use decisions, and equip them with the knowledge and skills to effectively participate in community decision-making.

Middle and high school students need to understand how choices regarding community land use can have long-term impacts on the visual appearance, economic vitality, and environmental quality of their community. In addition, students need to build citizenship skills and a sense of civic responsibility towards their community through active involvement in decision-making, community improvement projects, and helping to enhance the quality of life for community residents. This curriculum unit will provide a vehicle for youth involvement, as well as enhance public understanding of the land use choices to be made. The question is not whether to grow, but how.

As part of the Looks Count unit, students will be able to:

- Describe the cultural and natural character of their community and identify what makes it visually appealing;
- Design, conduct and tabulate community surveys to determine community needs.
- Give examples of design and planning tools that may be used to enhance their community.
- Interact with planners, architects, realtors, and citizens invited into the classroom to share their expertise and perspectives on community growth and planning.
- Photograph buildings, streetscapes, land uses, and viewsheds in the community, and develop a protection or enhancement plan.
- Read children’s books to identify the author’s message and perspective on community.
- Measure how land ownership has changed over time in the community using plat books to determine changes in land ownership and parcel sizes.
- Measure the human/environment impact of development by evaluating changes in biodiversity, effects of land use changes on wildlife habitat, and designing an investigation to assess the effect of roads on bird nest predation.
- Design a brochure that highlights the cultural and natural features of their community and suggest improvements.
- Design a community enhancement project.

The unit correlates with Michigan and national content standards for social studies, language arts, mathematics, and science.

Design Guidelines to Enhance Community Appearance and Protect Natural Resources: a guidebook for middle and high school students is an excellent companion to this interdisciplinary curriculum unit. To order a copy, call 906-487-3341. Both Looks Count and Design Guidelines may be downloaded (pdf) from: http://wupcenter.mtu.edu/education/land_use/index.htm.
Match the following words. Place the ‘letter’ from the right column, on the line next to the word that it defines in the left column.

___ 1. Sprawl A. Planning where to develop, how to arrange new development, and what the new development will look like so as to retain and enhance the attraction and character of a community.

___ 2. Streetscape B. Unnaturally occurring substances caused by human activities that may damage or kill plants, wildlife, or humans, or upset the natural balance in an ecosystem.

___ 3. Anywhere, USA C. Entrance to a state or national park, forest, historic attraction, or other unique or special geographic area.

___ 4. Congestion D. View one sees looking down a street.

___ 5. Unsustainable E. Not self-supporting in the long run.

___ 6. Common good F. All that can be seen from a specific point, including the natural landscape or built environment.

___ 7. Gateway community H. What is best for most of the people affected.

___ 9. Contaminants I. Visual clutter such as unattractive signage, billboards, excessive power lines, and mismatched development.

___ 10. Community character J. Crowded with automobile traffic or lots of people.

___ 11. Viewshed K. Developed by local governmental body, with public input, to guide community growth and development.

___ 12. Smart growth L. Open space with forests, fields, or landscaped areas used for recreation, visual appreciation, or to protect a natural resource.

___ 14. Open/Green space M. Where the built environment contains primarily franchise businesses and franchise architecture

___ 15. Visual pollution O. Development along roadways leading into a community that often includes shopping centers, strip malls, and fast food restaurants.

___ 16. Land use plan P. Both natural and built environment that reflects the community's history, landscape, and unique 'personality.'
PRE-TEST – Correct Responses
Name ___________ Period ______

Match the following words. Place the ‘letter’ from the right column, on the line next to the word that it defines in the left column.

1. Sprawl O
   A. Planning where to develop, how to arrange new development, and what the new development will look like so as to retain and enhance the attraction and character of a community.

2. Streetscape D
   B. Unnaturally occurring substances caused by human activities that may damage or kill plants, wildlife, or humans, or upset the natural balance in an ecosystem.

3. Anywhere, USA M
   C. Entrance to a state or national park, forest, historic attraction, or other unique or special geographic area.

4. Congestion J
   D. View one sees looking down a street.

5. Unsustainable E
   E. Not self-supporting in the long run.

6. Common good H
   F. All that can be seen from a specific point, including the natural landscape or built environment.

7. Gateway community C
   H. What is best for most of the people affected or involved.

9. Contaminants B
   I. Visual clutter such as unattractive signage, billboards, excessive power lines, and mismatched development.

10. Community character P
    J. Crowded with automobile traffic or lots of people.

11. Viewshed F
    K. Developed by local governmental body, with public input, to guide community growth and development.

12. Smart growth A
    L. Open space with forests, fields, or landscaped areas used for recreation, visual appreciation, or to protect a natural resource.

14. Open/Green space L
    M. Where the built environment contains primarily franchise businesses and franchise architecture

15. Visual pollution I
    O. Development along roadways leading into a community that often includes shopping centers, strip malls, and fast food restaurants.

16. Land use plan K
    P. Both natural and built environment that reflects the community's history, landscape, and unique 'personality.'
LEsson 1 DISCOVERING YOUR SENSE OF PLACE

Overview
Using a variety of activities, students will begin to explore what they believe are the essential ingredients of community, how the appearance of their community contributes to their sense of place, how they feel about changes to their community, and how others in their community feel about this place where they live. These activities can be conducted all on one day, as stations, or they may be done individually over a period of days.

Unit Pre-Assessment
Before beginning this unit, you may want to assess your students’ ability to define their sense of place and what they value in their community, and again after the unit. You could ask students to describe their “ideal” community by posing this question for students to write about in their journals, “What would the perfect community be like?” Alternatively, use the “How Well Do You Know Your Place” quiz following the Unit Assessment at the end of the booklet.

Objectives
Students will be able to:
1. List at least three essential “ingredients” of community, and how the appearance of their community contributes to their sense of place.
2. Identify their community’s three most important assets.
3. Make predictions about what various age groups like and need from the community.
4. Explore how others feel about their community through books.

Procedure
Set up some or all of the following stations depending upon the size of the class and the amount of time you have. Use a large classroom or library.

Station A. Across These United States*

Using postcards of different natural environments (beach, desert, forest, etc.) and built environments (small town, suburb, sprawl, large city), students identify those places that they find attractive, and those places where they would not like to live.

- Student record their responses into their own an individual table, and then transfer their responses to a large tally sheet posted on the wall for all class members’ responses.
- Compare and discuss students’ varied responses. Does everyone like the same place? Which do they like least? Most? Why? Which is most like they live?

*Adapted from Viewfinders (Activity 1-3) by the Dunn Foundation www.dunnfoundation.org
**Station B. Values Barometer**  (Adapted from Values on the Line, K-8 Project Learning Tree Activity Guide).

Make two signs (Agree Strongly and Disagree Strongly) to post on the wall about twenty feet apart. As the teacher reads one statement at a time (see sample statements on the following pages), students arrange themselves along the line between ‘Agree Strongly’ and ‘Disagree Strongly’ depending upon how they feel. Students will observe that there are many different ways to feel about one’s community.

**Station C. What Is Special About Your Community?**

Students list what is special about their community or what they like about their community on a large sheet of newsprint posted on the wall. Later, note the similarities and differences in students’ responses.

**Station D. A Memorable Place**

Students write a paragraph describing a place that moved, inspired, or profoundly impacted them (positively or negatively).

**Station E. Quotable Quotes**

Students review a variety of books to look for a quote that describes their own sense of place and explain why. Possible books: Earth Prayers, Pilgrim at Tinker Creek by Annie Dillard, A Year in the Maine Woods by Bernd Heinrich, Sand County Almanac by Aldo Leopold, The Wisdom of the Native Americans, ed. Kent Nerburn. Choose a variety of books that will guide your students’ to consider the visual environment and sense of place.

**Station F. Photo Comparison**

Students compare 10-12 photos (provided by the teacher) of the local area. Photos should include natural landscapes and built environment, attractive and not so attractive settings. This is a warm-up for the lessons that follow. Possible photos to include are: franchise architecture, historic buildings, parks, parking lots, attractive landscaping and no landscaping, billboards and attractive business signs, etc. Students record their responses to the photos.

**Station G. Predictions**

Students make predictions about what makes the area a good place to live for each of the following four age groups: i) parents of 0-5 years, ii) 6-12 years, iii) 13-22 years; iv) 23-59 years; v) 60+ years. Discuss whether all age groups have the same needs? Do the needs of some residents conflict with other residents’ needs for: safety, playgrounds, skate parks, ice skating rinks, golf courses, transportation options (bus?), fast food restaurants, libraries, etc. Is it possible for our community to provide for all residents’ needs?

**Assessment**

Each group completes all the stations and turns in their completed record/response forms.

**Michigan Content Standards Addressed**

**Language Arts:**

Standard 1.1 Use reading for multiple purposes, such as, new procedures, and increasing conceptual understanding.

**Social Studies:**

Standard 5.1 Inquiry

- Use traditional and electronic means to organize social science information and to make map, graphs and tables.
Station A  Across These United States Tally Sheet

Place an X in the column that best describes how you feel about the landscape shown in each postcard. Be sure you record your response in the correct row. Remember, you may not be starting at postcard 1.

<table>
<thead>
<tr>
<th>Postcard</th>
<th>Like Very Much</th>
<th>Like A Little</th>
<th>No Feelings</th>
<th>Dislike A Little</th>
<th>Dislike A Lot</th>
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Questions

1. Which landscape is most like your own?

2. Which landscape do you like the best? Why?

3. Which landscape do you like least? Why?
What do students value about different aspects of the community in which they live? (Pre-teach vocabulary as needed)

As the teacher reads each statement below, the students position themselves along a continuum marked on the wall or floor, labeled Strongly Agree at one end, and Strongly Disagree at the other end. Have students note the variety of perspectives within their class. Would they expect the same responses from their parents? Grandparents?

1. I live in my community because I like the way it looks.
2. My community has a sense of pride.
3. Our area needs more malls and shopping centers.
4. Our area has too much green space.
5. Property owners should have the final say in what happens on their land.
6. Historic buildings are of little or no value.
7. Small, locally-owned businesses are important to our community.
8. We need more public land for recreation to attract homeowners and tourists.
9. Businesses should not be allowed to put up big billboards advertising their businesses, only smaller ones should be allowed.
10. Traffic congestion is a problem in our community.
11. We should have more big franchise restaurants and stores.
12. Unique natural habitats, geologic formations, and historical places in our area should be protected.
13. All franchise stores and restaurants should look the same in every community.
14. It doesn’t matter to me how our community changes in the next 20 years.
15. I should have a say in how my community grows.
16. Parking lots are just for cars. They don’t need trees or landscaping.
17. New buildings do not need to blend in with the buildings already in our community.
What do students value or think about different aspects of the community in which they live?  (Pre-teach vocabulary as needed)

As the teacher reads each statement below, the students position themselves along a continuum marked on the wall or floor, labeled Strongly Agree at one end, and Strongly Disagree at the other end. Have students note the variety of perspectives within their class. Would they expect the same responses from their parents? Grandparents?

1. My community has a sense of pride.
2. Our area needs more malls and shopping centers.
3. Our area has too many parks and recreational areas.
4. Property owners should have the final say in what happens on their land.
5. Water quality is not important to my community.
6. It is important to maintain habitat in our community for birds and wildlife.
7. Streams get in the way of community growth and development.
8. Businesses should not be allowed to put up big billboards advertising their businesses, only smaller ones should be allowed.
9. We should have more big franchise restaurants and stores so we can be like everywhere else.
10. Unique natural habitats, geologic formations, and historical places in our area should be protected.
11. It doesn’t matter to me how our community changes in the next 20 years.
12. I should have a say in how my community grows.
13. Communities need to provide safe ways for people to walk and ride bikes to places.
14. New buildings do not need to blend in with the buildings already in our community.
15. We have enough parks in our town. They don’t create jobs, they just cost money to keep the lawn mowed and the bushes trimmed.
STATION E Quotable Quotes

#1 Quote:

#1 Source (Title and Author):

#2 Quote:

#2 Source (Title and Author):

#3 Quote:

#3 Source (Title and Author):
STATION F  Photo Comparison

Look at the variety of photographs displayed on the table. Select one photograph that you really like, and one that you don’t find attractive. Then answer the following questions about the photographs.

Photograph that I really like # ________

Photograph that I like least # ________

1. I think # ____ photograph is attractive because:

2. Photograph # ____ reminds me of:

3. Photograph # ____ could become more attractive if the following was changed:

4. If I lived in # ______, I would:

5. I don’t like photograph # ________, because:
STATION G  MAKE PREDICTIONS

For each of the categories listed below, list 3 predictions about what makes our community a good place to live for each age group.

Babies and Toddlers (0-5 years)

Elementary Students (6-11 years)

Middle and High School Students (12-18 years)

Adults (19-39 years)

Adults (40-59 years)

Senior Citizens (more than 60 years)
LESSON 2  WHAT IS SUBURBAN SPRAWL?

Overview
In Part I, students read an article to gain content knowledge on the about the issue of suburban sprawl and its impacts, and complete a reading guide to develop a definition of suburban sprawl. In Part II, students watch a video to further explore the topic of community sprawl and consider possible solutions.

Objectives
Students will be able to:

Part I
1. Identify areas around the U.S. that are experiencing suburban sprawl.
2. Identify effects of sprawl, such as visual pollution, loss of historic architecture, loss of local businesses, traffic congestion, etc.
3. Identify possible solutions.

Part II
4. Identify the differences between various kinds of communities.
5. Explain strict/separate and mixed land uses.
6. Explain the difference between compact housing units, cluster housing, and single-family homes.
7. Identify problems with each type of community and discuss possible solutions.

Procedure
Part I
1. Begin by helping students explore their knowledge of suburban sprawl by using a word concept map.
2. Distribute a reading guide to be used with a selected article on sprawl. This may be done as an in-class assignment or as a homework assignment if there are enough copies of the article to be taken home.
3. Discuss the vocabulary definitions as a class to ensure that everyone has the same understanding. Discuss how students can figure out the meaning of words by using context clues.
4. Students enter information from the article into the table on the reading guide. The teacher and class should do the first one together identifying a cause of sprawl, and the effect of sprawl on the community.

