“It’s Not Easy Being Green”
An elementary environmental science/social studies unit
inspired by Future Fuels from Forests Teacher Institute 2010

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**Target Grade/Subject:** 5th Grade Science

**Unit Overview**

The lessons and activities in this unit will be taught over the course of approximately two weeks, although some of the activities initiated during this time will be expanded upon throughout the school year.

The unit is designed to be taught within the first weeks of school as part of the introduction to our yearlong fifth grade theme of “Systems.” It includes activities to review and consolidate concepts that the students initially learned in fourth grade, but that are fundamental for understanding the more complex topics presented in the middle school science curriculum, which begins in fifth grade.

The activities follow the 5 E’s approach to teaching science: Engage, Explore, Explain, Elaborate, and Evaluate. In addition, each lesson contains both a content objective and a language objective. These objectives are written in student-friendly language aligned with the SIOP model. SIOP (Sheltered Instruction Operation Protocol) is a well-researched approach to facilitating learning among second language learners in a classroom. These approaches are included in this unit as part of a school and district wide reform effort toward improving the achievement of English Language Learners.

During the first week of the unit, students will be introduced to the idea of stewardship of the environment in terms of what can be done to improve the school’s local ecosystem. They will look at current and historical land use maps of Ottawa County. They will learn to identify and measure different types of trees, sample ground invertebrates with pitfall traps, and begin a yearlong bird-watching project. They will review key vocabulary and concepts from their fourth grade ecosystems unit, and they will explore a more natural ecosystem to compare it with the school’s property.

Throughout the second week, lessons will focus on the topic of energy usage and its relationship to the environment. Emphasis remains on stewardship at a practical level for fifth graders. They will review the types of energy learned in fourth grade and elaborate upon this understanding to begin to develop proposals for stewardship at our school. As a culminating activity, students will work in teams to propose and present a project aimed toward stewardship and environmental responsibility.
**Sources Consulted**  (* indicates resources presented or introduced at Future Fuels from Forests Institute, July 2010)


**Learning Objectives**

Throughout this unit, students will:

- Make detailed observations of three or more outdoor areas.
- Compare and contrast land that has been altered for human use with land that is in a less altered state.
- Demonstrate understanding of key ecosystem vocabulary through its application in a poster presentation.
- Describe the characteristics that scientists use to classify trees and birds.
- Identify various Michigan sources of energy and describe their benefits and challenges.
- Present a “Green” proposal for action that will address one or more of the following ecological concerns within the school community or environment:
  - Limiting CO₂ emissions
  - Improving the biodiversity of the area around the school.
  - Conserve energy
  - Increase carbon sequestration
  - Decrease resource consumption (reduce, reuse, or recycle)

**Michigan Science Standards**
S.IP.05.13 Use tools and equipment (spring scales, stop watches, meter sticks and tapes, models, hand lens) appropriate to scientific investigations.
S.IP.05.14 Use metric measurement devices in an investigation.

S.IA.05.12 Evaluate data, claims, and personal knowledge through collaborative science discourse.
S.IA.05.13 Communicate and defend findings of observations and investigations using evidence.
S.IA.05.15 Use multiple sources of information to evaluate strengths and weaknesses of claims, arguments, or data.

S.RS.05.11 Evaluate the strengths and weaknesses of claims, arguments, and data.
S.RS.05.12 Describe limitations in personal and scientific knowledge.
S.RS.05.13 Identify the need for evidence in making scientific decisions.
S.RS.05.15 Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.
S.RS.05.17 Describe the effect humans and other organisms have on the balance in the natural world.

L.EV.05.11 Explain how behavioral characteristics (adaptation, instinct, learning, habit) of animals help them to survive in their environment.
L.EV.05.12 Describe the physical characteristics (traits) of organisms that help them survive in their environment.
L.EV.05.14 Analyze the relationship of environmental change and catastrophic events (for example: volcanic eruption, floods, asteroid impacts, tsunami) to species extinction.
L.EV.05.21 Relate degree of similarity in anatomical features to the classification of contemporary organisms.

Michigan Social Studies Standards

Public Discourse, Decision Making, and Citizen Involvement (P3, P4)

P4.2 Citizen Involvement

Act constructively to further the public good.
5 – P4.2.1 Develop and implement an action plan and know how, when, and where to address or inform others about a public issue.
5 – P4.2.2 Participate in projects to help or inform others.

