Unit Overview:
The following is an Environmental unit for kindergarten that fosters an appreciation for “mother” Earth. It is my hope to plant the “seeds” that the environment is special and that we need to observe it and take care of it.

Sources Consulted/References

Professional Sources:
Project Learning Tree: Pre K-8 Environmental Education Activity Guide put out by the American Forest Foundation (email information@plt.org or go to the web site www.plt.org)
Trees Of Michigan: Field Guide by Stan Tekiela
Units of Study for Writing K-2 by Lucy Calkins
Birds of Michigan: Field Guide by Stan Tekiela
Birds of Michigan: Audio CDs by Stan Tekiela
*Using information gathered from the tree identification portion of the Forestry class

Children’s Book Titles Used in Lessons or That Can be Used for Read Alouds:

Backyard Bird Watching For Kids: How to Attract, Feed, and Provide Homes for Birds by George H. Harrison
The Earth And I by Frank Asch
The Earth Book by Todd Parr
Earth Day- Hooray! by Stuart Murphy
Fall Leaf Project by Margaret McNamara
From Tree to Paper by Sundance
How Green Are You? by Penny Dann
How Paper is Made by Neil Curtis and Peter Greenland
Just a Dream by Chris Van Allsburg
A Log’s Life by Wendy Pfeffer
Miss Rumphius by Barbara Cooney
We’re Going on a Bear Hunt by Michael Rosen and Helen Oxenbury
Why Should I Recycle? By Jen Green
Teaching and Learning Objectives

Learning Experience Number One:
N.ME.00.01 Count objects in sets up to 30. (Learning experience #4 too)

N.ME.00.02 Use 1-to-1 correspondence to compare and order sets of objects to 30 using such phrases as “same number”, “more than”, or “less than”, use counting and matching. (Learning experience # 3 and #4 too)

N.ME.00.05 Count orally to 100 by ones. Count to 30 by 2’s, 5’s and 10’s using grouped objects (learning experience # 3 and #4 too)

P.PM.01.11 Demonstrate the ability to sort objects to observable attributes such as color, shape, size, sinking or floating.

P.PM.02.12 Describe objects and substances according to their properties (color, size, shape, texture, hardness, liquid or solid, sinking or floating). (Learning experience #4 too)

Learning Experience Number Two:
Students will explore the genre of informational text and persuasion (sorry I don’t have the exact wording since my GLCKEs for writing are packed in one of my many boxes-- I have moved schools and can’t unpack yet since the cleaning crew is cleaning my new room)

Learning experiences #3 and #4 noted in ( ) within other learning experiences

Learning Experience Number Five:
E.ES.03.43 Describe ways humans are protecting, extending, and restoring resources (recycle, reuse, reduce, renewal). (Learning experience #3 too)

E.ES.03.44 Recognize that paper, metal, glass, and some plastics can be recycled. (Learning experience # 3 too)

** Materials will be listed within each lesson. You are welcome to do lessons in the order that you would like and spread each “Learning Experience” up over several days.

Learning Experience Number One: Leaf Collection

Materials: Fall Leaf Project by Margaret McNamara
Trees of Michigan by Stan Tekiela
Trees: The Visual Guide to More Than 500 Species of Trees From Around the World
By Allen J. Coombes
Neighborhood to collect leaves
Pen pals in another state or country
Paper leaves for pictograph
Easel pad to record generalizations

1. Read *Fall Leaf Project*. This is a story about first graders who collect leaves in the fall (they live where leaves change colors) and send them to another class that lives in a state where leaves do not change colors.

2. By following the book’s lead, each student will gather his or her two favorite leaves during a walk through the neighborhood.

3. Once back in the classroom, we will sort the leaves by different properties (size, kind, etc.) and count how many of each kind of leaf we have. We will come up with generalizations that compare the groups (more than, less than, etc.). During this time, we will talk about the different kinds of leaves that we find using the tree identification books and my knowledge learned from the forestry class.

4. We have pen pals in Alaska (for other teachers that want to do this, why not hop on the internet and find another teacher’s web site in another state and email that teacher to see if they are interested in doing this kind of activity) and will predict about what kind of leaves they might have in Alaska. Questions like Do they have leaves that change color too? Will they have the same kind of leaves? Will be asked. I will laminate the leaves so they don’t dry out and fall apart.

