

## Let's Take Care of Our Earth

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### **Introduction and Objective**

We have a great responsibility to take care of where we live. We only have one Earth and we need to protect and preserve it not only for our own use, but for the generations that follow ours. Theodore Roosevelt made the claim that “To waste, to destroy our natural resources, to skin and exhaust the land instead of using it so as to increase its usefulness, will result in undermining in the days of our children the very prosperity which we ought by right to hand down to them amplified and developed.”<sup>1</sup> If we teach children at a young age how to take care of the Earth and protect the resources that it provides for us, they will grow up to be informed citizens who make informed decisions about the choices they have for making the most of the place where they live.

North Carolina essential standards for second grade students require them to “Give examples of ways in which people depend on the physical environment and natural resources to meet basic needs” and “explain how people positively and negatively affect the environment.”<sup>2</sup> It is my hope that the students exist in my classroom showing care and consideration for the environment; and they leave my classroom with the intention of positively affecting the Earth.

At the onset of every school year I observe my students' behaviors in the classroom. I have a list of “must-do” routines that I find I need to teach my students because they have no prior experience or they've forgotten a particular procedure over the summer. We only have to review how to correctly pass scissors or put covers on markers maybe once or twice throughout the school year. Very frequently throughout the first few months of school I'm required to remind my students of where to throw things away. We have two blue recycling bins strategically placed in our classroom. One is situated by the trash container so that students have to think about the choice they make when discarding something and the other is located by the writing center where students utilize paper and access new pieces. Students frequently throw trash in the recycling bin and recycling in the trash container. My goal is maintain an environmentally friendly classroom that supports initiatives of being “green.” I want my students to think about and act upon their role and responsibility in protecting the environment and the Earth they live on.

You're probably an environmentally conscientious person, or at least trying to be. I thought I was until I enrolled in the seminar called Environmental Science and Climate Change led by Cindy Hauser at Davidson College in Davidson, North Carolina. I grew up in a house that was concerned about recycling, and have continued to recycle as an adult,

but I am learning about the environment in new ways and making a lot of different choices as a result of what I'm learning. The Environmental Protection Agency advocates for citizens to "Reduce, Reuse, Recycle."<sup>3</sup> Even though I've been recycling for years, I have started to take action to reduce the amount of waste that I produce by reusing household items. I pack my lunch in containers that get put in the dishwasher instead of using plastic bags that are only good for one time use. I've significantly reduced the amount of paper products I use in my house. I've had the same paper towel roll for four months. I purchased cloth napkins to replace paper napkins. I also utilize 32 oz refillable water bottles instead of buying one-use plastic ones. Just by taking a few steps I have significantly reduced the amount of trash I dispose on a weekly basis. Another practical step that I took over the summer months was that I maintained a vegetable garden in my back yard. I ate salads almost all summer long with the lettuce, cucumbers, tomatoes and peppers that I grew. (It's the end of October and the tomatoes are still going strong). A step I need to start to take is to compost recyclable waste. I have a small yard, but I want to make the most of the space and begin to recycle the food waste, grinds, and cores.

I want to model these good habits for my students in the classroom as well as encourage them to begin to make good choices in their lives. And, I want to serve as a role model for my friends and other people I encounter in my life.

Alongside of learning about how to reduce, reuse, and recycle, I want my second graders to become problem solvers. Throughout our school curriculum they are engaged in tasks where they have to solve math problems or conduct scientific labs where they form a hypothesis and draw conclusions, but it's also important for them to participate in solving a real world problem where they can (hopefully) see the result of their hard work. A pressing problem at our school is our grounds. Our school is situated in North East Charlotte, North Carolina and the exterior landscaping is not well maintained. The ground around our building is covered in red clay that runs off everywhere each time it rains. The grass gets mowed infrequently. To say the least, the campus our school sits on is not aesthetically pleasing. While teaching my students how to take care of the Earth and environment, they arrive to school each day passing by unpleasant looking space. I want my students to problem solve and create a plan to design an aesthetically pleasing place to come to learn and to reduce the erosion on the ground around us.