Michigan English Language Arts Standards

Informational Text

Students will...
S.DS.05.04 plan and deliver persuasive presentations or reports using an informational organizational pattern for a specific purpose (e.g., to persuade, describe, inform) that conveys and supports the point they want to make, while varying voice modulation, volume, and pace of speech to emphasize meaning.

Classroom/Field Activities
**Day One - Introduction**

**Content Objective:** (to be posted in room) Students will investigate the school’s land for evidence of human impact.

**Language Objective:** (to be posted) Students will write 3 suggestions for ways the school property could be made more “eco-friendly.”

**Materials:**

- “It’s Not Easy Being Green” YouTube clip
- Sample headlines/labels with “Green” language
- Chart Paper and markers, prelabeled:
  
  **Being Green**

<table>
<thead>
<tr>
<th>What we can do</th>
<th>How it can help</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scrap paper</td>
<td></td>
</tr>
<tr>
<td>Land Use Maps With Overlays (from Michigan State Remote Sensing Website) and Ottawa County GIS historical land use maps (from County)</td>
<td></td>
</tr>
<tr>
<td>Clipboards, School Land Use Study Worksheets, pencils</td>
<td></td>
</tr>
<tr>
<td>Index cards</td>
<td></td>
</tr>
<tr>
<td>Maps of school district</td>
<td></td>
</tr>
<tr>
<td>Write on board: Parking lot, Lakewood Boulevard, Beech Street, Bike path, Tennis Courts, Softball Diamond, Bus Lot, Glerum School, Gym</td>
<td></td>
</tr>
</tbody>
</table>

**ENGAGE**

**Activity One – It’s Not Easy Bein’ Green:** Watch “It’s Not Easy Bein’ Green.” Obviously, Kermit the Frog is talking about his skin color, but what do people mean when they say that something is green? (Share headlines/labels, and ask students to be looking for them.)

Today we’re going to start a mini-unit on Environmental Science. We’ll be exploring our school property, the way we use energy, learning about some of the trees and birds in our area, and coming up with some proposals to make Glerum a “Greener” school. If we come up with some good ideas we can even present them to other classes, the administration, the school board, the
PTO, or the township. Hopefully, we’ll start at least one or two projects that we can complete this year.

**Activity Two – T-Chart:** We won’t decide on our proposals until later next week, but let’s start coming up with some ideas now. (Discuss guidelines for brainstorming.) As a Table Team, see how many things you can think of that we could do to help the environment at school or in our homes. (Refer to the chart.) List them on scrap paper. For each idea, you have to have a WHAT and a HOW – what we could do and how it will help…..

For example (put on large chart paper),

<table>
<thead>
<tr>
<th>What we can do</th>
<th>How it can help</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recycle papers</td>
<td>Less trees have to be cut down, less energy and chemicals will be used to make paper, less factory emissions</td>
</tr>
</tbody>
</table>

Give tables a few minutes to brainstorm ideas. Regroup as a whole class and start listing ideas on the chart paper. Hopefully, this list will keep growing.

**EXPLORE**

**Activity Three – Land Use Maps:** What do you think it was like right where we are standing in 1010 – 1000 years ago? What did it look like? How do you know? How do you think that this area has changed just in your lifetime?

Project Land Use Map of state. (Through the website so you can add the layers.) Spend some time discussing the categories for land use: barren, agriculture, urban, open field, wetland. Etc.

Think, Pair, Share Questions: What’s the difference between open field and barren? Where are most of the forests in the state? What would you find in the areas with a lot of red? How do you think that the area by your house would be colored? The school property? How do you think a map from 100 years ago would look?

Add layers to the map and continue discussion.

**Activity Four – School Property Walk:**

Display Google Map Satellite Image of School Property. Spend some time making sure students are able to understand the map.
• Pass out the School Observation Worksheets. Label: Parking lot, Lakewood Boulevard, Beech Street, Bike path, Tennis Courts, Softball Diamond, Bus Lot, Glerum School, Gym (refer to list on board)
• Have students work with their partners for this unit. They should line up with their worksheets, clipboards, and pencils next to a partner.
• (Be sure to tell someone that you’ll be outside.)
• Take a class walk around the building and grounds.
• As you walk, look for:
  • Evidence of human impact – positive or negative
  • Evidence of animal life
  • Variety of plants
  • Evidence of erosion, pollution, water flow
  • Land usage
• Students should make notes on their paper.
• After you’ve toured the grounds with the whole class, allow them to go back to selected areas with their partners. They need to write ideas for improving the school’s land, ecologically. (In other words, not by adding another piece of playground equipment.) They should write their thoughts on their maps.