Part II
1. Distribute viewing guide. View video. Pause the video as needed for students to take notes and for class discussion.
2. When video ends, allow time for students to complete their viewing guide.
3. Make a overhead transparency of the viewing guide and fill it in as a class. Discuss the information as it is filled in, allowing the class to share their thoughts.

Duration:
Two 50-minute class periods.

Materials:
Article on sprawl from the internet
OR Design Guidelines pages 1-18
Reading guide
Tel: 1-414-271-7280
Video viewing guide

Subject
Social Studies
Language Arts
Assessment
Students are able to define terms when given a vocabulary quiz. The students are able to complete
the cause-effect table and use the vocabulary in the article.

Michigan Content Standards Addressed

Social Studies:
Strand II. Geographic Perspective
Standard II.2 Human/Environment Interaction
• All students will describe, compare, and explain the locations and characteristics of ecosystems,
  resources, human adaptation, environmental impact, and the interrelationships among them.

Standard V.2 Inquiry
• Construct an answer to the question posed and support it with evidence.

Language Arts:
Standard 3. Meaning and Communication
• All students will focus on meaning and communicating as they listen, speak, view, read, and write in
  personal, social occupational, and civic contexts.
Define the following words in the table below.

1. Suburban sprawl: 8. Community planning:
2. Open/green space: 9. Visual pollution:
4. Unsustainable: 11. Scenic view

### Suburban Sprawl

<table>
<thead>
<tr>
<th>CAUSE</th>
<th>EFFECT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
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<td>2.</td>
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<td>3.</td>
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<td>4.</td>
<td></td>
</tr>
</tbody>
</table>
Video Viewing Guide:  BACK TO THE FUTURE

As you view the video, fill out this sheet. List at least 3 advantages and disadvantages.

<table>
<thead>
<tr>
<th></th>
<th>Traditional Downtowns</th>
<th>Suburban Sprawl</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advantages</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disadvantages</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Compare strict/separate uses and mixed uses of land?

2. What is the difference in environmental impact between compact housing units and single family homes?

3. What are some solutions to the problems of suburban sprawl suggested in the video.
LESSON 3  NEIGHBORHOOD VIEW TEAMS

Overview
Working in small groups, students explore an assigned area of their community, such as several city blocks of the commercial area, or a neighborhood. Students make observations concerning: architectural details, presence of green space, signage, landscaping, utility lines, compatibility of building designs, and whether the area’s overall visual appearance is attractive.

Objectives
Students will be able to:
1. Categorize the land uses within their assigned area.
2. Conduct a visual critique of an area, identifying attractive and less attractive aspects; discuss how these contribute to or detract from a sense of community.
3. Define and give examples of visual pollution.
4. Make recommendations for visual improvements.

Procedure
Warm Up #1 (optional)
To familiarize students with the visual choices that communities can make about a wide range of visual characteristics, have them watch an introductory video:

(1) Community of Choices illustrates how planning is the key to protecting and enhancing the natural, cultural, and historic characteristics of a community. (Order from The Dunn Foundation. (The video may be ordered for $45 from the Dunn Foundation at: www.dunnfoundation.org)

(2) Back to the Future: Designs for Walkable Neighborhoods Illustrates how community sprawl impacts citizens’ quality of life and provides suggestions for how to design for diverse land uses while still maintaining a sense of community. (The Back to the Future video may be ordered for $5.00 from Citizens for a Better Environment, 152 W. Wisconsin Ave. Suite 510, Milwaukee, WI 53203 or Tel: 414-271-7280).

Prior to watching the video, have students make a record sheet with two columns. Label the first column “Common Approach” and the second column “Better Approach.” While they are watching the video, have students list five “problems or concerns related to community growth” in the first column, and then list how these concerns could be addressed in the second column.

Warm Up #2 (optional)
To get students out in the community looking at the natural and cultural landscape of where they live, conduct a scavenger hunt of your community. Students can either do this during class time, or can be assigned to do this on their own time. While each teacher would need to design a scavenger hunt appropriate to their own community, two types of scavenger hunts are possible. One type focuses on the history of the community and the other type focuses on the architectural features of buildings in the community.
Sample questions on a history scavenger hunt might include:

- The first pre-fabricated house in town was purchased from Sears in 1902. It is located at 862 Maple. Does it blend in with the other homes on the street?

- What material was most often used to construct buildings in our town before 1900? After 1900?
- What is the name and address of a building that predates the fire of 1887? How do you know it predates the fire?

- When was the park in Lake Linden established? What was at this location before the park?

- Look at the hardware store on Main Street. Has it always looked like this? Explain your answer.

Sample questions for an architectural scavenger hunt (that includes photos of specific parts of the building), might include:

- An example of carved stonework is found on what east-facing office building?

- What building material was used to construct the buildings on the main street?

- What is sold inside the building redesigned from its original use as a department store?

- Do the moose antlers on this building enhance the appearance of this building?

Procedure

1. Divide class into teams of 3-4 students. The teams will continue to work together throughout the entire unit.

2. Using a map of your community that you may obtain from your chamber of commerce, divide the community into different areas or neighborhoods of one or more blocks. Assign an area to each team. If your community is small, or your class size large, an area may have more than one team assigned to it. It is important that the areas are large enough, so that students can look at how the buildings and/or land uses in an area fit together.

3. Have student teams take photos of their assigned areas in the community. There are several ways to get these photos. Photos may already be available from various city agencies and organizations, or the teacher can take the pictures, or the students can take the photographs. If student take the pictures, use the following guidelines:

   a. Provide each student group with an instamatic, disposable, or digital camera (digital photos are recommended), You may have a designated time during the school day for groups to walk around town and take photos with a supervising teacher, aide, or parent, or you may choose to make this a homework assignment. The students within each group arrange their own camera rotation schedule, so each student can have the camera overnight to take their pictures and then pass the camera onto the next student in the group. Perhaps some students will have their own digital cameras that they can use to take their pictures. Try to complete the picture taking in one week, as subsequent activities depend on having the students’ photographs available.
b. Instruct students how to use a camera and take good photographs: lighting, composition, focus, background/foreground, streetscape versus individual building, etc. Perhaps you may want to invite a local photographer to conduct a photography workshop with students.

c. Each group member will take six photos of their area. The photographs will be used again in Lesson 4 (What Do You Want Your Community to Look Like?), Lesson 11 (Here’s What’s Great About My Neighborhood), and Lesson 12 (Sharing With the Community). Students should be instructed to photograph cultural and natural features that illustrate the attractiveness or unattractiveness of the neighborhood or community, such as:

- Overall visual character of area (streetscape)
- Signage
- Parking lot design
- Street trees and landscaping (or lack of)
- Streetlights, utility poles, cell towers
- Street art or murals, street furniture, fountains, and other features
- Green or open space
- Architecture or design of buildings
- Environmental protection practices

4. Students should enter each of their photographs into the table on the next page (Photographic Record) and answer the questions.

5. Each group will develop a community improvement plan for their area that includes at least four improvements. The teacher should provide an outline stating what should be included in the plan. A good reference for possible community improvements is the guidebook titled, *Design Guidelines for Enhancing Community Appearance* by the Western UP Center for Science, Mathematics and Environmental Education (www.wupcenter.mtu.edu)

Assessment
Students are able to categorize land uses and describe their neighborhood photos using the proper vocabulary. Students are able to assess whether their “streetscape” is visually pleasing to them, or contains examples of “visual pollution.” Students are able to make recommendations for improvement.

Extension
Make a drawing of a plan view of the neighborhood, showing location of streets and buildings as part of their community improvement plan. If possible, show an example of a plan view available from the city planner or a consulting firm.

Michigan Content Standards Addressed
Strand V. Inquiry - Students will use methods of social science investigation to answer questions about society.

Standard V.1 Information Processing
♦ All students will acquire, organize, interpret, and present information; and use a variety of electronic technologies to assist in accessing and managing information.

Standard V.2 Conducting Investigations
♦ All students will conduct investigations by formulating a clear statement of a question, gathering and organizing information from a variety of sources, analyzing and interpreting information, formulating and testing hypotheses, reporting results both orally and in writing, and making use of appropriate technology.

Strand VI. Public Discourse and Decision Making
Standard VI.2 Group Discussion
♦ All students will engage their peers in constructive conversation about matters of public concern.
**Assessment of Community Photographs**

Each student should number their six best photos from 1-6. Next enter the number of each photograph into the table below (under photo #) next to as many of the neighborhood features that are illustrated in the photo. Write what you like or dislike about the particular features illustrated in each photograph. Place your numbered photos into an envelope and turn in with this assignment.

<table>
<thead>
<tr>
<th>Photo #</th>
<th>Neighborhood Features</th>
<th>What I Like About Photo</th>
<th>What I Don’t Like About Photo</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Visual character of area.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Signage on &amp; off-premise</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Parking lot design</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Landscaping</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Streetlights, utility poles, parking meters, street barriers.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Street art, street furniture, fountains and other features.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Open space or green spaces.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Architecture of buildings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Compatibility of building design and other built features.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Answer these questions.**

1. Describe the 'cultural and natural character' of your area---pleasing, unpleasant, colorful, cluttered, open space, scenic views, shade trees, landscaping, etc.

2. Do all of the buildings in the neighborhood have the same 'look' and blend together well? What materials were used to construct the buildings?

3. Are there lots of signs, streetlights, and utility poles visible? Do they blend into the area or stand out? Is the community inviting? Does it encourage people to visit? Hang out?

4. Compare characteristics of your neighborhood to another group's neighborhood and explain whether your two neighborhoods look similar or different. Consider whether buildings from your neighborhood would fit in well with buildings in the other groups' neighborhoods.
**LESSON 4 WHAT DO YOU WANT YOUR COMMUNITY TO LOOK LIKE?**

**Overview**
Students examine their community, or a neighborhood in their community, and sketch their plans for redesigning streetscapes or individual buildings to be more visually attractive and to enhance the overall visual appearance of their community using suggestions listed below or described with line drawings and photographs in the *Design Guidelines to Enhance Community Appearance* guidebook.

**Objectives**
Students will be able to:
1. Describe the character of their community or neighborhood.
2. Suggest modifications to the community streetscape or to individual buildings. Explain why each modification is proposed and how this change will impact the community’s visual appearance.
3. Incorporate the modifications from #2 into a drawing of their streetscape or building.

**Procedure**

**Warm Up #1**
Show students examples of what they are going to create from the Community Transformations website:
- [http://www.jointventure.org/resources/photosims/sim_index.html](http://www.jointventure.org/resources/photosims/sim_index.html)

**Warm Up #2** (optional)
Before beginning this activity, show your students the video *Looking at Change Before It Occurs* (17 min.) by Maguire & Reeder Ltd., Alexandria, VA and distributed by Design Access.

**Part I – Sketching Improvements**
1. Students select a photo of their community that shows a view of a city streetscape, community sprawl on the outer edges of the city, or a view that they would like to “improve” the appearance of. (Students may use their own photographs from Lesson 3, or photographs may be provided by the teacher.)
2. Using a copier, enlarge each student’s photo to fit a sheet of 8½” x 11” paper.
3. Students critique the first copy of the photograph, noting where improvements should be made.
4. Next, tape the second photocopy against a backlight exterior window or a light table, and

**Duration**
Two 50-minute class periods.

**Materials**
- Copy Machine
- Tracing Paper
- #2 Lead Pencil
- Light tables or backlight windows
- Scotch or masking tape
- Colored pencils
- Photographs of the city
- Computer and projector to display websites or print out pages from the website to show class.

Optional:
- *Looking at Change Before It Occurs* video (17 min.) available from Design Access, 401 F St. NW, Washington D.C.
- *Design Guidelines to Enhance Community Appearance and Protect Natural Resources* guidebook available from the Western UP Center for Science, Mathematics and Environmental Education or online at: www.wupcenter.mtu.edu

**Key Vocabulary**
- architecture, streetscape, viewshed, visual landscape

**Subjects**
- Language Arts
- Social Studies
- Art
tape a piece of tracing paper over the photo. (NOTE: some students may be more comfortable sketching on a desk, which is fine as long as the detail of the photocopy shows through the tracing paper).

5. Students will trace their picture onto the tracing paper with a #2 lead pencil (not pen!). The students should omit any features in the photo that they would like to ‘remove’ from the scene, such as, unattractive signs, architectural features on buildings, transmission lines, exterior building materials or building facades, etc.

6. Next, students brainstorm a list of possible improvements to a building or streetscape to enhance its visual appeal and compatibility with community character. The Design Guidelines to Enhance Community Appearance and Protect Natural Resources guidebook provides visual examples of possible improvements that students may consider, including:
   - Location, size and shape of windows and doors on buildings;
   - Landscape design elements for buffering, screening, or aesthetic enhancement;
   - Size, location, height, materials, and design of street/building signage;
   - Pedestrian accessibility and safety;
   - Street furniture, benches, awnings;
   - Exterior building materials and colors consistent with community character and adjacent buildings;
   - Street lighting location and style; and location of utility wires.

7. Students sketch in the features that they would like to ‘add to the scene.’

8. Collect the sketches and photocopy each one before the students proceed to coloring in details.

NOTE: If digital photos are used and computers are available, students may do Steps 2-3 using Microsoft Powerpoint. The critique of the photo may be done using text boxes to show attractive and unattractive aspects of the streetscape. After step 8 is completed, the students may scan in their “improved” photo into their powerpoint program. Students will now have a series of three photos depicting the streetscape: i) original photo, ii) critiqued photo, iii) new and improved streetscape.

Part II – Describing Improvements

9. Upon completion of the sketches, students will write a paragraph explaining what changes they have made to the original picture and why. Have students respond to some or all of the following questions in their paragraph:
   a) Why would changes to the landscape, streetscape, or a particular structure, benefit the community or viewsheid?
   b) What do you like about the visual appearance of the neighborhood? What is unique about this part of the community?
   c) Why would someone want to move to this part of town? Is it close to parks or other natural areas?
   d) Does this area fit the surroundings or is there a way to enhance the structure(s) to better blend in with the character of the neighborhood?
   e) Why did you select the “improvements” that you made to the overall ‘landscape’ or ‘streetscape’?
Part III – Develop a Business Plan

10. Using the outline on the next page, develop a business plan for one of the buildings in your neighborhood.

Assessment

Evaluate the following aspects of each student’s work:
♦ attention to detail in their tracing;
♦ creativity in designing ‘improvements’ to their streetscape;
♦ well thought-out responses to questions about their sketches, color, form, drawing, labeling, etc.
♦ develops a creative and complete business plan.