Second grade students will examine a variety of media and text sources of how to take care of the earth and why it is important for them to do it. Right from the beginning of the school year, they will be taught to be conscientious citizens. From turning off the lights every time we leave the classroom, to recycling goods that can be recycled instead of throwing them in the garbage. My students will be practicing these things automatically in the school building and they will influence their peers to do the same.

Everything that I learn and do in seminar will be shared with my students. My students can be encouraged to bring recycled materials for their lunch like reusable

containers or a cloth napkin. Another problem solving area my students can identify is to observe the amount of waste they produce using the cafeteria and brainstorm solutions for how to reduce and eliminate waste. It would be great if students created a plan for how to do this from researching how to get reusable silverware and reusable napkins to show our care and concern for the environment. Our school currently uses plastic and paper. It would be great if they could dispose of food they do not eat in a separate container to be used for compost that will be applied to the dirt where we could build a garden. I would like to research the implication of what needs to be done to secure space in our school campus for students to create a vegetable garden. An Essential Standard for Science for second graders is for them to “Remember that organisms differ from or are similar to their parents based on the characteristics of the organism.”<sup>4</sup> Students can do this by looking at and recognizing seeds of various plants and vegetables, and comparing them to what they grow into. I envision this happening in the classroom space and then moving outside when it becomes the appropriate season. If we cannot secure a garden space in our school, I think it would be great for students to plant in their own pots and this will allow them to take home what they plant and grow and continue to be responsible for something living.

### **Background Information**

Why should we care about the environment?

According to the United States Environmental Protection Agency, there are many benefits of recycling including “expanding US manufacturing jobs and increasing US competitiveness, reducing landfill and incineration, preventing pollution, saving energy, decreasing emission of greenhouse gases, conserving natural resources, and sustaining the environment for future generations.”<sup>5</sup>

In the article, “The Future of Climate Change: How to Teach Young Children to Conserve,” Diane Cole argues for several points including holding children accountable for turning off lights when they leave a room and not wasting water. It is also important to teach them the cycle of food from planting seeds to composting scraps.<sup>6</sup> These steps provide young children with a foundation for how to conserve and preserve the Earth where they live. This teaches them from a young age to respect the environment and take care of it, not just for themselves, but for others. And if children develop good habits at a young age, they are more likely to maintain them for the rest of their lives, as well as serve as a model for others.

James Hansen, a scientist who currently heads the NASA Goddard Institute for Space Studies is also attributed to being an outspoken expert on environmental sciences and the Earth’s climate. He claims there is a connection between climate events such as “heat wave, widespread drought, and intense forest fires in 2012,” and global warming.<sup>7</sup>

Locally there are many reports and graphs that highlight the effects of changes in the environment. Second grade students study weather as one of their units in science. The Weather Underground website offers charts and data students can use as a visual to see changes in the past and predictions for the future. The following results come from a station located in Statesville, NC which is close to Charlotte, NC where my students live and come to school. The average temperature has increased 1.4 degrees Celsius in the past century 1900-2000 and is predicted to increase by 2100 somewhere between 1.8 degrees Celsius if there are low greenhouse gas emissions or up to 2.8 degrees Celsius if there are high greenhouse gas emissions. The visual available at the wunderground website shows the temperature history from 1900 to 2010 and then the projections to 2100. This is a great visual for students to see the patterns and rise in temperature. There is a graph that illustrates a trend in decreasing precipitation by 15.7cm per century and another graph that illustrates decreasing average snowfall by 10.6 cm per century.<sup>8</sup>