**Activity Five – Ticket Out**

After students return to the classroom and put away their materials, should spend some time sharing ideas and adding them to the class chart.

Pass out the Home Sheet. (A street map of the school community.) For homework tonight, locate where you live on the map. Mark it and label it. Take a walk around your area, and write down 3 observations of human impact and 1 idea for improving the area.

Pass out index cards. As a culminating activity for today, write down 3 ideas that you would be interested in working on that might help the environment in our community. This is not a final commitment, just an opportunity for me to begin seeing what you might be interested in doing.

**Days Two and Three – Focus on Trees**

**Content Objective:** (to be posted in room) Students will identify common trees, measure their diameters, and estimate their height.
**Language Objective:** (to be posted) Each student will write one line in a group tree poem.

**Materials:**

- Vocabulary words on cards – enough for each group of 3 students, include 3-4 blank cards per group
- Rings, hole punchers
- Larger copies of words for word wall
- Pre-printed science vocabulary cards – (see template)
- Example of words put into groups on board.
- List/pictures of trees found on school property (need to make ahead of time)
- Tree identification books
- Tree identification/observation sheets
- Meter sticks, tree height measuring tools (see handout), DBH tapes, if available
- “The Tree that Time Built” Book and CD
- Sentence strips

**EXPLAIN**

**(Day Two)**

**Activity One – Vocabulary Sort/Review**

Yesterday we talked about Ecology and how it is important to try to improve the area in which we live. Today, we’re going to learn some information about the trees that live on our school property and practice some of the ways that scientists measure trees. But first, we’re going to review some of the science words that you learned last year and start thinking about some of the new words that are related to this unit.

Divide class into groups of three. Each group should get an envelope with cards in it and a sheet of scrap paper for recording their groups.

**Directions:** You and your team will get an envelope with some words on cards. Some of the words are words that you learned last year and some of them are new. For today, your job is to put the words in groups that make sense to you. There are no correct or incorrect groups, but you need to give each group a title or label, and you need to be able to explain why you chose to put the words in the groups. You should have at least 4 groups and you have to have at least 3 words in each group.

Refer to the example on the board. Emphasize that items can go in more than one category. For example, scissors can belong in either group depending on how they are being used. You could say they are things in a kitchen if there is a pair of scissors in the drawer to use for opening food
packages or cutting chickens. You could say they are things to play with if you are using them to make a craft.

<table>
<thead>
<tr>
<th>Things in a kitchen</th>
<th>Mechanical things</th>
<th>Things you can play with</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plates</td>
<td>Bikes</td>
<td>Tops</td>
</tr>
<tr>
<td>Refrigerator</td>
<td>Coffee Maker</td>
<td>Pots and pans</td>
</tr>
<tr>
<td>Apples</td>
<td>Car</td>
<td>Marbles</td>
</tr>
<tr>
<td>Sink</td>
<td>Faucet</td>
<td>Water</td>
</tr>
</tbody>
</table>

Allow the groups enough time to talk about and sort their cards. Once they’ve agreed on categories, they should write the categories and words on the scrap paper. (Since this is the beginning of the year, it will also be a good opportunity for helping the students learn to work in groups, including compromising and make sure that everyone has an opportunity to participate.)

After the groups have had enough time, gather as a whole group for them to share and explain their groups. Spend some time making inferences about the new words. Be sure that they have a correct beginning understanding of these words.

Word cards should be returned to their envelopes for further practice and discussion.

**Activity Two: Tree Identification**

Have the groups pull out the cards for biodiversity, producer, and carbon storage.

Explain that during the next activity they will be learning to identify some of the different types of trees found on school property. This activity is related to all three of these vocabulary words. Spend a few minutes reviewing what producers are and why they are important. Guide the class in reviewing the term biodiversity by using its word parts. Ask them for reasons that they think it’s important to have biodiversity, even in trees. (Use think-pair-share.) Finally, explain to them that one of the main reasons that scientists are concerned about global warming is that we are putting more carbon into the air. (Hopefully, they can link this to their study of electricity and their visit to the power plant last year.) The earth has a certain amount of carbon that stays pretty much the same. The thing that changes is the form that the carbon has. One way to help lessen global warming is to plant trees that have a lot of carbon in them. This way, that carbon is not getting into the atmosphere and adding to global warming.