Michigan Content Standards Addressed

Language Arts

Standard 3.
♦ All students will focus on meaning and communicating as they listen, speak, view, read, and write in personal, social occupational, and civic contexts.

Standard 11. Inquiry and Research
♦ All students will define and investigate important issues and problems using a variety of resources, including technology, to explore and create texts.

Social Studies

Strand IV. Economic Perspective

Standard 1. Describe and demonstrate effects of economic forces on consumer decisions regarding purchase and disposal of goods and services and how this effects society.
Standard 2: Explain and demonstrate how businesses confront scarcity when producing and using resources, and when supplying the marketplace.
Community Business Plan

You will spend the next few weeks developing a business plan for a fictitious business in the local community. Your completed plan should contain all of the following elements:

I. Cover page
II. Mission statement
   • Explanation of what service or good you are selling
   • The days of the week and times your business will be open.
III. Market research and analysis
   • Why will the business be successful? Support with evidence.
   • To whom will you sell your product? Where? Why?
IV. Start-up costs
   • List things you only need to buy once in order to start your business.
V. Operating costs
   • Fixed overhead costs—costs that stay constant regardless of how much business you do.
   • Variable costs—costs that vary depending upon how much product you produce.
VI. Price structure
   • List of how much you will charge and reasons why.
VII. Profit margin
   • How much does it cost in materials & labor to produce one item?
   • How many items per month must be produced and sold to break even? (= Overhead divided by profit per item.)
VIII. Quality control
   • How will you handle dissatisfied customers? How will you maintain consistency in good/services provided?
IX. Advertising
   • Include business cards, building signs, advertisements, radio commercials, and other promotional materials.
X. Building design
   • Include a drawing of the building in town to be used for your new business. Be sure to describe how you will enhance this building and its site in order to attract customers. Will your business have a particular theme?
XI. Environmental Sustainability
   • What will you do to incorporate environmental sustainability principles into your business---using recycled materials, recycling wastes, conserving water, etc.
LESSON 5  WHO DECIDES THE VISUAL APPEARANCE OF YOUR COMMUNITY?

Overview
By observing their community and interacting with guest speakers, students will gain an understanding of community land use planning.

Objective
Students will be able to:
1. Develop an awareness of the community planning process.
2. Recognize that some communities are planned and some are not.
3. Differentiate between planning and zoning.

Procedure
1. Invite a variety of community members that represent different perspectives on community land use planning to speak to your students. Ask speakers to make a 30 minute presentation that describes their role in the community, and discusses the following statement:

“My vision for the community is……. To accomplish this vision, I am doing……”

Some suggested speakers are:
◆ Landscape architect/designer
◆ City or county planner
◆ City manager
◆ Citizen Member of Local Planning Board
◆ Environmental organization
◆ National Historic Park
◆ Industrial Council or Chamber of Commerce
◆ Architect
◆ Photographer
◆ Scenic Michigan or Scenic America representative
◆ Realtor
◆ Member of local planning and zoning boards.
◆ Private property rights advocate

Be sure to give each speaker a concise overview of your unit objectives, and the questions below that the students need to answer….

2. Give students the following questions to answer as they listen to each speaker:
   a. What is the speaker’s vision for our community?
   b. How is the speaker involved in accomplishing their vision?
   c. Does the speaker prefer ‘planning’ or should we let things happen whenever and wherever?
   d. What is the speaker’s definition of ‘visual environment?’
   e. What is the speaker’s preferred ‘visual environment?’
   f. What does the speaker think are the positive components of our community’s visual environment?

Providing questions for students to take notes on will better focus their listening and provide similar information for later comparison during classroom discussion.
3. After each presentation, the teachers and students share their notes on the speaker’s responses to the above questions. The difference between community planning and zoning is clarified.

**Assessment**

*What did the speaker say?*

After each speaker, the teacher and students compare their notes on the speaker’s responses to the above questions. Teachers identify two or three main ideas or ‘quotes’ from each speaker and write quotes on sheets of paper. Each group is given a list of all of the speaker quotes. Students, working individually or in their groups, must match each quote to the speaker who said it.

*Why did the speaker say that?*

Next, students write a short explanation of each speaker’s ‘point of view.’ The student should explain which quotes they agree or disagree with, and why.

**Michigan Content Standards Addressed**

**Language Arts**

*Standard 7. Skills and Processes*

- All students will demonstrate, analyze and reflect upon the skills and processes used to communicate through listening, speaking, viewing, reading, and writing.

**Social Studies**

*Strand III. Civic Perspective*

*Standard III.3 Democracy in Action*

- All students will describe the political and legal processes created to make decisions, seek consensus, and resolve conflicts in a free society.
LESSON 6  BUILDINGS AND MORE
Adapted from Walk Around the Block Activity Guide from Center for Understanding the Built Environment (CUBE).

Overview
A picture says a thousand words. Or is it, a building says a thousand words? Students conduct research on two local buildings, and take on the persona of two buildings in this creative writing assignment.

Objective
Students will be able to:
1. Compose narratives of events from the perspective of buildings in the community.
2. Integrate the creative writing process into the study of the community.

Procedure
1. Using pictures the students have taken, students select two buildings, and write a conversation the two buildings might have with each other. If your classroom window(s) provide a view of the community, students may choose two of the buildings in their visual landscape to converse with each other.

2. Students identify the two “Talking Buildings” described in their paper. If possible, have students do research on the two buildings so that their paper is historical fiction.

Assessment
Points are given for complete conversations. It is suggested that you determine the minimum length of the assignment. Do not allow students to simply fill in the speech bubbles on the “Talking Buildings” worksheet.

Michigan Content Standards Addressed
Language Arts
Standard 2. Meaning and Communication
- All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions.

Standard 6. Voice
- All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts that enlighten and engage an audience.

Duration
One 50 minute class period.

Materials
Students’ photos

Optional:
Response form on p. 103 of Walk Around the Block Activity Guide from Center for Understanding the Built Environment (CUBE).
Website: www.cubekc.org
Tel: 1-913-262-0691.

Key Vocabulary
narrative, perspective, visual landscape

Subjects
Language Arts
LESSON 7  CONDUCTING A COMMUNITY SURVEY

Overview
Students will gain interviewing skills and discover the variety of values and opinions held by different people in the community by conducting a survey of different age groups. Once the surveys are conducted, students will tabulate and analyze the results.

Objectives
Students will be able to:
1. Design and conduct a survey to gather input from a variety of stakeholders on a particular community issue.
2. Create a method for tabulating survey results.
3. Display tallied responses in graphic form.
4. Compare survey responses based on respondents’ ages and length of residency in the community. Suggest possible reasons why people have different values and opinions on community issues.
5. Identify stakeholders who should participate in decision-making on various community issues,

Procedure
Part I
1. Working in small groups, ask students to design a survey that will gather information about residents’ values and opinions on a community issue of interest. A good survey length is about 20 questions. A sample community planning survey is provided on the following page that includes questions in the following three categories:
   - Economic Development and Jobs
   - Natural and Cultural Character
   - Planning for the Future

2. Have students share their questions on an overhead, then have the class members vote to select the twenty survey questions to use.

3. Have students practice taking the survey prior to interviewing community members, to familiarize themselves with the questions and to make sure that they understand each question.

4. Give students one week to survey six people in the community, one from each of the age categories. Students receive five points for each completed survey they turned in. (This greatly increases response rate!)

Part II
1. Once the surveys have been handed in, ask students to divide the completed surveys according to the age group of the respondents:
   a. (Parent of) 0 to 5 years old
   b. 6 to 11 years old
   c. 12 to 18 years old
   d. 19 to 39 years old
   e. 40 to 60 years old

Duration
Two to three 50-minute class periods to develop the survey.
One to three 50-minute periods to compile the surveys.

Materials
Five survey forms per student
Clipboard
Tally sheet
Calculator

Key Vocabulary
cultural character, economic development, natural character, opinion, stakeholders, survey, natural features, balance, franchise, compiling, tabulate, personal interest, respondent

Subject:
Language Arts
Social Studies
Math
f. >60 years old.  

(Note: if you have several classes participating in this activity, have each of the classes tabulate just one or two age groups.)

2. Divide each class into groups of five or six students, and give each group member four surveys to tally. Tell each group to devise their own method of tabulating the 20-question survey.

Teaching Tip:  
Assign one group member to be the tally person. Set up a master tally sheet like this:

<table>
<thead>
<tr>
<th>Question #</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A manageable number of surveys for each student (within a group) is four. The tally person asks each of the group members to recite the response to question #1, and he/she tallies the responses on the master tally sheet. Repeat until all questions are tallied. Next double-check the responses against the tally sheet. Repeat with another set of surveys. Once all the groups finish tallying their survey questions, a final total for each age group should be calculated by adding the tally sheets together onto a class master tally sheet.

3. Discuss options for graphing the results and select the appropriate format. A bar graph works well. Remind students to label the ‘x’ and ‘y’ axis, and put a title on the graph. Use a different color to display the information for each age category.

4. Discuss the results of the survey. Compare survey responses based on respondents’ ages and length of residency in the community. Ask students for possible explanations for people’s different responses. Identify stakeholders who should participate in decision-making on various community issues.

Assessment  
Evaluate whether student’s bar graphs are properly constructed and properly display the survey responses. Ask students to write a paragraph discussing their findings and how this new information should be incorporated into community planning.

Michigan Content Standards Addressed

Math  
Strand III. *Data Analysis and Statistics*  
Standard III.1 Collection, Organization and Presentation of Data  
♦ Students collect and explore data, organize data into a useful form, and develop skill in representing and reading data displayed in different formats.  
Standard III.2 Description and Interpretation  
♦ Students examine data and describe characteristics of a distribution, relate data to the situation from which they arose, and use data to answer questions convincingly and persuasively.

Social Studies  
Strand V. *Inquiry* Students will use methods of social science investigation to answer questions about society.  
Standard V.1 Information Processing  
♦ All students will acquire, organize, interpret, and present information; and use a variety of electronic technologies to assist in accessing and managing information.  
Standard V.2 Conducting Investigations  
♦ All students will conduct investigations by formulating a clear statement of a question, gathering and organizing information from a variety of sources, analyzing and interpreting information, formulating and testing hypotheses, reporting results both orally and in writing, and making use of appropriate technology.
“Shaping Our Future” Survey of Community Residents

**Students:** Introduce yourself to the person you are going to survey. Tell them that your class is conducting a survey to learn about residents’ needs, values, and concerns about planning and future development in their neighborhood or community. Read the questions to the person or ask them to complete the survey on their own.

1) **I live in** ______________________________ (name of town).
   OR
   **I don’t live in town, but the closest town from my home is** ________________________________.

2) **I have lived in** _________________ County for:
   - [ ] 0-5 years
   - [ ] 5-10 years
   - [ ] 10-30 years
   - [ ] >30 years

3) Choose the age category that best describes you:
   - [ ] Parent of child < 5 years
   - [ ] 6-11 years
   - [ ] 12-18 years
   - [ ] 19-39 years
   - [ ] 40-60 years
   - [ ] Over 60 years

**Please express how strongly you agree or disagree with the following statements.**

**A. ECONOMIC DEVELOPMENT AND JOBS**

1. There should be little or no restriction on the type and location of development in our community.

2. The most important thing in our community is to create more jobs to stimulate the economy and attract more people.

3. Franchise stores and restaurants benefit the area by creating jobs and providing more choices.

4. Franchise stores and restaurants may hurt the area by taking business away from existing stores.

5. Property owners should have absolute and final say about what happens on their property.

6. We need to balance private property rights with what will benefit the community overall.

**B. NATURAL AND CULTURAL CHARACTER**

7. The natural environment and scenic beauty of this area are important to our quality of life.

8. The design and appearance of new buildings is not important to the community or tourists.

9. New development is acceptable only if it blends with the historic character of the surrounding area.

10. Uncluttered views of natural features, such as forests, lakes, open ridges, and farmland, help to make our area an attractive place to live.
11. More public parks and recreational areas are needed in our community. If yes, what kind:

12. The positive benefits of large business signs and billboards outweighs their negative impact on the visual appearance of our area.

13. We have enough public access to waterfront areas.

**C. PLANNING FOR THE FUTURE**

14. I feel that I have a voice in shaping the future of my community.

15. Citizens and government officials should work together to develop a long-range plan to manage growth, protect community character and natural resources, and ensure the future livability of our community.

16. Laws and regulations passed by local governments should not be allowed to limit the rights of developers and private property owners.

17. This community has changed for the better over the past several years. Explain:

18. Our area has adequate public transportation services available to meet everyone's needs.

19. There are plenty of sidewalks and bike paths to allow students and people without cars to safely walk or bike to schools, stores, libraries, and other places in the community.

20. Our community takes pride in its visual appearance.

Additional comments:

**Thank you!**

The results of this survey will be compiled by students as part of their unit on community planning.

This survey was conducted by: ____________________________ Date: ________________

*Student’s name*

Developed by the GEM Center for Science and Environmental Outreach and the Western Upper Peninsula Center for Science, Mathematics and Environmental Education at Michigan Technological University, Houghton, MI
LEsson 8 WHAT’S THE MESSAGE?

Overview
Students will read and evaluate children’s books to determine what message the author and illustrator are trying to convey. Students will describe and compare the community character portrayed in each book.

Objectives
Students will be able to:
1. Critique written materials to discern an author’s message.
2. Identify different perspectives relating to the natural environment, community appearance, sense of place, and changes in community character and land uses.