Continuing to look at local impacts of climate change, the U.S. EPA Southeast Climate Change Adaptation Planning Workshop that occurred in Atlanta, Georgia February 2-3, 2010 offers many ideas for students to learn to understand the impact of climate on the environment. Stratus Consulting created a report for the U.S. Environmental Protection Agency compiling and summarizing all of the work of the participants in the workshop. Some of the things reported include that the southeastern U.S. may be most impacted by climate change because of its long and low-lying coastline which is exposed to a rise in sea level as well as hurricanes. It is already a warm region and will not benefit from heat increases. People and animals will be more susceptible to disease. The region has rich biodiversity. The southeast region includes 60 million people and 400,000 farms. Findings reported from this workshop include:

- The average temperature has risen 2 degrees Fahrenheit since 1970.
- There has been an increase of autumn precipitation as well as increase in drought.
- It is predicted there will be more intense Atlantic hurricanes.
- Available water will decrease because of a rise in temperatures as well as longer intervals between rainfalls. This will impact aquatic habitats, species and biodiversity.
- Increase in temperature as well as drought will impact ecosystems and where plants and animals grow, and how they survive and thrive in their habitat.
- Heat related deaths will increase while cold-related deaths decrease because of the water scarcity and extreme weather events.
- Intense precipitation will affect flooding, drainage systems, traffic and airline management.
- Climate change will also impact the economy through tourism and recreation.

This report also offers suggestions as well as identifies ideas that need to be revisited or supported with more or greater documentation.<sup>9</sup>

What can we do as individuals?

Students can be taught to reduce, reuse, and recycle. There are many ways to use less at school. Students can brainstorm a list of things and ways they can reduce and start putting into practice the ideas from their list. Several examples illustrated on the website [reduce.org](http://reduce.org) include:

- Only take food you're going to eat and eliminate throwing food away.
- Use both sides of paper.
- Write to companies and request to be removed from mailing lists for each catalog or magazine that gets sent to every teacher in the building or ask to receive the publication electronically.
- Host a rummage sale at school.

Actions that can be recommended for the home include:

- Remove your name from junk mail lists.
- Buy in bulk and reducing packaging waste.
- Only buy or serve what you can eat and compost any food waste. You can also donate unused unopened food to shelters or food pantries.
- Donate instead of throwing away used clothing, furniture, or other unwanted items.

Ways to reduce in an office include:

- Use both sides of paper.
- Email instead of printing and mailing items.
- Save things electronically instead of paper copies.
- Buy refurbished equipment.
- Use refillable toners.
- Use recyclable items in the kitchen like coffee mugs and cloth napkins, and compost food waste.<sup>10</sup>

These are just some ideas that can be modeled in a school, home or office environment to protect and preserve the Earth.

## **Strategies**

An Ancient Indian Proverb says, "Treat the earth well: it was not given to you by your parents, it was loaned to you by your children. We do not inherit the Earth from our Ancestors; we borrow it from our Children."<sup>11</sup> In preparing our children to take care of the earth for future generations, students will be engaged in a variety of activities that model their care and concern for the environment as well as increase their capacity to be better readers and writers.

There are many children friendly resources and activities that can be used with second graders. In order to build background understanding, students in my class are going to view media videos, read literature, learn poems, engage in discussions, create posters and

brochures, and educate other students in our school and community as well as their families at home.

## Writing

Second grade students will apply conventions and grammar to write about an action they will take to preserve the environment. I want my students to collaborate and create a product that they can take home and share with their families about what they have learned for what they can do to take care of the earth. It would be incredible if they applied what they learn and do in school to their home and family life and protect the environment in all of their settings. The Common Core State Standards for English Language Arts describes that second grade students are expected to “Write opinion pieces in which they introduce the topic, state an opinion, supply reasons that support the opinion, use linking words to connect opinion and reasons, and provide a concluding statement or section.”<sup>12</sup> I intend for my students to do this about the environment and that their writing reflects them arguing or persuading others to positively protect the environment and cites ways in which they themselves are actively protecting the environment. We could also create a product or book that stays in the classroom and is passed down to future classes of different ways the students in my class preserve the environment and are protecting it for future generations.