Working with the same groups of three, we’re going to go outside and see if we can identify 8 different types of trees on our school property. (Review rules and expectations)

Pass out tree identification papers and tables for recording.

For today, you need to try to locate one of each of these trees, write down where you found it, and record some observations. (Explain what an observation is.)
After returning to the classroom, share observations.

**Day Three**

**Activity Three: Review Big Ideas and Vocabulary**

Review the vocabulary words from yesterday, using the words on the word wall. Ask the students to explain why biodiversity in trees is important. List some of their reasons.

Pass out two science vocabulary cards and one ring per student. Since this is the beginning of the year, take time to explain and model your expectations for how to fill these out.

Together, complete a vocabulary card for Carbon Storage. (On the blank side, write the word in print and draw a picture that will help you remember the word. Be sure to use color with the picture because color is an aid in recall. On the printed side, write a kid-friendly definition, three bulleted examples and three bulleted non-examples, and a sentence using the term in a way that’s not simply restating the definition.)

Example definition: When carbon is stored in a way that keeps it from entering the atmosphere

Example examples: trees, crops, coal, wood in houses or furniture, paper
Non-examples: burning coal ore wood, exhaust from cars or power plants

Example sentence: Carbon storage can help fight global warming.

**Activity Four: Measuring Trees**

What do we use trees for? Since trees are an important resource for us and since they also help the environment, one of the things that scientists and foresters do is measure trees. Why might they do this?

Today we’re going to practice 2 of the ways that scientists measure trees. You’ll work in the same groups as you did yesterday, and each group will measure the DBH (diameter breast height) and estimated height of two different trees.

Have the students return to their groups from the day before and pass back their papers. Assign two trees to each group. Go outside and demonstrate how to complete both measurements. DBH should be taken at about 4 feet. Since using meter sticks, they should use 122 centimeters to calculate the breast height.
(Refer to handout for directions on making height tool.)

After returning to the class, spend some time in discussion.

**EXTEND**

**Activity Five: Tree Poem**

Now that we’ve spent some time observing trees from a scientific point of view, let’s think about trees from a more artistic point of view. First let’s list some words and phrases that describe trees and what they mean to us.

Brainstorm a list of tree-related words and phrases.

Play several poems from “The Tree That Time Built” cd. Suggestions: “Think Like a Tree,” “For the Future,” “Old Elm Speaks.”

Have each student write a few possible poem lines (on scrap paper, of course). They may share their work with someone they trust for help or feedback.

When everyone has had a chance to finalize one line that they like, they should write them on sentence strips. As a class arrange the sentence strips into a pleasing poem, which can then be copied onto chart paper and decorated by volunteers.

**Day Four: Assess Tree Big Ideas and Set up Bird Station**

**Content Objective:** (to be posted in room) Students will establish a station for caring for birds and set up pitfalls to estimate invertebrate populations in different parts of the school yard.

**Language Objective:** (to be posted) Each student will work with a partner to answer review questions related to the activities completed over the past three days.

**Materials:**

- Copies of Quick Check
- Bird Identification Photos and Chart
• Bird feeders, seed, birdbath
• Additional Vocabulary words – To put on word wall: Characteristics, Identify
• Pitfall trap materials (see handout)
• Stakes, signs, and rope for roping off pitfall areas
• (Advanced preparation – send an email to staff so they can share this investigation with their students and let them know that they need to stay out of the roped-off areas.)

**Activity One: Quick Check**

Using the Quick Check worksheet as a mini-assessment, have students work in partners.

1. Choose who is going to go first. Without talking, the first partner should answer the first question on the page.
2. Hand the paper to your partner so that your partner can answer question 2.
3. Continue trading until all 5 questions are answered.
4. Each partner should now take turns reading their partners answers and adding to them or putting a ? if they disagree.
5. Give each partnership 5 minutes to discuss or change any answers for the final time.

After the partners are finished, spend some time discussing the more complex questions as a group.

**Activity Two: Categories**

Play a game of Categories with the class, using birds as the Category. The object is to come up with as many different birds as we can. The students can work in groups. Each group names a bird (one at a time) and the teacher writes them down. Groups can’t name animals that aren’t birds and they can’t name a bird that is already on the list. The play continues until there is one group left.

**EXPLORE**

**Activity Three: Bird Station Set-up and Identification**

Share bird identification paper and bird watching checklist. Explain to the class that you thought it would be fun to set up a station outside the window for watching birds.
Show them the different types of birdfeeders and the birdbath. Explain that different birds will come to different feeders.