Procedures
1. Select a variety of books that relate to the natural environment, visual aesthetics, sense of place, and changes in community character. The following books are recommended:

   River by Debby Atwell. 1999.
   The Empty Lot by Dale H. Fife. 1996.
   Peter’s Place by Sally Grindley. 1996.
   The Land of Gray Wolf by Thomas Locker. 1996.
   Where Once There Was A Wood by Denise Fleming. 1996.
   Home by Jeannie Baker. 2004

See the Curriculum Resources section for a description of these books.

Middle school students will recognize that the books are below their reading level. Present the activity as an opportunity for the students to become book critics, and they will rise to the occasion.

2. Place students in groups of three. Each group is given a book to read. When the group is finished reading the book, group members discuss what they have read. Following the group discussion, a book evaluation form is completed by each student, individually.
Assessment

Allow two class periods for this activity. Students should evaluate one book during each class period. By evaluating at least two books, students become aware of each author's writing style and method of conveying the message. On the book evaluation form that follows, students should write a complete paragraph for each response. Students need to write four to five sentences per response to obtain full credit. Five points may be given for each complete, well thought out response, for a total of 20 points.

Extension

In the book titled, *Home: A Journey Through America*, by Thomas Locker and Candace Christiansen, each page contains the thoughts of a different poet or writer about the place where they live—California coast, Texas and Nebraska plains, Hudson River Valley, etc. A map in the back shows the places in the country that are written about in the book. After reading some of the poems/prose in the book, ask students to write about their ‘home,’ and create a landscape drawing or painting that visually expresses how they feel about their ‘home.’

Have older students read the books to a younger class and together draw a picture of how they view their home.

**Michigan Content Standards Addressed**

**Language Arts**

- **Standard 1. Meaning and Communication**
  - All students will read and comprehend general and technical material.

- **Standard 3.**
  - All students will focus on meaning and communicating as they listen, speak, view, read, and write in personal, social occupational, and civic contexts.

**Social Studies**

- **Strand II. Geographic Perspective**
  - **Standard II.2 Human/Environment Interaction**
    - All students will describe, compare, and explain the locations and characteristics of ecosystems, resources, human adaptation, environmental impact, and the interrelationships among them.

- **Strand VI. Public Discourse and Decision Making**
  - **Standard VI.1 Identifying and Analyzing Issues**
    - All students will state an issue clearly as a question of public policy, trace the origins of the issue, analyze various perspectives people bring to the issue, and evaluate possible ways to resolve the issue.

  - **Standard VI.2 Group Discussion**
    - All students will engage their peers in constructive conversation about matters of public concern.
Book Evaluation Form

Book Title: ________________________________________________________________

Author: __________________________________________________________________

1. Describe the visual environment in the book.

2. What is the book’s message?

3. Describe what is happening in the book using at least two of your vocabulary words in your description.

4. What would you change about the ending to the book? Why?
## LESSON 9  
### WHO LIVES IN MY COMMUNITY:  
#### LOCAL DEMOGRAPHICS and GRAPHING

### Overview
Using local demographic (census) information, students graph and interpret changes in the census data over time for their community.

### Objectives
**Students will be able to:**
1. Access information from their local governmental agencies.
2. Convert written data into a graphic form that will show change in population over time.
3. Interpret data and draw conclusions about population changes in their area, and how this affects their community (economy, jobs, visual appearance, type of development, community character)

### Procedure
1. Begin by helping students brainstorm places that may have data about their city, e.g. 10-year census.
2. Democratically select a student to be responsible for phoning local city hall to request the information. Once the information is obtained, copy and distribute to each group.
3. Each group must decide which type of graphic form will work best to display the data. Provide the groups with a rubric so they will understand the assignment expectations.
4. Once the graph is complete, ask students to evaluate the information in order to draw conclusions about the changes to the population in their area, and possible consequences of those changes.

### Assessment
Students are able to correctly construct a graph and interpret the data on the graph.

### Michigan Content Standards Addressed
**Language Arts**
Standard 1.1.1 Using reading for multiple purposes, such as enjoyment and increasing conceptual understanding

**Social Studies**
Standard 2.4.3 Describe changes in the region over time as well as presently.
Standard 5.1 Inquiry
♦ Use traditional and electronic means to organize information and to make maps, graphs and tables
Standard 5.2
♦ Construct an answer to the question posed and support it with evidence and logical argument.
Standard 5.1.1.1
♦ Locate information in local, state, and national communities using a variety of resources.

**Math**
Standard 3.1.2
♦ Draw, explain and justify conclusions about trends, using data.

### Duration
Two 50 minute class periods.

### Materials
- Census information for a period of time (100 years)
- Graph paper, colored pencils, markers, rulers
- Optional
  * *If the World Were A Village: A Book About the World’s People* by David J. Smith. 2002.

### Key vocabulary
- Census, demographics

### Subjects
- Social studies  
- Math
Name ______________________________________________________

Rubric - **GRAPH DISPLAY ASSESSMENT**

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Does the graph have a title?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Does the graph correctly represent the data that is being analyzed?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(for example: comparison information, total amounts, change over-time, listings of information, % of whole, etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Is the graph readable:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Neat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Shaded or colored dark enough</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Spelling correct</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Labeled completed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Is the source of information cited?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Are the authors listed?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comments:  

Total score _______
LESSON 10  WHO OWNS THE LAND—A PLAT MAP COMPARISON

Overview
This lesson is designed to help students recognize changes in ownership and land divisions by comparing local plat maps for their community over several years. Working in pairs, with plat books from two or more years, students choose a parcel in the oldest plat book, and note the changes in ownership and lot size (due to subdividing), that have occurred from the oldest plat book to the most recent.

Objectives
Students will be able to:
1. Interpret a land description, and locate a parcel of property on a plat map.
2. Analyze map data and draw conclusions about lot sizes and ownership changes in the community, and how this might affect land uses and other aspects of the community.
3. Explain legal transfer of property.

Procedure
1. Make overhead transparencies of the map of interest from each plat book, for each year.

2. Instruct students on the history of Northwest Land Ordinance of 1787, land descriptions (described in plat book), surveyor’s role in dividing land for ownership and tax purposes, and system of township/range numbering within a township. (NOTE: You may want to invite a local history organization or surveyor into your classroom to teach your students about land descriptions and subdividing.)

3. Develop a color key that corresponds to each year, for each of the plat maps used for comparison.

4. Distribute highlighters and copies of plat maps to students. (NOTE: Plat books are generally updated every three to four years, and are typically available from a real estate office or a county extension office. Permission to reproduce maps or images may be required on copyrighted material.)

5. Students highlight the same land parcel on each of the plat maps, using the color key from #3 above.

6. Students should record the changes in ownership and size for their parcel for each year.

Assessment
Completed maps highlight changes using appropriate color code. Students should be able to answer comparative questions. (i.e. What period shows the most change? Has the land use for the parcel changed? How was this land being used (may have to hypothesize) in the first plat map, and how is this land now being used?)
Extensions
1. Research the ownership changes on their family’s property.
2. Research the historical significance of the Northwest Ordinance to the local area.

Michigan Content Standards Addressed

Language Arts
Standard 1. Meaning and Communication
- All students will read and comprehend general and technical material.
Standard 4. Language
- All students will use the English language effectively.

Social Studies
Standard 2. Geographic perspective
- Students will use knowledge of spatial patterns on earth to understand processes that shape human environments and to make decisions about society.
LESSON 11  HERE’S WHAT’S GREAT ABOUT MY Community!

Overview
Students design a brochure that highlights the aspects of their assigned neighborhood or part of the city that they value. Some aspects for students to consider are: visual character of the buildings, access to open space and public recreational opportunities (beach/swimming area, forested trails and opportunities for solitude), views, proximity to an ice cream shop or other hang-out area, or whatever else makes their area a good place to live. The teacher can decide on who the target audience should be for the brochure—as that will influence the features of the neighborhood that students should focus on.

Objectives
Students will be able to:
1. Identify at least five features of their neighborhood that would appeal to their audience (senior citizens, families, teenagers) to describe in the brochure.
2. Organize information and write the text for their neighborhood promotional brochure (made from a landscaped 8-1/2 x 11” paper, 2-sided). Check grammar, spelling, use of bulleted items, font size, headings, and other features to be graphically effective and informative.
3. Utilize software programs such as Microsoft Publisher or powerpoint to design a brochure that will visually attract and engage their audience. Use a minimum of three graphic images---photographs of their neighborhood, graph of survey responses, map of location in the community, drawings of neighborhood features, or other illustrations.
4. Be able to critique another student group’s brochures using the rubric on the following pages, and provide helpful suggestions.

Procedure
Part I.
Set up a table with sample tourism attraction brochures. Choose two brochures with the same theme for comparison purposes. Working in groups, students compare and discuss brochure sizes, layouts and text to determine what is pleasing and effective. (See form on next page for students to complete)

Part II.
Student groups are to develop an informational brochure (8.5 x 11 inch or 8.5 x 14 inch paper) designed to share their knowledge of land use planning and describe the attractive features of their neighborhood or community. The target audience are people who are looking for a new place to live. The students need to highlight the attractive qualities of their neighborhood in order to attract them to their neighborhood or town. The brochure must include a minimum of three illustrations.

1. Discuss what makes a community or neighborhood an attractive place to live. The survey responses of 2000 new homebuyers ranking community amenities was published in an April 2002 report by the National Association of Realtors (NAR) and National Association of Homebuilders (NAHB). The list of amenities printed below should give students some ideas for what they might include in their brochures.

Survey respondents were asked to note the importance of the following community amenities that would seriously influence their decision to move to a new community, realizing that these features, in
varying degrees, may increase the cost of the home or result in higher homeowner association fees or local taxes. Their responses are listed below. Respondents could identify as many amenities as they wished.

Results of 2000 new homebuyers ranking the following community amenities (April 2002 report by the National Association of Realtors and National Association of Homebuilders):

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Amenities</th>
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<tbody>
<tr>
<td>44%</td>
<td>Highway access</td>
</tr>
<tr>
<td>36%</td>
<td>Walking/jogging/bike trails</td>
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<tr>
<td>28%</td>
<td>Sidewalk on both sides</td>
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<tr>
<td>26%</td>
<td>Park area</td>
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<tr>
<td>21%</td>
<td>Playgrounds</td>
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<tr>
<td>19%</td>
<td>Shops within walking distance</td>
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<tr>
<td>16%</td>
<td>Lake</td>
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<td>15%</td>
<td>Near public transportation</td>
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<tr>
<td>14%</td>
<td>Day care center</td>
</tr>
<tr>
<td>10%</td>
<td>Business center</td>
</tr>
<tr>
<td>9%</td>
<td>Basketball courts/Soccer field</td>
</tr>
<tr>
<td>7%</td>
<td>Card-operated gate (no guard)</td>
</tr>
<tr>
<td>6%</td>
<td>Baseball/softball field</td>
</tr>
<tr>
<td>6%</td>
<td>Golf course</td>
</tr>
<tr>
<td>6%</td>
<td>Club house</td>
</tr>
<tr>
<td>5%</td>
<td>Security guard at gate</td>
</tr>
<tr>
<td>4%</td>
<td>Tennis courts</td>
</tr>
<tr>
<td>3%</td>
<td>Equestrian facilities</td>
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</tbody>
</table>

The full report is available from: [http://www.realtor.org/publicaffairsweb.nsf/Pages/SmartGrowthSurvey02](http://www.realtor.org/publicaffairsweb.nsf/Pages/SmartGrowthSurvey02)

2. Student groups develop a draft of their brochure (draw out on paper), text and illustrations, to share with the teacher, or another student group, prior to beginning their computer layout.

3. Student groups exchange their draft brochures with at least one other group for critique and comments. Comments are written down (and turned into the teacher, if desired).

4. Brochures are edited and design is finalized. Be certain that your group members’ names are placed on the back of the brochure under “credits.”

5. Teachers may use the Brochure Rubric to score the rubric. Students may complete the Group Evaluation Form, as needed.

6. Optional: Attach a copy of the finished brochure to their presentation boards (see the next lesson: Sharing With the Community). A second copy of the brochure is turned into the teacher.

**Michigan Content Standards Addressed**

Social Studies:
Strand II. Geographic Perspective
  - Standard V.2 Inquiry
    - Construct an answer to the question posed and support it with evidence.

Strand IV. Economic Perspective
  - Standard 1. Describe and demonstrate effects of economic forces on consumer decisions regarding purchase and disposal of goods and services and how this effects society.

Language Arts:
  - Standard 3. Meaning and Communication
    - All students will focus on meaning and communicating as they listen, speak, view, read, and write in personal, social occupational, and civic contexts.
BROCHURE CRITIQUE

Select two brochures to answer the following questions for.

Title of brochure #1 __________________________________________________________
Title of brochure #2 __________________________________________________________

Part I. Design & Appearance of Brochure
1. Is the brochure in color or black and white?

2. Does it have photographs or sketches?

3. Does it tell its “story” mostly through text or illustrations?

4. What audience is the brochure written for? (Kids, families, just adults, etc.?)

5. How does choice of punctuation and capitalization affect the message being communicated?

Part II. Content of Brochure
6. What is the brochure trying to get you to do?

7. What natural resource is being promoted by this brochure?

8. Is the brochure effective at reaching its audience? Why or why not?

9. List some of the adjectives (loaded words) used in the brochure:

Are these accurate? Believable? If you live here, is it really like they describe?

10. Does your group like or dislike the brochure? Explain.
BROCHURE RUBRIC

DESIGN
♦ Neatness, quality of work ________/10
♦ Blocks of text are appropriately labeled with headings ________/5
♦ Informational text is well organized, easy to understand for target group, and free of grammatical errors ________/20
♦ Contains a minimum of 3 illustrations. ________/10
BONUS: Work above and beyond what is expected. ________/5
TOTAL ________/50 PTS.

CONTENT
4-6 panels of text with a minimum of 3 drawings, maps, or photos _____/20
Text describes five community amenities appropriate for target audience _____/20
Map of neighborhood location within community is geographically correct _____/5
BONUS: Work above and beyond what is expected _____/5
TOTAL _____/50 PTS.

GROUP PROJECT EVALUATION

GROUP MEMBERS:______________________________________________________
__________________________________________________________________

1. Describe how your group worked together:
   A. We worked well together, no problems.
   B. We had a few problems, but each group member contributed to the project
   C. One or two group members did all the work for the project.