5. We will make a pictograph that shows the results of our leaf collection. We will again make generalizations (more than, less than, etc.) about our data (done earlier with actual leaves but without the graph made. This is a hard concept so the more practice the better). We will send our leaves to Alaska.

6. The Alaskan class will collect leaves too. They will look at how leaves in Michigan are alike and different and report back to us.

Some Extension Ideas:

*Survey trees in area (project learning tree activity 21 starting on page 97 idea has more ideas). Take another nature walk where we measure strings around the trunk, take bark rubbings, take pictures and record results.
* Students create patterns using the different kinds of leaves they found for example: oak, maple, aspen, oak maple, aspen

* While on our nature walk(s), look for leaves that are organized with alternative leaves and use them to skip count by 2’s.

* While on our nature walk(s), look for leaves that are compound and have five leaves per cluster. Use those to skip count by 5’s. Press them and laminate them so they won’t crumble.
* Play the Project Learning Tree game (activity 27 Every Tree for Itself starting on page 117) that teaches what trees need to survive (water, sunlight, and nutrients).


**Learning Experience Number Two: A Visit from a Forester & Reading/Writing**

**Opportunities Section**

1. Contact Joan Chadde (jchadde@mtu.edu) to help locate a forester that can come and visit your class. Before the visit, create questions with your students you want the forester to answer when they visit your class. Also take this time to talk about appropriate questions (like don’t ask how much money they make). You can also arrange for other forest related professionals time permitting.

2. As the forester talks about their job, fill in the answers to the students’ questions they had. Take pictures to put into book.

3. As a class write an informative book about what a forester is and does.

**Other Language Arts Ideas:**

* Collect some leaves. Make a book that identifies their names and observations about trees.

* Use Calkins idea about organizing a story by using a writer’s five fingers. As students touch each finger, they orally share their story. Each finger needs to move their story forward. The first two fingers are the beginning of the story (include noting the characters, setting, and problem). The middle finger shows that they should be half way through their story. They should have their problem introduced. The last two fingers should include how the problem was solved. Students get with a partner and use their hands to map out a story, touching each finger. This idea will be modified to connect it to trees. Instead of using five fingers, use a compound leaf that has five smaller leaves (laminated). Once the writer orally shares their story while pointing to each of the five leaves, then they can draw/write pictures on post it notes and post them onto the leaves. This will help them to organize and remember their story.

* Use the tree as a metaphor and talk about growing a story like a tree growing from seeds. Talk about writing, “seeds” or known as ideas. Make a class list of writing “seeds”. Students can use this list when they need writing ideas.

* As a class, write about a nature walk using all the senses. You can do a copy change (use organization but focus story of going on a nature walk) of *Going on a Bear Hunt*.
* Read *A Log’s life*. This book shows how an oak tree helps many animals. As the book is read, students can act it out. Next, make a flipbook that shows the life cycle of an oak tree (use page 342 from Project Learning Tree book as a reference). Then, as a class, write a congressman about why it is important to have forests in Michigan (supports Michigan GLCKE that asks kindergarteners to write using persuasion).
* Use an ABC book format to write about what we are leaning about. For example: the O page could be oak tree leaf.

* Make a visual dictionary of nature related words (each child comes up with a word and illustrates what it means). Words might include: worms, earthworm, tree, recycle, etc.

**Learning Experience Number Three: Recycling Project**

**Materials:**
* *Earth Day- Hooray!* By Stuart Murphy
* Markers and paper for banners and announcements
* Bags to collect and bundle cans

1. Read and discuss *Earth Day- Hooray!* By Stuart Murphy. This book has a class of students collecting pop cans so they can get money to buy flowers for Gilroy Park. The math focus for this book is place value.

2. Just like this book we would collect cans that we would cash in for an end goal that would be something to help our earth (ideas include: a composting bin, planting a tree or flowers, bird houses, birdfeeder, bird food, or something else earth friendly). We would brainstorm and then vote on what our end goal would be. We would figure out how much money we would need.

3. Next, make banners and write announcements to share with the school family why we are collecting cans that have a deposit.

4. Just like the students in the book, we would bundle pop cans in groups of 10 and 100 and collect them until we have achieved the amount we need to reach our goal.