## Reading

A priority in my classroom is integrating language arts across the curriculum. To integrate social studies and literacy, I will share student (second grade) friendly titles that outline the ideals that I want my students to have as a result of this unit. I want them to be able to read, draw their own conclusions, and create their own discussions about ideas they gather from various sources. The Giving Tree by Shel Silverstein describes the relationship between a tree and a boy and how a tree can be used for many resources as well as appreciated in nature.<sup>13</sup> Students will read this story and use it to identify key ideas and details as well as story elements, two standards second graders need to master.

The Great Kapok Tree – A Tale of the Amazon Rain Forest by Lynne Cherry describes the interdependence of nature in the rain forest and persuades against cutting down a tree that serves as the center of the natural life there.<sup>14</sup> Students will listen to this story and compare it to The Giving Tree and site the different perspectives of the trees and the environments in which they exist.

The Lorax by Dr. Seuss also details the interdependence of fictional creatures in nature and the reliance of taking care of and not taking advantage of natural resources. The end message also includes the idea of replacing what you use up so that others can benefit and use it.<sup>15</sup> Second grade students will discuss how they will reduce and replace what they use so it will not all disappear.

One of the stories my students enjoy reading in their textbook is a rhyming fiction called “For Love of Our Earth” written by P.K. Hallihan. Students will practice reading this poem in order to increase their fluency. They ask or answer questions about the poem in order to increase their comprehension, but also to consider the variety of ways people can help take care of the earth. As a result of this unit and the students understanding of the impact they can have to improve the earth and environment, students will write and memorize their own poem to present to the class related to ways they are committed to preserving the earth and taking care of the environment.<sup>16</sup>

### Science

To prepare students for creating their own aesthetic space and to take care of plants in nature, I will share the story The Curious Garden by Peter Brown. This book describes some plants and greens that begin to grow in an industrial city in abandoned spaces. The character in the book is a child who cultivates and takes care of a garden, and he also does research and invests in gardening tools. Students will be able to easily relate to the character and it will motivate them to be good guardians of the garden or plants they are going to nurture and grow.<sup>17</sup> During the spring months of teaching this unit, students will work with a partner to choose something (either a flower or vegetable) to plant. They will research what type of care and habitat their plant will need and they will be given seeds to plant what they chose. They will act as scientists continuously researching the needs of their plant as well as observing and recording changes and growth. They will also be responsible for taking care of their plant.

### Critical Thinking

A 21<sup>st</sup> century theme is Environmental Literacy. 21<sup>st</sup> century students should be able to “demonstrate knowledge and understanding of the environment and the circumstances and conditions affecting it, particularly as relates to air, climate, land, food, energy, water, and ecosystems. Demonstrate knowledge and understanding of society’s impact on the natural world. Investigate and analyze environmental issues, and make accurate conclusions about effective solutions. Take individual and collective action towards addressing environmental challenges.” 21<sup>st</sup> century learners are expected to be “creative and innovative, critical thinkers and problem solvers, and communicators and collaborators.”<sup>18</sup> I want my students to be critical thinkers. They need to be aware of the environment in which they live and learn and create a plan for making it a better place. By the end of the school year, I want them to be aware of what the environmental problems are in the space where they learn and I want them to create and agree upon solutions that they will all follow in order to contribute for a better tomorrow. The Best Business Center which sponsors the Business for an Environmentally Sustainable tomorrow offers the following ideas to be included in a sustainability plan. Sustainability plans should include: a vision, evaluation of the current impact, goals and

targets, and plan and actions. My students will follow this template to create a second grade friendly sustainability plan that we will use and evaluate throughout the 2012-2013 school year. Our class will serve as a model to the school and my students will engage other students and teachers to participate in the plan.<sup>19</sup>