2. How much time did your group spend working together during school?
   A. 1-5 hours.
   B. 5-10 hours.
   C. More than 10 hours.
Did everyone participate: Yes No

3. How much time did your group spend working together after school?
   A. 1-5 hours.
   B. 5-10 hours.
   C. More than 10 hours.
Did everyone participate: Yes No

4. For cooperation, I would rate our group (0=poor; 10=excellent):
   A. 0-3, minimal cooperation.
   B. 4-7, some cooperation.
   C. 8-10, everyone contributed.
Comments and/or suggestions (use back, if necessary):
LESSON 12 SHARING WITH THE COMMUNITY

Overview
This lesson provides an opportunity for students to summarize what they have learned about their community, and specifically their neighborhood study site, and put it into a format that they can present or display to the community.

Objectives
Students will be able to:
1. Compare and contrast their neighborhood study site with other neighborhoods in the community.
2. Give examples of community design elements.
3. List three recommendations to enhance the neighborhood.
4. Organize data onto a poster board, powerpoint, or other format.
5. Present a final project to the community (via website, open house, meeting of city or county decision-makers, etc.).

Procedure
1. Working in their ‘neighborhood view teams’ from Lesson 3, students design a poster or powerpoint presentation that describes their assigned neighborhood. Components may include:
   a. Photos of the neighborhood depicting the streetscape, individual buildings, features of the neighborhood that they like and dislike, the neighborhood’s landscape setting, etc. (Lesson 3 – Neighborhood View Teams).
   b. A map of the neighborhood showing its location within the overall community (Lesson 3 – Neighborhood View Teams).
   c. Their sketch and written paragraph describing what they would do to enhance their neighborhood (Lesson 4 – What Do You Want Your Community to Look Like?).
   d. Results of their community survey (Lesson 7 – Conducting a Community Survey & Lesson 7 – Compiling Survey Results).
   e. Brochure that presents the attractive aspects of the neighborhood (Lesson 11 – Here’s What’s Great About My Community: Design a Brochure).
   f. Title, captions (for parts a-e above) and team members’ names.

2. Once the posters (or powerpoint presentations) are complete, students will develop an outline for an oral presentation and practice their public speaking skills. The presentation should include the appropriate information for the neighborhood described in objectives #1-3 above. Students’ presentations should demonstrate overall comprehension of the main ideas of the unit.

PRESENTATION OUTLINE:
   a. Show the location of your neighborhood on a map of your city.

   b. Show the original photo of your neighborhood. Describe your neighborhood and any unique characteristics. Compare and contrast your neighborhood with other neighborhoods in the community. Address at least three of the following community design elements: architectural style, landscaping, signage, lighting, parking, compatibility of building designs, natural features in the neighborhood.

   c. Present the community survey findings.
d. Show the sketch and describe the changes that the team made, and why these changes were made. Suggest at least three recommendations to enhance the neighborhood.

e. In the closing comments, summarize what the team learned and thank the audience for coming and listening to the presentation.

**Allow two class periods for instruction on how to present information to the public, and to practice presentations in front of the class. This is a team effort and all students need to be involved in the public presentation process, i.e. each team member must present one part of the team’s presentation.**

3. Instruct the students on the appropriate delivery of information, such as:
   - maintain eye contact with the audience,
   - proper stance,
   - present material in a serious manner,
   - clear speech - speak loudly and not too fast,
   - point to parts of the poster as it is being discussed.

**Assessment**

Use the rubrics on the next page to assess the oral presentation and the poster. The oral presentations may be graded during class time, or during the public presentation.

**Michigan Content Standards Addressed**

**Language Arts**

Standard 6. Voice
   ♦ All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts that enlighten and engage an audience.

Standard 7. Skills and Processes
   ♦ All students will demonstrate, analyze, and reflect upon the skills and processes used to communicate through listening, speaking, viewing, reading, and writing.

Standard 11. Inquiry and Research
   ♦ All students will define and investigate important issues and problems using a variety of resources, including technology, to explore and create texts.

**Social Studies**

Strand V. Inquiry Use methods of social science investigation to answer questions about society.

Standard V.1 Information Processing
   ♦ All students will acquire, organize, interpret, and present information; and use a variety of electronic technologies to assist in accessing and managing information.

Standard V.2 Conducting Investigations
   ♦ All students will conduct investigations by formulating a clear statement of a question, gathering and organizing information from a variety of sources, analyzing and interpreting information, formulating and testing hypotheses, reporting results both orally and in writing, and making use of appropriate technology.
ORAL PRESENTATION ASSESSMENT for: ___________________________

**COMPREHENSION:** Understands assignment; each group speaks for 5-8 minutes

<table>
<thead>
<tr>
<th>0</th>
<th>2</th>
<th>4</th>
<th>6</th>
<th>8</th>
<th>10</th>
</tr>
</thead>
</table>

**ELOCUTION:** Clear speech, loudness of voice.

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
</table>

**DELIVERY:** Eye contact; stance; serious about the subject matter.

<table>
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<tr>
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<th>4</th>
<th>5</th>
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</table>

**CLOSING:** Summarizes the project.

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<tr>
<th>0</th>
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<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
</table>

**COMMENTS:**

**TOTAL SCORE** (25 points possible):

---

POSTER DISPLAY ASSESSMENT

**GROUP #______**

**NAMES:** __________________________  __________________________

<table>
<thead>
<tr>
<th>Neatness/quality of work</th>
<th>____ 20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community survey</td>
<td>____ 10</td>
</tr>
<tr>
<td>Map</td>
<td>____ 10</td>
</tr>
<tr>
<td>Sketch</td>
<td>____ 10</td>
</tr>
<tr>
<td>Photo</td>
<td>____ 10</td>
</tr>
<tr>
<td>Captions</td>
<td>____ 10</td>
</tr>
<tr>
<td>Title</td>
<td>____ 10</td>
</tr>
<tr>
<td>Team members' names</td>
<td>____ 10</td>
</tr>
<tr>
<td>Paragraph description</td>
<td>____ 10</td>
</tr>
</tbody>
</table>

**Total Points** _____ / 100
# Rubric for a Visual Display

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Substance</strong></td>
<td>Accurate information is portrayed from a number of sources. All of the guidelines were followed.</td>
<td>Accurate information is portrayed from more than one source. The necessary components of the project are clearly labeled.</td>
<td>Accurate information is portrayed from a reputable source.</td>
<td>Information portrayed may be inaccurate. Necessary components are missing.</td>
</tr>
<tr>
<td><strong>Originality</strong></td>
<td>Several innovative ideas are depicted in the display.</td>
<td>One or two original ideas are depicted in the display.</td>
<td>The display contains an original idea, or display details are interesting.</td>
<td>Original ideas are absent. Student may have copied material from another source.</td>
</tr>
<tr>
<td><strong>Color and Form</strong></td>
<td>The display is visually appealing. Use of color is substantive and decorative. An organized form is followed throughout the display.</td>
<td>The display is attractive. Colors are used to convey information. A standard format is followed.</td>
<td>Display components are organized properly. Content is conveyed with the use of color.</td>
<td>Content is displayed in an unorganized manner. Use of color is minimal or absent.</td>
</tr>
<tr>
<td><strong>Drawing, Sketching and Labeling</strong></td>
<td>Rulers are used in forming lines. Letters are written or printed neatly. All essential labels are present.</td>
<td>Drawings, sketches and labels are neat and tidy.</td>
<td>Overall the display is neat and readable. Some labels are present.</td>
<td>Content appears to have been drawn hastily. Overall appearance is messy. Labels are inaccurate.</td>
</tr>
</tbody>
</table>
Lesson 13       BIODIVERSITY STUDY: Disturbed v. Undisturbed

Overview
Students will examine the number of plants and animals found in different habitats.

Objectives:
Students will be able to:
1. Identify abiotic characteristics of undisturbed areas and disturbed areas.
2. Compare and contrast disturbed and undisturbed areas.
3. Measure biodiversity qualitatively.
4. Describe the ecological benefits of biodiversity.

Procedure
1. Ask students what kinds of foods they like to eat. Focus on the variety and what it would be like if they only had one type of food. What if that one food source was suddenly gone?
2. Discuss that healthy ecosystems depend on variety in order to stay "balanced" and healthy.
3. Take students to where disturbed and undisturbed areas are near each other: pavement, lawn/park, naturally vegetated area. Ask students to describe each area. Focus on diversity or lack of diversity.
4. Demonstrate how to do a quadrat investigation in a grassy area. Show how many different species there are if you look closely. Discuss how a greater diversity of animals can have their habitat/food needs met when there is a greater diversity of plants available.
5. Divide students into groups of 2-3.
6. Give each group a quadrat and a collection container.
7. Assign half the students to a paved area, lawn, or park, and the other half to a native vegetation area. Lay down the quadrats, and collect small samples of every different plant within the quadrat.
8. When students have exhausted the variety of plants, or time runs short, have all students return. Tape student samples of different plants in appropriate columns on data sheet: "Disturbed" and "Undisturbed."
9. Discuss:
   - Which area serves the food needs of more wildlife?
   - Which area offers a greater variety of habitats for nesting, cover, water, food?
   - What reduces diversity? disease, insect infestation, exotic species
   - How does plant diversity contribute to a more ecologically healthy environment?

Assessment
Data forms are completed. Student can explain the value of diversity to stable and sustainable ecosystems.

Michigan Content Standards Addressed
Science
Strand III.5 Life Sciences ~ Ecosystems  All students will analyze how humans and the environment interact.
  Standard III.5.6 MS Describe ways in which humans alter the environment.
  Standard III.5.1 HS Describe common ecological relationships between and among species and their environments.
  Standard III.5.4 HS Describe responses of an ecosystem to events that cause it to change.
  Standard III.5.6 HS Explain the effects of agriculture and urban development on selected ecosystems.
Math
Strand III. *Data Analysis and Statistics*
Standard III.1 Collection, Organization and Presentation of Data
♦ Students collect and explore data, organize data into a useful form, and develop skill in representing and reading data displayed in different formats.

Standard III.2 Description and Interpretation
♦ Students examine data and describe characteristics of a distribution, relate data to the situation from which they arose, and use data to answer questions convincingly and persuasively.

Standard III.3 Inference and Prediction
♦ Students draw defensible inferences and make predictions.

Social Studies
Strand II. Geographic Perspective
Standard II.2 Human/Environment Interaction
♦ All students will describe, compare, and explain the locations and characteristics of ecosystems, resources, human adaptation, environmental impact, and the interrelationships among them.
Biodiversity Study Data Form

Team Members: ______________________________________________________________

Location: ______________________________ Date: ______________

Record what you observe.

<table>
<thead>
<tr>
<th>Site 1: Pavement (Disturbed Area)</th>
<th>Site 2: Lawn (Disturbed Area)</th>
<th>Site 3: Native Vegetation (Undisturbed Area)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of different species:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trees ______________</td>
<td>Trees ______________</td>
<td>Trees ______________</td>
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<tr>
<td>Shrubs ______________</td>
<td>Shrubs ______________</td>
<td>Shrubs ______________</td>
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<tr>
<td>Grasses/others ______________</td>
<td>Grasses/others ______________</td>
<td>Grasses/others ______________</td>
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<tr>
<td><strong>Number of different species:</strong></td>
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<tr>
<td>Spiders____</td>
<td>Spiders____</td>
<td>Spiders____</td>
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<tr>
<td>Insects____</td>
<td>Insects____</td>
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<tr>
<td>Other Invertebrates____</td>
<td>Other Invertebrates____</td>
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<td><strong>Mammals:</strong></td>
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<td><strong>Amphibians:</strong></td>
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<td><strong>Birds:</strong></td>
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<tr>
<td><strong>Total # Vertebrates:</strong></td>
<td>Total # Vertebrates:</td>
<td>Total # Vertebrates:</td>
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</tbody>
</table>
LESSON 14  Artificial Nest Predation Investigation

Developed by Laura Kruger and Audra Bassett, graduate students in the School of Forest Resources & Environmental Sciences at Michigan Technological University

Overview
Students design an investigation to evaluate the effects of land use or land management on the predation of ground-nesting birds using artificial eggs to simulate the eggs of ground-nesting bird species.

Objectives
At the end of the lesson, students will be able to:
1. Create a map of a study area.
2. Identify places birds commonly lay eggs, and compare the relative advantages of each.
3. Set up a field experiment by first posing a hypothesis, and then designing an experiment to answer test it.
4. List potential predators of bird eggs.
5. Collect and analyze data.

Teacher Background
Roads cover six million kilometers of land in the contiguous United States. Previous studies on songbirds have suggested that nest predation increases with road width and traffic use, but decreases with distance from the road. Increasing numbers of roads, habitat fragmentation, loss of songbird habitat due to commercial and residential development, and increased human activity are all aspects of community growth. The presence of a diverse songbird population contributes to a community's natural biodiversity and residents' quality of life.

One way that scientists can assess the environmental impact of community growth is by designing artificial nest predation studies to measure changes in nesting success due to increased likelihood of being eaten by predators. Scientists make artificial eggs out of plasticine or clay and place them in a fake nest on the forest floor and observe what happens over time. Predators, such as mice, squirrels, raccoons are tricked into thinking that the clay eggs are a potential food source.

Some Possible Study Questions Using “Artificial” Eggs
Questions that relate to development:
- Do predation rates vary in an open field vs. forest?
- Do predation rates vary in an edge habitat vs. interior forest
• Are predation rates higher along a human-caused edge (trail, road) v. a natural edge (river)?
• Is predation higher in a town park v. a natural grassland or interior forest?
• Are predation rates higher in smaller forests (fragments) v. larger forests?
• Do predation rates vary an urban area v. an agricultural area?
• Do predation rates vary by road type (paved, unpaved) or distance from a road?

Other questions:
• Do predation rates vary in coniferous v. deciduous forests?
• Are certain egg colors more attractive to predators?
• Do predation rates vary in wetland v. interior forest habitats?

Any variable that can be divided into two levels may be studied: housing density, edge effect, type of edge, road type, habitat type, etc. The possibilities are endless!

Where Do Birds Nest?