5. Then we would buy our product, use it, and celebrate making a difference for the Earth.

**Extensions:**
* Read *Miss Rumphius* by Barbara Cooney and talk about how we can make the world more beautiful like Miss Rumphius did.
Learning Experience Number Four: Observing Birds

Materials:
Backyard Bird Watching For Kids: How to Attract, Feed, and Provide Homes for Birds
by George H. Harrison
Birds of Michigan: Field Guide by Stan Tekiela
Birds of Michigan: Audio CDs by Stan Tekiela
Birdfeeder (s)
Birdseed
Optional bird house(s)

1. This activity could be done at carpet time over several days. Start out by asking the question, what do you know about birds? What kind of birds lives by our school?
2. Look at Backyard Bird Watching For Kids: How to Attract, Feed, and Provide Homes for Birds by George H. Harrison as a class.
3. Each day listen to some Birds of Michigan: Audio CD and read the field guide to learn about some birds we might see or hear.
4. Once the class has some knowledge about birds, we will set up a bird feeding area outside our window. Each day at carpet time, we will take notes as scientists about birds (kind and quantity).
5. As data is collected we will look for patterns and discuss using more than and less than, etc.

Extensions:

* Here are some other inquiry questions that could be explored:
When do birds eat more? morning, after lunch or at the end of the day
Which birdseed is most popular? Seed A or Seed b
What happens when birdhouses are built?
How does weather effect how birds are eating?
How does the season effect which birds are eating?
Or any other questions students are interested in

*There are many ideas in the Hands-On Nature book. Here are some:
Bird Songs: Musical Message page 164
Bird song bingo page 167
Bird song puppet show (It has a script) page 169
Beaks, Feet and Feathers page 38
Fly away or Stay?: Where Do the Birds Go and Why? Page 141
For more children’s books see page 313 under beaks, feet and feathers
Learning Experience Number Five: Recycle and Making Paper

Materials:
Why Should I Recycle? By Jen Green
Scrap paper torn into 1"X1" pieces
A large bowl
A wooden frame 5"X7" or 8"X10" (one per group)
Staples
Plastic basin at least 2.5 gallons in capacity (one per group)
Cloth dishtowels
Water
Blender
Sponge
Strainer
Newspaper
Water
Liquid starch
8"X13" piece of window screening (one per group)
Adult(s) to help would be very helpful

- You will need to put the screen into the frames ahead of time-Take the wooden frame and tightly staple or tack nylon or wire screening to the frame

1. Read and discuss Why Should I Recycle? This book is about a teacher taking his students to a recycling center and talking about recycling for paper and plastic. Also the book shows what one child is going to do to help the Earth.

2. As a class collect paper that is used up on both sides. (Use Project Learning Tree lesson 51 starting on page 224 that explains in more detail how to make paper)

3. Take paper that would normally be recycled and tear into strips. Soak in water. Add strips and water to a blender. Blend on medium speed until it is a soupy pulp.

4. Pour pulp into basin with warm water and add a few ounces of liquid starch to help make the paper firm.

5. Get the frame/screen and gather pulp onto screen. Try to squeeze as much water off as you can.

6. Place on newspaper the pulp side down and let dry. This is your new paper (once it dries).
Extensions

* Read *Just A Dream* by Chris Van Allsburg and make a list about how we can help the Earth.

* Read *the Earth Book* by Todd Parr and list what we are going to do as a class to help Mother Earth.

* Read *the Earth and I* by Frank Asch and list all the ways this books tells us that mother Earth helps us.

* Learn/experiment with worms and see how they help in the composting process.

* Read *How Paper is Made or From Tree to Paper.*

Overall Unit Assessment
Developmentally many kindergarten students are not ready to do paper and pencil assessments. It is for that reason that most assessments will be based on observation from the teacher and product related.

Lesson Experience One: Leaf Collection Assessment:
Students will be able to collect two leaves.
Each student will be able to give a way to sort the leaves.
Each student with assistance will be able to give a generalization about the pictograph.

Lesson Experience Two: Forrester Visit
Each child will be able to give a question for the forester.
Each child will be able to illustrate something that they learned about what a forester does. This will go into a class book.

Lesson Experience Three: Recycling Cans project
Each child will be able to demonstrate that they place cans in groups of ten.
Ball Toss- students will toss a ball to a friend. When the ball comes to the student, they will have to share one thing they can do to help the earth.

Lesson Experience Four: Observing Birds
Each day at carpet time with assistance, students will be able to identify what kind of bird(s) they see.
Each child will make a page to go in a class book labeled everything we know about birds.

Lesson Experience Five: Making paper
Each student will make a piece of paper.
Students will help write a class book of how to make paper.