### Listening & Discussing

Our school has a great resource for students to use called Discovery Education: [discoveryeducation.org](http://discoveryeducation.org). The video “The Blue Dragon: What a Waste!” is a cartoon video of forest animals who encounter a fire and discuss what caused it and how to better care for the forest setting. It also shows the animals recycling materials they find in the forest and modeling throwing trash away properly. The video ends employing the viewer to “take a look around you, how can you play your part, to make the world a better place, I wonder where you’ll start?”<sup>20</sup> Another great video source is from National Geographic Kids. There are ten quick clips students can watch that illustrate various actions that can be taken to help preserve the environment. Celebrities appear in the videos. Owen Wilson talks about unplugging electronics that are not being used. Cameron Diaz suggests donating old sneakers to be recycled into new products. Ben Stiller argues for bringing your own bag into the grocery store. Students can watch these videos and discuss what they can do in their lives in order to align their actions to what is suggested.<sup>21</sup>

### Creating & Communicating

My students are going to choose an Environmental Protection action and create a campaign to teach others how to align their behaviors to the expected outcomes. The Environmental Protection Agency has many suggestions for what can be done in various settings. I want my students to brainstorm as a class what different things are that can be done and then choose one thing from the brainstormed list. In the house it is suggested to use food that is already in the house instead of buying more, donating unwanted food items, reusing items around the house, buying in bulk and using refillable containers. On the go it is suggested to use recyclable bags, turning off electronics when you’re not in a room, etc.<sup>22</sup>

The idea that one picture is worth a thousand words can be put into practice during this unit. Second grade learners are visual learners, and since one of the learning styles is visual it is important to give students the opportunity to express what they’ve learned through a visual. Students will use a search engine to find a picture or create a collage of pictures that portray what they want the earth to look like. Then in order to increase their writing skills, students will create a twitter tag to accompany their picture or collage of pictures. This idea will allow students to express themselves both visually and through their writing.

### Classroom Activities



## Activity One

A goal of the Common Core State Standards is for students to be able to write an argument to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.<sup>23</sup> After examining the evidence appropriate to second grade students, they will first need to take a stand of something they can personally decide to do to impact the environment. Students will identify what change they are going to make in their own life and what steps they need to take in order for that change to occur. It's important to give students choice so they can show ownership over their idea and action. If they select something that they can be passionate about, they will be more successful at implementing the change in their own life as well as persuading others to implement it. As a class, we will brainstorm what some possible actions are. This will allow students, who are still struggling to get an idea, an opportunity to hear from their peers possible things they can choose from. Students can select what they want to write about, so more than one student may choose the same idea. I'm going to share with my students a change I made in my life is to use all recyclables for lunch. I'll unpack my lunch and show students that I package my sandwich in a container instead of a plastic bag. I use a cloth napkin instead of a paper one. I keep real utensils in my lunch container instead of getting plastic ones. I fill a recyclable water container for my drink. And, I use a reusable lunch box instead of a plastic bag. I will share with my students the waste that amounts by not using recyclable materials. I'll take out enough plastic bags that I would use for the week, napkins, and utensils so students can see how much waste occurs when packing lunch not using materials that are not reused. (I will also be careful to let students know that the waste can be decreased if they reuse the same bag multiple times. By modeling what I do will hopefully help them to realize ideas for what they can do and the impact it can have. Once students have selected the change they are going to make in their lives, they are going to create a campaign to influence or persuade other people to do it as well. The immediate audience for their campaign will be other students in our classroom; however, students will be encouraged to also persuade their parents and families to become invested. Students will write an argumentative or persuasive speech trying to convince their peers and parents to invest in the idea they're trying to convey. Students will be expected to write a persuasive speech that presents their argument, gives three supports for what someone can do in order to support their topic, gives two reasons why it's important and what outcome will occur because of the change, and write a concluding sentence. See Appendix II for a graphic organizer students can use to organize their ideas for writing.

After students have written their persuasive argument, they will create a visual to represent the action they are persuading. Second grade students are expected to present knowledge and ideas. Common Core standards for speaking and listening require students to present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style appropriate to task, purpose, and audience; make strategic use of digital media and visual displays of

data to express information and enhance understanding of presentations; and adapt speech to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate.<sup>24</sup> Students will create a poster to support their initiative. Posters will have to be informative, neat, and aligned to their initiative. They will be displayed around the school so other students can be influenced by the students in my classroom.