When the snow begins to melt in the spring, many birds begin their long migratory journey North to their summering grounds. Why do birds fly North for the summer?
• Warmer temperatures signal the increased availability of food—insects, arthropods, and plants.
• Mate and lay eggs.

Life as a bird is not easy when it comes to reproduction. Birds not only have to find good locations to place their nests but they also have to protect these nests from all kinds of predators. How many have seen bird nests before? Where were the nests? Trees, nests, houses, on the ground.

Why is the ground a good place for some birds to lay their eggs? How can birds and their nests keep from getting eaten? Ground nesters tend to have cryptically colored plumage that helps them to “fit-in” and conceal their nest.

Why might the ground not be such a good place to lay eggs?
• More easily stepped on
• Eaten by predators

Some common forest ground-nesting bird species include: Oven bird, Hermit thrush, Veery

What kinds of animals in the forest might find and eat bird eggs on the ground?
• Mammals: mice, chipmunk, skunk, bear, raccoon
• Reptiles: snakes
• Raptors or other predatory birds: owls, hawks, jays, crows

Procedure

Part I – Design Artificial Nest Study

Either as a class or in small groups of 3 students, select a question to investigate and design their study. Optional: Research information on your study question. Identify the appropriate location to carry out your study.
Scientists often set-up studies using transects. A transect is a straight line that can be run east/west, north/south, etc. on the ground along which observations or measurements are made at certain distances. Why do you think scientists use transects?

- Easy to follow
- Easy to set-up
- Easier to find sample sites

Show students various study design. For example, show how to locate two transects, i.e. one next to a road and one next to a trail. One possible study design is to use one row of nests spaced 5 meters from the flag trees, which are 25m apart along the transect. See the sample study design illustrated below.

**Sample Study Design** (draw onto study design grid map)

![Sample Study Design Diagram]

**Part II – Draw Map of the Study Design**

Next, distribute the Study Design Grid Map. Instruct students to draw their nest placement lay-out on the Study Design Grid Map. Make a KEY or map legend that shows your symbol for the nests, transects, and flag trees. Use a distance of 25 steps (meters) or more between nests. You may use only one set of nests along a transect, or several as shown above.

Demonstrate how to make a simple map and include key components:

i. Legend (key), symbols
ii. Scale bar
iii. North arrow
iv. Study design
Part III – Make Artificial Eggs

1. Distribute plasticine or clay, plastic/rubber gloves, and ziploc bags. (Students must wear gloves to make sure they do not put their “scent” on the eggs….human scents can discourage natural predators or attract predators that normally would not eat bird eggs, altering our results.)

2. Demonstrate how to make egg (roll in hands until right size/shape of bird species’ egg you select.) Each student should make 3 eggs per nest; 10 nests per transect (exact number depends upon study design), times the number of transects.

3. When finished, place the eggs into Ziploc bag to transport to the study site.

Part IV – Lay Out Nests

Now we are ready to go outside to set up our study and lay-out our nests. Students will need to bring: eggs, plastic gloves, clipboard, Study Design Map and Artificial Nest Location data form, pencil, compass, and flagging (GPS units optional).

Locate the start of the transect and first flag tree. Walk the desired number of paces using pre-cut yarn lengths or meter tape along the transect (along the road, trail or river) to your first flag tree. Mark the flag tree with flagging and label with nest location: Transect # - Nest # Example: 1-1. Describe the flag tree (trunk diameter, species) on your Artificial Nest Location data form. The flagging is not placed immediately next to the nest location, so as not to discourage or attract predators.

Walk 5 meters perpendicular from the flag tree away from the road, trail, or river. Look for a good nest location where ground-nesting birds would typically put their eggs (good hiding places!):
- Under small trees
- Alongside logs
- Under brush

Scrape/clear-out a small spot for the nest (small, rounded depression), and gently place eggs in nest. BE SURE to WEAR GLOVES when making nests and placing eggs to minimize human scent on the eggs/nest. The teacher may demonstrate by making first a nest and placing 3 eggs in the nest.

On the Artificial Nest Location data form, record a description of the flag tree and the location of your nest from the flag tree using your compass (and GPS unit). The teacher may need to demonstrate how to use the compass or GPS unit. If using a compass: find North, then point the directional arrow toward the nest while standing at the flag tree. Record the direction in degrees on the data form. Next, record the direction to the nest from another object. Add any other descriptive information, such as species and diameters of nearby trees, etc. to help you find the next location when you return. This is critical!! If you can't find the nest again, you don't get any data!!

Sample description recorded in data form:

<table>
<thead>
<tr>
<th>Transect # - Nest #</th>
<th>GPS Lat. &amp; Long.</th>
<th>Description of Flagged Tree</th>
<th>Description of Nest Location (from flagged tree)</th>
<th>Describe Nest Location from another Object</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nest 1-1</td>
<td></td>
<td>6” diam. Maple tree</td>
<td>5 m-320° from Flag Tree at base of 1” diam. Beech tree, 3 blue eggs</td>
<td>.5’ from downed maple trunk</td>
</tr>
</tbody>
</table>

Go to the next flag tree by taking the desired amount of paces. Place flagging on the flag tree and repeat nest placement procedure and record location information in data form. One-by-one, have students lay out nests, or give student groups the necessary time to place their eggs according to their study design plan.
Assign students within each team to the following tasks, or if students are younger, teacher will direct students to do the following tasks:

Task #1: Measures distance to each flag tree. Mark flag tree with flagging and label with Transect # - Nest #. Draw flag tree location on Study Design Grid Map. Number nests on map the same as what is on the flag!

Task #2: Find location on ground for next, 5 m from flag tree. Make nest depression by scraping away debris. Place eggs.

Task #3: Record description of flag tree and nest location on data form. Note trees, rocks, and other objects that will help you find the nest next week.

Part V – Checking Nests

Students may return at intervals of three, six and twelve days, etc. depending upon the study design, to check their nests. Students should bring their Artificial Nest Location data form, Study Design Grid Map, and their Artificial Nest Observation data form.

Discuss with students how they will determine if a nest or egg has been predated upon:

- Will see bite marks in eggs.
- Eggs are missing.

When retrieving eggs, place bitten eggs into a Ziploc bag labeled with the nest location and bring back to classroom for analysis. *Handle eggs carefully,* just picking up eggs can sometimes smear out any bite marks! Note number of missing eggs on the Artificial Nest Observation Data Form. Be careful not to step on the eggs!!!! **On your last visit, retrieve all flagging and eggs—we don't want to litter the forest!**

Part VI – Analyze the Data

Bring eggs back to classroom. Have students assess eggs and determine which ones were really bitten (some eggs may have marks on them from sticks/leaves). Over time, you may want to assemble a reference collection of example eggs that have marks from mice, chipmunks, raccoons, deer, and birds.

**Clues to which predator disturbed the artificial egg:**

- Birds have a triangular shape mark with no distinct teeth marks.
- The size of the egg will rule out certain predators.
- Mammals all have distinct teeth marks and the best way to identify these is to match them to a skull (if available). Teeth marks are usually the incisors or the molars. For the incisors, look at the number of incisors and the width of the teeth (mice<chipmunk<skunk or raccoon). Eggs with molars marks are generally from mammals like skunks or raccoons.

Bring in animal skulls and skins typical of local wildlife, so students can see what kinds of predators may have bitten or eaten their eggs. Use skulls to make “mock” bite marks so students can compare to their eggs. Wildlife identification books will also be helpful.
Discuss the results. Possible discussion questions include:

- Describe ways in which humans alter the environment. *Roads, housing, commercial development.*
- Describe common ecological relationships between and among species and their environments.
- Explain the ecological effect of increased nest predation on the forest ecosystem. How will increased nest predation affect the food chain/web? How will increased nest predation affect our enjoyment of the forest? Forest biodiversity?
- What do our study results tell us about the effect of urban development on avian reproduction and survival rate.
- What is our conclusion?
- Is this adequate data to draw conclusions? What other studies might we conduct?
- How could the study design have been improved?

**Part VII - Graph the Data**

Have students make a bar graph to display their data. Be sure to label the axis:

- Location (x-axis) – numbered nests along the transect.
- Number of eggs predated (y-axis)

**Assessment**

- Study Design Grid Maps show flag trees, numbered nest locations, legend, scale, North arrow.
- Artificial Nest Location data form is completed with good descriptions.
- Artificial Nest Observation form describes number and condition of eggs.
- Student can draw conclusions from their data.
- Students are able to display their data correctly in an appropriate graphic form.

**Michigan Content Standards Addressed**

**Social Studies**

Strand II. *Geographic Perspective*

Standard II.2 Human/Environment Interaction

- All students will describe, compare, and explain the locations and characteristics of ecosystems, resources, human adaptation, environmental impact, and the interrelationships among them.

Standard V.2 Inquiry

- Construct an answer to the question posed and support it with evidence.

**Science**

Strand III.5 Life Sciences ~ *Ecosystems* All students will analyze how humans and the environment interact.

Standard III.5.6MS Describe ways in which humans alter the environment.

Standard III.5.1 HS Describe common ecological relationships between and among species and their environments.

Standard III.5.6 HS Explain the effects of agriculture and urban development on selected ecosystems.

**Math**

Strand III. Data Analysis and Statistics

Standard III.1 Collection, Organization and Presentation of Data

- Students collect and explore data, organize data into a useful form, and develop skill in representing and reading data displayed in different formats.

Standard III.2 Description and Interpretation

- Students examine data and describe characteristics of a distribution, relate data to the situation from which they arose, and use data to answer questions convincingly and persuasively.

Standard III.3 Inference and Prediction

- Students draw defensible inferences and make predictions.
REFERENCES

Web Resources
National Bird Identification Information Center

www.Enature.com
http://animal.discovery.com/guides/mammals/mammals.html
http://www.birds.cornell.edu/programs/AllAboutBirds/BirdGuide/

Educator’s guide to Bird Study
http://www.birds.cornell.edu/schoolyard/Research/index.html

Scientific Journals available at most University Libraries
Zoology, Canadian Field-Naturalist, American Midland Naturalist

Talk with local scientists
Universities or Colleges
State offices
Organizations and clubs, ex. Audubon Society

Field Guides
National Geographic Society Field Guide Field Guide to the Birds of North America
4th Edition, 2002. Comprehensive, covering the rarities, including species found in such places as the
western Aleutians of Alaska and the Dry Tortugas of Florida. And although it's fairly large for a field
guide, it's still manageable in the field. Some beginning birders may be overwhelmed with the great
amount of information available in this field guide.

Sibley Guide to Birds The Sibley field guide to North American birds is the most exciting field
guide to come out since Roger Tory Peterson first invented the field guide in the early years of the 20th
century. This book has 6600 beautiful pictures of American birds in lifelike poses. It's a big book, with
over 500 large pages.

Stokes, Donald and Lillian Stokes. Stokes Field Guide to Birds: Eastern Region
The Stokes’ guides are probably the easiest one for beginning birders to get started. The authors have
gone a long way to make a complex body of information accessible to the beginner.

Some people think it's still the best field guide North America has ever had.
Ehrlich, Paul and David Dobkin, Darryl Wheye. *The Birder's Handbook: A Field Guide to the Natural History of North American Birds (Including All Species That Regularly Breed North of Mexico)* Compact and yet filled with information, this portable encyclopedia of North American bird behavior is a complement to field guides. Learn more about the species you see in the field, and—when in doubt—use this handy reference as another


Kays, Roland W. and Don E. Wilson. *Mammals of North America* Most comprehensive and up-to-date field guide to the mammals of North America. Written by two leading authorities, no other reference covers all resident species north of Mexico, mammals large and small. With full-color illustrations for every one of the 442 species

Poole, A. and Gill, F. (eds). *The Birds of North America*. Academy on Natural Science and American Ornithologists’ Union. Contains species accounts that cover natural history, status, conservation issues, and many other topics
Lesson 15  CHANGING THE LAND

Overview
Students compare historical aerial photographs with current aerial photographs and determine what factors influenced land use decisions; evaluate the impacts of different land uses on an area; and the affect of future changes in land use on a community.

http://dnr.wi.gov/org/caer/ce/EEK/teacher/landuse.htm

Objectives:
Students will be able to:
1. Compare historical aerial photographs with current aerial photographs and determine what factors influenced land use decisions.
2. Evaluate the impacts of different land uses on an area;
3. Consider future changes in land use and the affect on a community.

Background
Communities make land use decisions every day. Take a look at areas surrounding large cities, in redeveloping downtown areas of older cities, and in the countryside and you’ll see land use changes. Given the impact that humans have already had and continue to have on the land, a major challenge facing communities, both urban and rural, is how to plan for continued growth. What are the best ways to accommodate growth and minimize the negative impact on the existing community and the natural environment?

Changes in communities can be easily seen by comparing historical aerial photographs to current ones. To make this activity most relevant to your students, try to use photos of your community. Aerial photos can be purchased from most Regional Planning Commission offices. Most locations have photos going back to the 1960s or 1970s. Another source of aerial photos is your county Conservation District office.

Procedure
1. Divide the class into teams of 3-4 students. Place the plastic sheets over the older aerial photographs. Identify the different land uses on these photos using different colored markers to show each land use. Look for waterways, forests, agriculture, residential areas, industry, parks, and transportation corridors.
2. Place the same plastic sheet over the most recent aerial photo. Identify the changes that have occurred in land use. Students should answer the following questions:
   a) What were the major changes in land use? What developments occurred? Use markers to show the changes.
   b) What types of land use were lost? Forests? Agriculture? Why do you think these changes were made?
   c) What changes occurred in the roadways or railways? Why?
3. Ask each team to identify new areas for community development. Assume your community will require 50 additional single family homes, five apartment buildings, and five new businesses in the next year. (If you’re doing this for a large urban area, you may want to increase the number of required new homes, apartments and businesses to better reflect reality or you may want to single out and plan for a certain area of the city.) Have students mark where this development should occur. Discuss why teams targeted certain areas for development. Will transportation systems need to change? List the impacts of these developments on your community.

4. Suggest ways to reduce the impact of the land use changes on wildlife habitat, water quality, and quality of life.

Assessment
Data forms are completed. Student can draw conclusions.

Michigan Content Standards Addressed

Social Studies
Strand II. Geographic Perspective
Standard II.2 Human/Environment Interaction
• All students will describe, compare, and explain the locations and characteristics of ecosystems, resources, human adaptation, environmental impact, and the interrelationships among them.

Standard V.2 Inquiry
• Construct an answer to the question posed and support it with evidence.

Language Arts
Standard 3. Meaning and Communication
All students will focus on meaning and communicating as they listen, speak, view, read, and write in personal, social occupational, and civic contexts

Science
Strand III.5 Life Sciences ~ Ecosystems
All students will analyze how humans and the environment interact.

Standard III.5.6MS Describe ways in which humans alter the environment.

Standard III.5.1 HS Describe common ecological relationships between and among species and their environments.

Standard III.5.4 HS Describe responses of an ecosystem to events that cause it to change.

Standard III.5.6 HS Explain the effects of agriculture and urban development on selected ecosystems.
UNIT ASSESSMENT

1. Explain suburban sprawl. List three impacts on a community of sprawl.
   i. 
   ii. 
   iii. 

2. Explain the difference between an area that has mixed zoning and one that has a strict/separate zoning. Which one would you prefer to live in and why?

3. How has our community, and the surrounding area, changed since 1960?

4. What historic features around our community did we learn about? Describe some of the ways or things that are now being valued and preserved.

5. Explain why it is important for citizens to learn about land use and planning, and how local governments regulate land.

6. What is visual pollution and how can it be prevented or reversed?

7. Is the choice to grow or not to grow? Explain your answer.
How Well Do You Know Your Place?

Try this quiz to find out if you are a community whiz! If you can answer all of these questions, you deserve a prize for awareness of your local environment and community. If you are not sure of some of the answers, check out the sources of information listed below each set of questions.

BUILDINGS
What building materials commonly used in your region are from local sources?

What color are the bricks and stone that are quarried in your region?

Sources of information: Local builders’ association, historian

ENERGY
What portion of your electricity is generated using nuclear power? Hydroelectricity? Fossil fuels? Wind? Solar?

Sources of information: Local utility or fuel supplier

FOOD
What is the growing season in your area?

Where did the food on your dinner plate last night come from? How far is this from where you live?

Where can you buy “locally grown” food?

Sources of information: Food coop, local grocer, Natural Resources Conservation Service office

COMMUNITY
What are some important local issues where you live?

Name the decision-making body in your community?

List one or more contributions to the “common good of your community” made by a local person?

Can you name an organization in your community that helps those in need by providing food, comfort, transportation, or companionship?

Sources of information: Local city/town offices, newspaper, phone book

WASTE
Where does your garbage go?

What materials can be recycled in your community?

Where does hazardous waste in your community go?

Sources of information: Municipal public works offices, Department of Natural Resources offices.

PLANTS & WILDLIFE
Can you name 25 species of birds, mammals, reptiles, amphibians, trees, and flowers in your area?

Which birds stay in your area year-round?

Sources of information: Department of Natural Resources offices, local Audubon chapter, sportsmens’ clubs, books

LOCAL HISTORY
Which Native American tribe lived in your area prior to Europeans?

When did Europeans first come to the area and why?

Why was your town or city established? Why was the location important?

What was on the land where you now live a hundred years ago?

Sources of information: Public libraries, native people, older residents, historical museum or archives

WATER
Name the watershed in which you live.

When you turn on the faucet at your house, where does the water come from—lake, river, groundwater?

When you flush the toilet, where does the water go?

Sources of information: Conservation district or Natural Resources Conservation Service office, Municipal public works offices, EPA Surf Your Watershed website http://www.epa.gov/surf/

POLLUTION & THE ENVIRONMENT
What are sources of pollution in your community?

What organizations in your area are working to protect and enhance the environment?

What local, state and federal agencies regulate pollution of air, water and land in your community?

Sources of information: Department of Natural Resources offices, phone book, public library, internet

Adapted from Alternative Journal 28:3 Summer 2002
Picture This!

Building A

Pictured on the left, is a 2-story building with hardwood floors, beautiful hardwood trim, and large spacious rooms. The walls are covered with a dark brown paneling. The floors are covered with an olive green and gold striped linoleum. There is a false acoustic tile ceiling. The large window display windows in front are covered. An addition was put on a few years ago. The left side has been rented as several apartments. A small repair shop is in the adjacent building. There is an empty lot next door.

Building B

Pictured on the right is an abandoned three-story machine shop made of sandstone from the Upper Peninsula. Built in 1911, the shop has hewn oak beams and solid oak floors that were designed for heavy loads. Except for broken windows and a rotted roof, the building is in very good shape. It occupies ten acres, with many other buildings from the same time period in various conditions. Since this building is located across the river from the downtown business district, many would like to see it removed as it is becoming an eyesore.

Your Assignment

Choose one of these buildings and using what you have learned and the information provided, develop a plan for what to do with the structure and surrounding property. Explain how your recommendation will enhance community image and property value.

I recommend...

Glossary

aesthetic - pleasing to the senses; a pleasing appearance.

Anywhere, U.S.A. – where the built environment contains primarily franchise businesses and franchise architecture.

architecture or architectural style – the exterior design and shape of a building, including roof line, windows, etc. An
‘architecturally compatible building’ blends well with nearby buildings and the natural landscape.

**best management practices (BMPs)** - specific land and water management activities that are practical, affordable, and protect ecological health; also called “conservation practices.”

big-box design – **large box-shaped buildings with little or no architectural detail or color.** Typically part of a chain of stores, called a franchise, built across the region or country.

**biodiversity** – diversity of plants, animals, and other life-forms.

**BMP** – see Best Management Practices.

**brownfields** - polluted industrial sites no longer used.

**buffer** - vegetation maintained along a stream or lakeshore to protect water quality by filtering sediment and contaminants from runoff before it reaches the water. Buffer zones are an example of a best management practice. Vegetation may also be used as a visual screen to block less-pleasing views and reduce noise.

**built environment** - structures such as buildings, roads, bridges, and other forms of construction which are not part of the natural environment.

**cluster development** – where houses are built close together, rather than on large single lots, so that a large space can be set aside for recreational use, scenic views, farming or forestry.

**commercial** – used for business and profit-making.

**common good** - what is best for most of the people affected.

**congestion** - crowding with automobile traffic or lots of people.

**contaminants** – unnatural or unwanted substances, often caused by human activities, that may damage or kill plants, wildlife, or humans, or upset the natural balance in an ecosystem. Occasionally contaminants may be naturally caused by the geology, such as high uranium or selenium in the water.

**consensus** - a general agreement of those concerned.

**conservation easement** – a way for private property owners to voluntarily protect their land from certain specified future uses. An easement needs to be held by a unit of government, a local land conservancy, or other organization that will enforce the easement in perpetuity.

**cultural character** – features, both natural and man-made, which reflect the community's history and unique “personality.”

**developer** – a person who earns money by constructing new housing, shopping centers, and other buildings or renovates existing structures.

**development** - a tract of land with homes, businesses, or other structures built on it.

**ethics** - a guiding philosophy or set of values.

**exotic plants** or **exotic landscaping** – using plants that are not native to the local area.

**façade** – materials that cover the exterior of a building.

**franchise** – the same store, often built to look exactly the same, located in multiple locations across the region or country; may be called a ‘chain of stores.’

**franchise architecture** – where the same design is used for all of the restaurants, hotels, etc. owned by the same company.

**habitat fragmentation** – where there are no longer continuous connections between forests and fields for wildlife to travel through and use for food and shelter.

**historic resource** - old structures or other physical features which reflect the history of a community and can act as a resource both culturally and economically through tourism.
impervious surface – impermeable, water does not pass through.

interjurisdictional - more than one governmental unit has control over different aspects of the same decision.

incentives - encouragement through recognition, peer pressure, or economics to act in a certain way.

industrial - relating to industry or the production of goods.

infrastructure – all of the support systems needed to provide public services including police, fire protection, drinking water, wastewater treatment, roadways, etc.

landscaping – combination of living plants (trees, shrubs, flowers, grass) and nonliving materials (rocks, fences, etc.) placed around a home or building to make it more attractive.

land use – ways that humans use the land, such as for homes (residential), businesses (commercial), industry, agriculture, and recreation.

land use plan – a guide, adopted by a local government or other group, for how land within a specific area should be used.

macroinvertebrate – an animal without a backbone that is generally visible to the unaided eye. Some species are used to indicate water quality of streams and lakes.

master or comprehensive plan – a plan for a community which states the community’s intentions for land use, natural resource preservation, economic development, housing, and infrastructure.

median – strip of pavement or vegetation that divides a street or highway.

native plant species – species of plants or animals that lived in the area before humans settled there.

natural character- the landscape that is typical to an area.

nonpoint source pollution – pollution from a variety of sources that runs off over a large area, rather than from a specific pipe.

off-premise advertising – when a business puts up a sign away from the actual business, such as billboards, to attract customers.

open space – an area that is not built upon, that may be vegetated or man-made (i.e. playground).

ordinance – a local law adopted by a town, city or township that guides the type of activity or behavior allowed.

perennial – plants that come up each year without being planted. All trees and shrubs are perennial. Annual plants must be planted from seed each year.

pervious – permeable, water can infiltrate through.

plan view – birds-eye view of a site looking down from above.

point source – polluted water that is discharged through a pipe to a lake, stream, or groundwater.

pollution – substances in the water that can cause harm to plants, animals, or people.

regulation – a rule enforced by a government agency or other authority that guides the type of activity or behavior allowed.

renovation – to improve a building so that it is functional, although it may have lost its original historic appearance.

residential – area where land is used for housing.

restoration – improving a building, through repair and alteration, so that it can be used while still preserving those features of the property which are significant to its history, architecture and cultural value.

runoff – rain or snowmelt that runs off across the land to a body of water.
rural – in the country, away from the densely populated city. Homes are spread out, low population density, often with farms and forested land.

**screening** – structure or planting to conceal from public view

**sense of place** – the special qualities of a place that make it feel like home.

**site plan** – a drawing to scale of a site including buildings, structures, property boundaries, and roads.

**sprawl** - linear “strip” of development along roadways leading to a community. Common characteristics of sprawl development include: excessive signage, limited landscaping, uncoordinated architecture, and designed for only vehicular access. Sprawl can be a collection of shopping centers, strip malls, fast food places, and homes.

**streetscape** – the view one sees looking down a street.

**subdivision** – a planned housing development located away from a community’s downtown, on same-sized lots, and separated from a main road. Often, the homes look very similar.

**suburb or suburban** – area outside of a city with less dense population and less development, separating urban and rural areas.

**stewardship** – caring for natural resources

**swale** – a low area in the landscape where water flows.

**turbidity** – cloudiness in the water caused by tiny suspended particles of soil or other debris.

**urban** - where development is more dense, as in a city.

**viewshed** - all that can be seen from a specific point, including the natural landscape and built environment.

**vista** – view

**visual corridor** – the view along a road or other transportation route.

**visual character** – those aspects of the natural and built environment that are unique to an area.

**visual clutter** or **visual pollution** – a collection of objects that fills one’s view, including large, unattractive signs, billboards, excessive power lines, and mismatched development.

**watershed** – land area that drains water to a lake, river or stream.

**zoning** – ordinances or regulations that guide the type of development that can occur in a designated area.
Michigan Content Standards Addressed in Looks Count Curriculum Unit

SOCIAL STUDIES

Strand II. Geographic Perspective
Standard II.2 Human/Environment Interaction
♦ All students will describe, compare, and explain the locations and characteristics of ecosystems, resources, human adaptation, environmental impact, and the interrelationships among them.

Strand III. Civic Perspective
Standard III.3 Democracy in Action
♦ All students will describe the political and legal processes created to make decisions, seek consensus, and resolve conflicts in a free society.

Strand IV. Economic Perspective
Standard 1. Describe and demonstrate effects of economic forces on consumer decisions regarding purchase and disposal of goods and services and how this effects society.
Standard 2: Explain and demonstrate how businesses confront scarcity when producing and using resources, and when supplying the marketplace.

Strand V. Inquiry - Students will use methods of social science investigation to answer questions about society.
Standard V.1 Information Processing
♦ All students will acquire, organize, interpret, and present information; and use a variety of electronic technologies to assist in accessing and managing information.
Standard V.2 Conducting Investigations
♦ All students will conduct investigations by formulating a clear statement of a question, gathering and organizing information from a variety of sources, analyzing and interpreting information, formulating and testing hypotheses, reporting results both orally and in writing, and making use of appropriate technology.

Strand VI. Public Discourse and Decision Making
Standard VI.1 Identifying and Analyzing Issues
♦ All students will state an issue clearly as a question of public policy, trace the origins of the issue, analyze various perspectives people bring to the issue, and evaluate possible ways to resolve the issue.
Standard VI.2 Group Discussion
♦ All students will engage their peers in constructive conversation about matters of public concern.
Standard VI.3 Persuasive Writing
♦ All students will compose coherent written essays that express a position on a public issue and justify the position with reasoned arguments.

Strand VII. Citizen Involvement
Standard VII.1 Responsible Personal Conduct
♦ All students will consider the effects of an individual's actions on other people.

LANGUAGE ARTS

Standard 1. Meaning and Communication
♦ All students will read and comprehend general and technical material.

Standard 2. Meaning and Communication
♦ All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions.

Standard 3.
♦ All students will focus on meaning and communicating as they listen, speak, view, read, and write in personal, social occupational, and civic contexts.
Standard 6. Voice
♦ All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts that enlighten and engage an audience.

Standard 7. Skills and Processes
♦ All students will demonstrate, analyze, and reflect upon the skills and processes used to communicate through listening, speaking, viewing, reading, and writing.

Standard 9. Depth of Understanding
♦ All students will demonstrate understanding of the complexity of enduring issues and recurring problems by making connections and generating themes within and across texts.

♦ All students will apply knowledge, ideas, and issues drawn from texts to their lives and others’ lives.

Standard 11. Inquiry and Research
♦ All students will define and investigate important issues and problems using a variety of resources, including technology, to explore and create texts.