Set up a class job chart with partners taking turns maintaining the station and adding new bird checklist sheets if necessary.

**Activity Four: Setting Up Pitfall Traps**

Turn to your share partner and make sure that you know what biodiversity means. Why is biodiversity important? Discuss with your table groups one thing that might happen if the only birds that we had were robins, which eat insects and worms.

Just as a healthy ecosystem has a diversity of plants and birds, it also has a variety of different invertebrates. For the rest of the class, we’ll be setting up pitfall traps to try to gather information about the types of invertebrates that live in different parts of our school yard.

Divide the class into groups of 4. Before going outside, each group should decide on a different place to set their trap. After setting up the traps, they will need to rope off their area and place a sign there.

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**Days Five and Six: Nature Hike and Follow-up**

**Content Objective:** (to be posted in room) Students will compare and contrast the school property with the property at a local nature preserve.

**Language Objective:** (to be posted) Each student will write a compare/contrast paragraph including 3 ways the two systems are similar and three ways they are different.

**Materials**

- Journals and pencils for trip
- Black construction paper and scissors for “Seed Picture Viewers”
- (Advanced preparation – permission slips and chaperones)
- If possible, list of common flora and fauna that may be observed at nature center
- Large drawing paper and colored pencils
- Nature sounds cd.
EXTEND

**Activity One: Field Trip Preparation**

1. Make “Seed Story Viewers.” Seed stories are a term that the students know from language arts. Seed stories are small stories that give details about a small part of a larger story. They are usually more interesting and always more detailed. For example, instead of writing about a whole day at an amusement park, a student may write a seed story about one incident at the amusement park (going up the first hill on the roller coaster, the sticky sweetness of cotton candy, etc.)

   Building upon this concept, today the children will be making both Watermelon and Seed Observation sketches. The Watermelon Sketch will be the large view sketch that they make from one spot on the nature trail. To make their Seed Sketch, they’ll use a viewer to zero in on one part of the vista and make a detailed drawing.

   The viewers are simply black construction paper with a 1 cm square cut out of the center.

2. Prepare science journals. Enter the activity in the table of contents. Label one page Watermelon Sketch and the other one Seed Sketch. Label a third page with these columns: Evidence of human impact, Similar to school area, Different from School area.

3. Make sure you have at least two sharpened pencils.

4. Assign partners.

5. Give each partnership a copy of the Plants and animals you might see checklist.

**Activity Two: The Trip**

After you arrive at the center, spend some time in a group hike, where you can point out things you see to the children. A good technique for this is to share the observation with the partners at the beginning of the line. It is then their job to relate the information to the rest of the class and then join the end of the line.

As you hike, encourage the children to make notes in their notebooks under the 3 columns.
Depending on the nature center, have the children (with their partners) choose a spot to sit and sketch both their Seed and Watermelon stories. Remind them that they will have to transfer their sketches onto larger art paper back at school, so they might want to make notes to help them remember details. Also remind them that scientific observations should reflect what they actually see. Trees are not round green balls on top of brown sticks, the sky isn’t one shade of blue, and the sun isn’t even something they should look at, let alone draw it like a child’s star.

**Activity Three: After the trip**

If possible, allot time for the children to begin on their “Good” sketches soon after returning to school. This might be a good time to play nature music in the background.

Decide on a deadline for when the sketches should be finished. Determine criteria for a good sketches – colored pencils can allow you to color and shade more naturally than crayons or markers, the Seed sketch should have a lot of detail, the whole page should be filled. Post the criteria. It would also be a good idea to send a copy home.

**Day Six: Check Pitfall Traps/ Follow-Up of Hike**

**Activity One: Check Pitfall Traps**

- Go outside to check your traps.
- Allow time for sharing of critters and information.
- Any preliminary conclusions about what types of areas seem to have the most invertebrates? Any things that need to be changed at the traps?

**Activity Two: Check Bird Sightings**

Spend some time sharing observations about the birds.

**Activity Three: Follow up of Field Trip Observations**

1. As a table team, share the evidence you gathered that shows human impact, and your lists of similarities and differences.
2. Point out the chart paper on the walls. (They should be labeled with the same three headings.) Since there may be more groups than categories, you can have several papers for each category.
3. Groups should go to one of the papers and list their ideas in marker.
4. After you tell them to move, they should move to a different category and list their ideas (in a color of marker that is different from the one already on the chart). They should not repeat ideas that are already on the chart.
5. After one more rotation, every group should have added their ideas to each category.
6. Have students return to their seats and initiate a discussion about the evidence of human impact. Decide whether the impacts are good for the natural ecosystem, harmful to the system, helpful for people, harmful for people. Decide on symbols and a key to mark the chart. (For example, they might write + eco for impacts that are mostly helpful to an ecosystem.) Use these symbols to code the charts.