Lastly, students will practice reading and reciting the argumentative writing they did. They will add an introduction to their writing by stating who they are and something about themselves, and then present their writing as a speech. Students will practice speaking with inflection and energy and use various strategies to captivate their audience like alternating between looking at their writing and looking at their audience. Students will first present their speech to a small group of their peers in order to practice formally speaking in public, and then they will present it to the whole class. It will also be recorded to share with their families or students in other classes.

## Activity Two

Students in my class are going to plant seeds. In small groups, students are going to choose a vegetable or flower that they want to be responsible for. Starting in late winter or early spring they are going to research what they are going to plant. We'll start from seeds and planters in the classroom. Students will research how many seeds can be planted in the container, how much soil they need, how much sunlight, and how much water. Students will plant their seeds and be responsible for taking care of them as well as tracking their growth. Students will observe and record their observations over the course of the spring semester. Second grade students study evolution and genetics related to plants and animals. Essential Standards for Science expects students to remember that organisms differ from or are similar to their parents based on the characteristics of the organism.<sup>25</sup> Students are going to keep a journal illustrating the progress of what they're planting. They'll start by identifying and describing the seeds they are planting. Students will also compare seeds across groups creating a Venn-diagram to illustrate what is similar and different between the seeds they're planting and the seeds another group is planting. As seeds begin to sprout and grow in the classroom, students will record their observations by both describing what they see as well as measuring plant growth using rulers.

Once there is no longer a threat of frost in our area, students will make decisions as to where the best place would be to plant their seeds outside. We have a set space designated for planting, but students need to decide how much room each plant will need to grow and where the best location will be so the plants get the light and water that it requires. Students will be responsible for planting their seeds. All the students will rotate the responsibility for caring for all of the plants. The small groups will continue to observe the plants and measure the growth of the plants that they planted. They will make

comparisons between the seeds that they planted, the green plant it created as well as what it produced (flower or vegetable). Students will also compare one type of plant to another. Students will continue to be responsible for the care of their plants until the end of the school year. They will also use their critical thinking skills to examine and decide if they made the best decisions related to what they planted, where they planted it, and the amount and type of care they provided to their plants. Small groups of students will work together to compile a report indicating that information as well as offering advice they learned or researched through the process. This will be preserved for future generations of students.

### Activity Three

Erosion is when the surface of the land gets worn down. It can be caused by a variety of variables including air, wind, and water. Right on our own school campus this occurs in multiple places during each rain storm. To engage students and provide background information about erosion, students will watch the Magic School Bus episode “Rocks and Rolls” available on Discovery Education.<sup>26</sup> I’m going to start this lesson by having students participate in what I’ll call an “Erosion Tour.” Students will take field notebooks and tour the school campus. They’ll create two columns (as a graphic organizer) in their notebook. On one side, students will note and describe areas on the campus where they see evidence of erosion and on the other side they will note and describe areas where they do not. Returning to the classroom students will work in small groups to draw conclusions about why the land erodes in certain areas. They will also brainstorm solutions for how they will solve the problem of erosion on the school campus. The second activity is for students to witness firsthand how erosion occurs and to create a variety of solutions to prevent it. There are many lessons and resources available for using erosion tables or stream tables (google “erosion activities for kids”). We have the best set up right outside our classroom window. There is a hill with no vegetation on it to keep the soil in place. Our school is located in the southeast region of the United States and so when it rains, it pours, and the water gushes off the hill and saturates the walkway below with red clay, the type of soil on the hill. We also have a hose on the walkway outside the classroom door. The best scenario would be for the students to observe the runoff after a rainstorm, but if we need to simulate a rainstorm, I will do that using the watering hose. In their field notebooks, students will record what they observe happening on the hill using pictures and words. They will document how it looks before a rainstorm and immediately after a rainstorm as well as a few hours after the storm once the land has settled and dried. In small groups, students will brainstorm a hypothesis to how to solve the problem using materials available on campus (like rocks, grass, sticks, straw, digging a pattern, etc) and they will also brainstorm a solution they would have if they could purchase something (like building in steps or levels to the land and planting bushes or shrubs). Each group will be given a vertical block of space on the hill to test their hypothesis. Students will be given time to construct their space using the materials they brainstormed that would work. They will document the process in their field notebooks

using pictures and words. They will also share their work with their peers and begin to make comparisons among the possible solutions. Students will observe their work over time noticing changes caused by wind and air and then by rain once a storm occurs. They will draw conclusions based on what the best scenario is using available materials. After testing their hypothesis, students will meet with their group to discuss what they observed and make changes to what they tried and retest their ideas. Students will also research in the classroom solutions for the best way to prevent erosion. Several ways include planting trees or shrubs so the roots hold the soil in place and they block the wind, lay mulch above the soil, and use bricks or stones to edge the land. Students will then apply their persuasive writing and send letters to Lowes Home Improvement or other organizations in North Carolina, to solicit support for our problem. All of these activities will allow students to have firsthand ownership over identifying a problem in their immediate surrounding, brainstorming possible solutions, and trying to solicit help from professionals for getting it solved. Students should feel a great sense of accomplishment and confidence over their 21<sup>st</sup> century learning skills.

Abraham Lincoln said, “You cannot escape the responsibility of tomorrow by evading it today.” If you ask a second grader what his or her responsibilities are, the child might respond with an answer related to how they should behave in school or a specific setting, or might tell you a chore or job they have to do. By the end of this unit, if students are asked what their responsibility to the environment is, their response should include multiple ways they take care of the earth and teach others how to care for it and preserve it. “Never doubt that a small group of people can change the world – indeed it is the only thing that ever has!” said Margaret Mead. This rings true for environmental change, particularly the environmental change and movement that is going to occur in my classroom this year and in future years as a result of this curriculum unit. Students in my class are going to identify ways they can make improvements in their lives for protecting and preserving the earth and they are going to act on those ways as well as inform others about their changes. These small changes may only yield small results in relation to the scope of what needs to occur in the whole world, but they will be a great start for the people who will be immediately impacted – my students.<sup>27</sup>

## **Appendix I – Implementing Common Core State Standards and Essential Standards**

Reading Standards for Literature – Second Grade students ask and answer questions to demonstrate understanding of key details, recount stories from diverse cultures, and determine their central message, lesson or moral, and describe how characters in a story respond to major events and challenges; compare and contrast two or more versions of the same story by different authors or from different cultures; and by the end of the year, read and comprehend literature in grades 2-3 text complexity band proficiently, with scaffolding as needed at the high end of the range.

Reading Standards for Informational Text – Second grade students ask and answer questions to demonstrate understanding of key details in a text, identify the main topic of a multi-paragraph as well as the focus of specific paragraphs within the text, and describe the connection between a series of scientific ideas or concepts; students determine the meaning of words and phrases relevant to grade 2 topic or subject area, know and use various text features to locate key information or facts, and identify the main purpose of a text, including what the author wants to answer, explain, or describe; they describe how reasons support specific points the author makes in a text and compare and contrast the most important points presented by two texts on the same topic; and by the end of the year they read and comprehend information text including history/social studies, science, and technical texts, in grades 2-3 text complexity band proficiently with scaffolding as needed.

Reading Standards: Foundational Skills – Second grade students will know and apply grade-level phonics and word analysis skills in decoding words; and, they will read with sufficient accuracy and fluency to support comprehension.

Writing – Second grade students write opinion pieces in which they introduce the topic or book they are writing about, state an opinion, supply reasons that support the opinion, and provide a concluding statement or section.

Speaking and Listening – Second grade students participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups. They recount or describe key ideas or details from text read aloud or information presented orally or through other media. Ask and answer questions about what a speaker says in order to clarify comprehension, gather additional information, or deepen understanding of a topic or issue. Students produce complete sentences when appropriate to task and situation in order to provide requested detail or clarification.

Language Standard – Second grade students will use knowledge of language and its conventions when writing, speaking, reading or listening.

Science - Second grade students learn about evolution and genetics by remembering that organisms differ from or are similar to their parents based on the characteristics of the organism. They identify ways plants closely resemble their parents in observed appearance and ways they are different and they recognize variation among individuals that are related.

Social Studies – Students understand the effects of humans interacting with their environment by giving examples of ways in which people depend on the physical environment and natural resources to meet basic needs and they will explain how people positively and negatively affect the environment.

## Appendix II – Persuasive Writing Graphic Organizer

Name: \_\_\_\_\_ Date: \_\_\_\_\_ #: \_\_\_\_\_

Environmental Concern:

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Three Things You Can Do:

1.
2.
3.

Two Reasons Why It's Important:

1.
2.

Concluding Sentence:

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## Resources

- "10 Environmental Games That Teach Kids About Earth, Ecology & Conservation." Cool Websites, Software and Internet Tips. <http://www.makeuseof.com/tag/10-environmental-games-teach-kids-earth-ecology-conservation/> (accessed September 23, 2012). This website offers games for students to play to learn about Earth, Ecology, and Conservation.
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- Brown, Peter. *The curious garden*. New York: Little, Brown and Co., 2009.  
This book describes a boy who cultivates some plants growing in an abandoned part of the city and develops a garden for others to appreciate. Channel 4. "The Blue Dragon: What a Waste!" Welcome to Discovery Education. <http://discoveryeducation.com> (accessed September 23, 2012). This video demonstrates what fictional animals do to clean up litter found in the environment.
- Cherry, Lynne. *The great kapok tree: a tale of the Amazon rain forest*. San Diego: Harcourt Brace Jovanovich, 1990. This story describes the interdependence of nature in the Amazon Rain Forest.
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- "Common Core State Standards for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects." Common Core State Standards. [www.corestandards.org/assets/CCSSI\\_ELA%20Standards.pdf](http://www.corestandards.org/assets/CCSSI_ELA%20Standards.pdf) (accessed September 23, 2012). This pdf captures all of the common core language standards for students.



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"Earth Day." Earth's Kids. <http://www.earthskids.com/earthday.htm> (accessed September 23, 2012). This website offers support resources for protecting our planet.

"Earth Day 2012." Earth Day Network. <http://www.earthday.org/> (accessed September 23, 2012). This website offers information about Earth Day as well as a student friendly global footprint calculator.

"Framework for 21st Century Learning." The Partnership for 21st Century Skills.  
<http://www.p21.org/overview/skills-framework> (accessed September 29, 2012).  
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[http://www.ted.com/talks/james\\_hansen\\_why\\_i\\_must\\_speak\\_out\\_about\\_climate\\_change.html](http://www.ted.com/talks/james_hansen_why_i_must_speak_out_about_climate_change.html) (accessed September 30, 2012). This TED talk delivered by climate expert James Hansen gives voice to why he is concerned about the environment and why other people should be.

"National Geographic's Strange Days on Planet Earth. The One Degree Factor. Why Should I Care? | PBS." PBS: Public Broadcasting Service.  
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"Reduce Waste." Minnesota Pollution Control Agency. <http://reduce.org/> (accessed September 29, 2012). This website offers ideas for how to eliminate waste in various settings (home, office, school, etc).

"Reduce, Reuse, Recycle | Resource Conservation | US EPA." US Environmental Protection Agency. <http://www.epa.gov/osw/conserves/rrr/index.htm> (accessed September 23, 2012). This website bullets how to produce less waste.

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<sup>11</sup> National Institute of Environmental Health Sciences, *Quotations on the Environment and Nature*, <http://kids.niehs.nih.gov/explore/ehs/qtnature.htm> (accessed September 29, 2012).

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