MATHEMATICS
Strand III. Data Analysis and Statistics
Standard III.1 Collection, Organization and Presentation of Data
♦ Students collect and explore data, organize data into a useful form, and develop skill in representing and reading data displayed in different formats.

Standard III.2 Description and Interpretation
♦ Students examine data and describe characteristics of a distribution, relate data to the situation from which they arose, and use data to answer questions convincingly and persuasively.

Standard III.3 Inference and Prediction
♦ Students draw defensible inferences and make predictions.

SCIENCE
Strand I. Construct New Scientific Knowledge
Standard I.1.1 MS Generate scientific questions about the world based on observation.
Standard I.1.2 MS Design and conduct scientific investigations
Standard I.1.3 MS Use tools and equipment appropriate to scientific investigations
Standard I.1.5 MS Use sources of information in support of scientific investigations.

Strand III.5 Life Sciences ~ Ecosystems All students will analyze how humans and the environment interact.
Standard III.5.6MS Describe ways in which humans alter the environment.
Standard III.5.1 HS Describe common ecological relationships between and among species and their environments.
Standard III.5.4 HS Describe responses of an ecosystem to events that cause it to change.
Standard III.5.6 HS Explain the effects of agriculture and urban development on selected ecosystems.

Strand V.1 Earth Science ~ Geosphere
Standard I.1 Describe and identify surface features using maps.
Standard I.3 Describe natural changes in the earth’s surface
Standard I.5 Explain how technology changes the earth’s surface

Strand V.2 Earth Science ~ Hydrosphere
Standard I.1MS Use maps of the earth to locate water in its various forms …
Standard I.2MS Describe how surface water in Michigan reaches the ocean and returns.
Standard I.4MS Describe origins of pollution in the hydrosphere.
Standard I.1 HS Identify and describe regional watersheds.
Standard I.2 HS Describe how human activities affect the quality of water in the hydrosphere.
CHILDREN'S LITERATURE

As a young child explores the places and persons in his community, he discovers the answer to “what is community?”

**Where Once There Was a Wood** by Denise Fleming. 1996.
Examines the many forms of wildlife that can be displaced if their environment is destroyed by development and discusses how communities and schools can provide spaces for them to live. Pheasants, red fox, raccoons, great horned owl--these and other animals are brought to life in this exquisite book by Caldecott Honor winner, Denise Fleming. Her lyrical text and rich, exuberant art combine in an ecological tribute to our disappearing wildlife.

**The Empty Lot** by Dale H. Fife. 1996.
A man who is about to sell an empty lot to developers discovers that the plot of land is far from empty. The sights and sounds of nature's tenants convince the man to save the lot from the bulldozers. The man finds that the area already has plenty of tenants: a tree is an apartment house for birds; frogs and insects share the stream; children have built a tree house. The man changes his sign to: “Occupied Lot. P.S. Every square inch in use.”

**Flute’s Journey** by Lynne Cherry. 1997.
When the snow flies, thousands of birds migrate south to avoid the icy temperatures and shortage of food. Cherry traces one wood thrush’s flight from Maryland to Costa Rica, and back again. The trip is filled with risks, both natural and manmade. Flute must battle natural foes like cats and harsh weather along both legs of his journey. Forests where he once took refuge have become suburban sprawls, and lawn chemicals taint insects Flute eats, making him ill. Cherry documents nature as it is today, without idealizing or fictionalizing the struggles of bird life.

Home is more than just the place we return to after being away. Home is something that becomes part of us as we live in it. For artists and writers, home can become part of how we see the world and how we shape our words or our artwork. For everyone, the place we call home becomes a part of our lives. This book contains poetic and narrative views of scenes from across the continent by such well-known writers as Robert Frost, John Muir, and Washington Irving as well as modern writers such as Pat Mora, Jane Yolen, and Joseph Bruchac.

**Peter's Place** 1996.
An incident that's achingly familiar today is personalized in a quietly told disaster story. Peter's place is a windswept ocean beach, full of life, until an oil tanker is wrecked on the rocks, and slick blackness spills everywhere. Foreman's watercolors capture the wide view of the seacoast and the fragility of its wildlife. Slowly Peter helps a team clean the sticky slime away and helps save a special eider duck. The healing nature of time passing is credited, and the book ends with partial restoration of a safe habitat. The story is told in a clear unemotional tone, the effect of which underlines the sorrow. No blame is placed; no moralizing is apparent, but the message is clear nonetheless.

**River** by Debby Atwell. 1999.
With direct language and colorful paintings, Debby Atwell relates the changes that occur through the centuries along a riverbank, from the arrival of the first humans to the coming of the first settlers, from the industrial revolution to the present day. Over time, development occurs along its banks and the river
gradually becomes depleted as more and more people use its resources to build cities, transport goods, and handle sewage. When overuse and carelessness finally take their toll, the river's natural beauty and resources are compromised. Travel downstream through time as Atwell's evocative text and narrative paintings show how the river changes.

Long before English settlers came to New England, a tribe of Algonquin Indians discovered a sparkling, clear river they called Nash-a-way. By the 20th century, waste being dumped into the river (now called Nashua) had all but killed it, until one woman and her supporters fought to to clean up the river and restore its wildlife. An ecological fable encompassing 500 years of American history.

**Letting Swift River Go** by Jane Yolen. 1995.
The historic transformation of the Swift River valley and the creation of the Quabbin Reservoir told through the eyes of Sally Jane, who learns about reconciling necessary change with the enduring value of what is lost. Yolen's poetic narration, in the voice of a woman who was six years old when her family learned they would have to give up their home, recalls the tranquility of a rural community where children fished in the river and picnicked in the graveyard. Then, "it was voted in Boston to drown our towns that the people in the city might drink." Graves are moved, trees cut, homes bulldozed, and the river dammed to cover the little towns and create a new, quite beautiful landscape. In the last scenes, the narrator and her father revisit the scene in a rowboat, pointing out underwater landmarks and finally, looking "down into the darkening deep," letting go.

Chronicles the events and changes in a young boy's life and in his environment, from babyhood to grownup, through wordless scenes observed from the window of his bedroom.

**The Land of Gray Wolf** by Thomas Locker. 1996.
A young boy, Running Deer, and his small Native American tribe, struggle to preserve their land while holding onto their traditional way of life in a turbulent modern world.

**From Dawn to Dusk** by Natalie Kinsey-Warnock. 2002.
Chopping wood in the fall, hauling sap in buckets in the spring, and weeding and hoeing in the summer--that is life on a farm in the North. It is also seven months of sloppy, impossible mud and snow season, and annoying bugs all summer-long. Why would anyone miss this place? A love of life and a love of place shine through in the rich prose, illustrated with evocative woodcuts. At the story's end, readers from cities, towns, and country will ask themselves, "What would we miss most about our home?"

As time passes, all living things change. They move, grow, and change appearance. Some changes are easy to see, and others you really have to look for. Each special place in this book, from all over the world, is shown twice: before, and then after time has passed. Readers are encouraged to look closely at the first picture, then turn to the second picture and figure out how things have changed. At the end of the book, the author describes each of the book's paintings, calling them nature timescapes. Two additional questions may be asked: 'How do humans affect the rate and types of changes to nature timescapes? 'Do human communities change, as well?'

When baby Tracy is first brought to her new home, the view of the urban neighborhood through her window is not a pleasant one. Billboards and graffiti are everywhere, garbage is strewn across the streets, and only a few meager plants are fighting their way through the cracks in the cement. Bit by bit, as Tracy grows, the area is slowly reclaimed by its residents, so that the final view through the window is clean, lush, and green, with birds nesting peacefully in new trees and vistas that reveal glimpses of a blue river. Readers can note not
just the physical changes, but also the people in the community actively engaged in affecting those changes and producing a true home. Baker uses natural materials to create detailed collages that tell a story in which words are superfluous.

**If the World Were a Village: A Book About the World's People** by David J. Smith. 2002. More than six billion people inhabit the Earth. Smith compresses this impressively large number down to a more understandable figure, 100 persons, and in nine spreads offers data on such topics as nationalities, languages, ages, religions, and education as represented in a condensed global village.

**JOURNALS AND MAGAZINES**

**Green Teacher** quarterly journal for educators to enhance environmental and global education across the curriculum. Contains ideas and activities for enhancing one’s understanding and relationship with their environment and community.  [http://www.greenteacher.com](http://www.greenteacher.com)

**Great Lakes Bulletin** – publication of the Michigan Land Use Institute [www.mlui.org](http://www.mlui.org)

**CURRICULA**


**Creative Teaching With Historic Places** published by the National Park Service in Cultural Resource Management. Volume 23, No. 8, 2000. This issue can be accessed electronically through the Cultural Resource Management homepage at [http://www.cr.nps.gov/crm](http://www.cr.nps.gov/crm) Contains collection of articles that includes tips on interpretive planning, showcases examples of ways to tell the stories of places using case studies that describe effective public education initiatives at a variety of sites.


**Keeping a Nature Journal** by Clare Walker Leslie and Charles E. Roth. This book describes nature journaling—the regular recording of observations, perceptions, and feelings about the natural world around you, and how to do it. Nature journaling provides a vehicle for building one’s sense of place, for identifying and recording what is of personal interest and importance in one’s community and surroundings. Nature journaling stimulates more careful observations, through drawings and short descriptions, and records one’s responses to, and reflections about, both the built and natural worlds.


**This Land Is Your Land** by MSU Extension's United Growth for Kent County project (2002). [www.msue.msu.edu/kent/yearland](http://www.msue.msu.edu/kent/yearland) A free, activity-based youth curriculum on land use issues from the internet. The curriculum was designed to enable young people to contribute solutions to current land use issues, as well as, participate in making sound decisions now and in the future.

**Viewfinders (Gr.2-6)** 1996. The Dunn Foundation, Warwick, Rhode Island ([www.dunnfoundation.org](http://www.dunnfoundation.org)) The eight activities in ViewFinders increase awareness of the visual environment through a hands-on approach to learning. The activities can be used either as a complete unit or as supplementary lessons. Teacher background materials, extension activities, a guide to additional resources and a student reading list are included.
**Viewfinders Too: Exploring Community Appearance** (Gr. 6-8) 2002. The Dunn Foundation, Warwick, Rhode Island (www.dunnfoundation.org) Provides lessons for students to explore their visual landscape and become active stewards of their community’s visual environment. Students are challenged to look at their communities critically and creatively develop their vision of the future.


**VIDEOS**

**Back to the Future—Designs for Walkable Neighborhoods.** Citizens for a Better Environment. 152 W. Wisconsin Ave., Suite 510, Milwaukee, WI 53203. Tel: (414) 271-7280 (19 minutes). Illustrates what it's like trying to walk through a community where sprawl has taken place. Provides suggestions for how to design for diverse land uses while still maintaining a sense of community.

**Community of Choices.** 2002. Edward T. McMahon, The Conservation Fund, 1800 North Kent Street, Suite 1120 Arlington, VA 22209 (30 minutes) Tel : 703-525-6300 www.conservationfund.org Illustrates how planning is the key to protecting and enhancing the natural, cultural, and historic characteristics of a community. Failing to plan, is planning to fail. However, protecting and enhancing communities’ unique characteristics will make them more attractive and promote commerce.

**Looking at Change Before It Occurs.** Produced by Maguire & Reeder. Available from Design Access, 401 F St. NW, Washington, D.C. 20001. (17:20 minutes) Illustrates how planners can work with communities to develop visual displays of the consequences of choosing or not choosing various planning options.

**Reference Books**

Alvord, Katie. 2000. *Divorce Your Car: Ending the Love Affair with the Automobile.* Traces the history of America’s dependency on the automobile and its impacts. Examines substitutes for driving, such as walking, bicycling, carpooling, public transit, and alternative fuels.

Howe, Jim, Ed McMahon and Luther Propst. 1997. *Balancing Nature and Commerce in Gateway Communities.* Island Press, Washington D.C. Emphasizes why and how to manage change in places where people really want to visit or live, while preserving community character and healthy natural systems, and promoting a vibrant local economy.


- All Development is Not Created Equal  http://www.plannersweb.com/articles/look32.html

Roberts, Elizabeth and Elias Amidon, Editors. 1991. *Earth Prayers* In forest clearings, beneath star-filled skies, in cathedrals, and before the hearth... women and men have always given voice to the impulse to celebrate the world that surrounds and sustains them. From Walt Whitman, Thich Nhat Hanh, and Black Elk, to Margaret Atwood, the varied voices offer songs and prayers for land, sea, and air; graces for food; invocations, and poems.
Websites

America's Most Livable Communities  http://www.mostlivable.org/
American Planning Association  www.planning.org
Center for Livable Communities  www.lgc.org
Community Transformations:  
  http://www.sierraclub.org/sprawl/community/transformations/index.asp
  http://www.jointventure.org/resources/photosims/sim_index.html
The Dunn Foundation  www.dunnfoundation.org
Environmental Protection Agency  http://www.epa.gov/smartgrowth/
Find Your Spot  www.findyourspot.com  (Online quiz to find the best places to live for you!)
Growing Smart in Minnesota  http://www.mnplan.state.mn.us/  (search “Growing Smart in Minnesota”)
Measuring Sprawl and Its Impact  http://www.smartgrowthamerica.com/
Michigan Land Use Institute  www.mlui.org
Michigan Society of Planning  www.planningmi.org
Minnesota Smart Growth Network  http://www.1000fom.org/smart_growth_network.htm
National Trust for Historic Preservation  http://www.nationaltrust.org/
National MainStreet Program  www.mainst.org
Partners for Livable Communities  www.livable.com
Planners Web  http://www.plannersweb.com/
Scenic America  www.scenic.org
Stealth Network Technologies  http://www.stealthsite.com/  (Designs cell tower concealment sites)
Smart Growth Network  www.smartgrowth.org
Terra Server (aerial photos)  http://terraserver.homeadvisor.msn.com/default.asp
1000 Friends of Wisconsin  http://www.1kfriends.org/
Urban Land Institute  www.uli.org
Wisconsin Land Council  http://www.doa.state.wi.us/search.asp  (search “Wisconsin Land Council”)