EVALUATE

Activity 4: Compare/Contrast Essay Writing

1. Review the rubric for guidelines for compare/contrast writing. Emphasize that when you are writing about differences, you have to tell about both areas.
2. Model the writing of a compare/contrast essay on chart paper with the whole class.
3. Use the rubric as a group to evaluate the sample piece and make improvements.
4. Remind students of the lists on the walls that they can use to help them. They should tell about 3 or 4 similarities and differences. (You may need to adapt for children with special needs or who are ELL students.)
5. Assign the (rough draft) essay and allow time for them to get started.
6. Unfinished essays should be completed for homework.

Days 7-9 Revising Essays/Developing Action Plans

Content Objective: (to be posted in room) Students will produce essays that compare and contrast the school property with the property at a local nature preserve.

Students will participate as part of a team to develop an Ecology action plan to improve one aspect of the schoolyard or neighborhood environment.

Language Objective: (to be posted) Each student will write a compare/contrast paragraph including 3 ways the two systems are similar and three ways they are different.

Each student will take part in orally persuading others to support their action plan.
Materials:

- Chart paper, markers, internet access
- Copies of class ideas on paper for groups.
- Action Plan Worksheets
- Computer time
- Poster board

Activity One: Revising Essays with Partners

Review the guidelines for revising that the children use in Language Arts. Using the essay the teacher wrote on chart paper, practice revising as a group.

Allow the students time to confer with their writing partners. Decide upon a due date for the final product. If possible, they can be typed in the computer lab.

Activity Two: Brainstorming and Evaluating Action Plan Topics

Write the following questions on the board: Is it reasonable for fifth graders to tackle? Can it be done this year? How will it help?

Refer to the list of ideas for improving the school environment. Hopefully, there will have been new ideas added throughout the past days. Are there any we can add?

Spend a few moments discussing the 3 questions. These are going to be our first filters for deciding which plans we might develop further. (Link this to real scientists or activists.)

As table teams, read through the list and use the three questions to decide which ones are possible for us to attempt.

Regather as a whole class and share your opinions. Caution students that they will need to justify their answers with a reason, not a feeling.

Once you’ve narrowed the list, decide on how to divide the class into groups so that different areas are covered.

Activity Two: Group Work

Once students have been put into groups and given a topic, they will need to spend some time developing their plans.
They should use the Action Plan Worksheet as a guideline to structure their work.

As a culminating activity, each group will need to present their proposal to the whole class. The class can vote on one or two projects to actually complete.
Quick Check

1. What are two characteristics you can use to identify different trees?

2. List two ways that a tree can help other living creatures in the environment.

3. Write down three ways that people use trees as resources.

4. Imagine that all of the oak trees in Michigan became extinct. How might that affect our forests and cities?

5. Trees have a lot of carbon in them. How does this help our environment?
Action Plan Worksheet

**Goal:** What do you hope to accomplish?

**Timeline:** How long do you think it will take to get the project completed? Make a list by weeks or months.

**Resources:** What will you need?

**Permission:** Will you need to get permission to complete any part of your project?

**Support:** Where can you get support? Will you need extra people? Will you need money?

**Research:** What proof do you have that your plan will have a good impact on the school’s environment? Find at least three sources. You can use books, the internet, magazines, or local experts.

**Poster:** Make a persuasive poster to support your project. Be sure to follow good design guidelines.
Vocabulary List for Word Sort

(These words should be review from fourth grade.)

- Habitat
- Needs
- Producer
- Consumer
- Decomposer
- Energy
- Animal
- Plant
- Fungus
- Environment
- Food Web
- Food Chain
- Recycle
- Reduce
- Reuse
- Compost
- Resource
- Vertebrates
- Invertebrates

(New words related to this unit.)

- Biodiversity
- Ecosystem
- Sustainability
- Ecology
- “Being Green”
- Carbon Storage
Template for Science Vocabulary Cards

(To be printed on 4x6 index cards. We keep these on rings throughout the school year, and store them in over-the-door shoe holder pockets.)

<table>
<thead>
<tr>
<th>Definition:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Examples</td>
</tr>
</tbody>
</table>

Sentence: