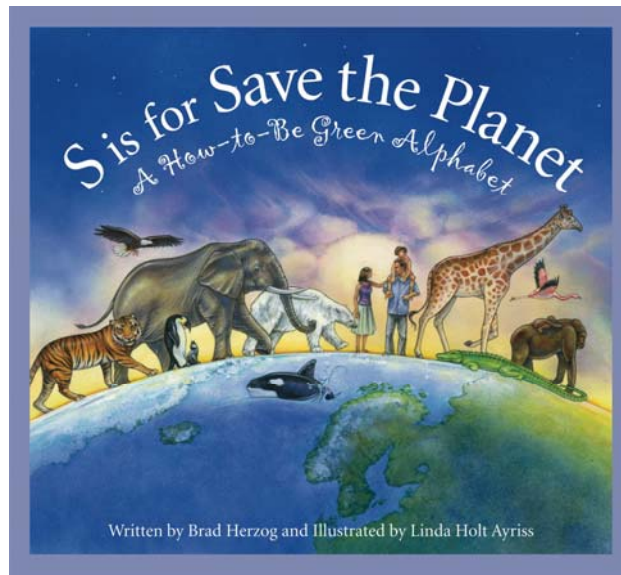


Teacher's Guide



S is for Save the Planet A How-to-Be Green Alphabet

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Published by

**Sleeping Bear Press
310 N. Main St., Suite 300
Chelsea, MI 48118
800-487-2323**

www.sleepingbearpress.com

Before reading!

K-W

Share what you already know about saving our environment and what you want to learn as you read through the stories.

What I already know...

What I want to know...

Frontloading Vocabulary

Review these environmental terms and phrases – see if you can locate simple definitions by skimming through the text or using a thesaurus or dictionary. This will be your glossary for the unit.

acid rain -

biodegradable -

carbon dioxide -

carbon footprint -

composting -

contaminated -

debris -

decompose -

endangered species -

extinct species -

fossil fuels -

global warming -

habitat -

incompatible -

insulation -

ozone -

relics -

smog -

threatened species -

toxic -

During the Reading

Earth Day, April 22

There are many tasks you can do to help the Earth on Earth Day, April 22.

- Plant a tree at your local park or even in your backyard, if you are lucky enough to still have one.
- Plant an herb garden so that herbs do not have to be processed and packaged.
- Hold an Earth Day fair with games and activities that teach about our Earth.

Go to www.earthday.net –Scroll down and click on EDNActionCenter, click on “Find out what hundreds of thousands of young people like you are doing for Earth Day” Scroll down to Fundraise at your School and click “some tips.”

Record ideas from this Web site, the book’s “A” page, and your own general knowledge:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____



The Water Cycle and Acid Rain

Go to <http://earthguide.ucsd.edu/earthguide/diagrams/watercycle/index.html> to see how the water cycle works.

Investigate each of the areas:

- Where It Exists
- Changing Form
- How It Moves

Recreate the model below but use a black crayon or colored pencil to represent the arrows and any of the water sources: lake, rain, and snow.

If the gases in our air could be seen, then our rain, snow, oceans, rivers, lakes, streams, and ponds would all look dark like your drawing. Can you imagine a world without the beautiful blue color in our skies and waters? I can't!

Saving Energy Can Be as Easy as Choosing a Light Bulb.

Which ones are in your home and which ones should be??

Draw a blue circle around the light bulbs you see in your home and label.

Draw a green circle around the light bulbs you should see, and label.



Research how much energy each light bulb uses, then compare the savings.

Shopping Watch List

Here is a list of ideas you should think about before you go to the store.

- Bring cloth sacks with you so that you don't have to use either paper or plastic bags.
- Check tuna cans to ensure they were caught safely without hurting dolphins and other large fish.
- Buy only compact fluorescent or LED light bulbs.
- Avoid items that have a lot of wrapping or packaging.
- Buy bulk items.
- Look for boxed items that show the recycle symbol.
- Jewelry or souvenir items should never have coral, ivory, or abalone or tortoise shell.
- Do not buy polystyrene in cups, plates, egg cartons, or anything else.
- Use only rechargeable batteries.
- If you can use something besides paper, do not buy the paper product such as napkins, plates, cups, bowls, or even plastic silverware.
- Buy organic foods.

Add your own ideas here:

Even before you head to the grocery store, shop at a local market!

Extinct or Endangered?

Guess which animals are extinct, endangered, or threatened.
Circle the extinct, underline the endangered, and box the threatened animals.



Bengal Tiger



Polar Bear



Dodo Bird



Giant Galapagos Tortoise

Now search the Internet using the animal's name to see if you are correct. Then use the words threatened, endangered, and extinct animals to find other animals in these categories. You will also find many Internet sites about how you can help these animals.

Alternative Energy Fuels: Solar, Wind, and Hydropower

1. Each member should choose one alternative fuel: solar, wind, or hydropower and share at least ten interesting and/or important facts. Record, using bullets on your own paper.

Here are two Web sites that were written just for you:

<http://energyquest.ca.gov/story/index.html> Scroll down to the Energy Story and click on your chosen alternative energy fuel.

www.powerhousekids.com Click on Energy and the Environment, scroll down to Renewable Energy. Select your chosen alternative energy fuel on the left bar.

2. Now pair with someone who studied what you did and determine the best ten facts from both of your lists, in order to bring back the very best information to your team. You should have much of the same thing, but some facts may be different; carefully choose which ten to share with your home group.

3. Return to your home group and take turns sharing your best ten facts.

4. Decide as a group one thing the school could do that would use an alternative fuel. Write a letter to your school about what they should do and how it will help the environment.

5. In the letter:

Introduce yourself.

State why you are writing.

State your idea with at **least three reasons why it will help the school.**

Ask for a reply; if you don't ask you might not get a reply.

Thank them for their time.

Finish with Sincerely, your signature, and your name.

6. Review your letter for spelling, capitalization, and punctuation.



Cause and Effect

Consider and review the causes and effects of global warming.

1. Find three causes of global warming using Letter “G” information. List them on the left side of the oval and then underline and connect the lines to the center oval.
2. List three effects of global warming and list them on the right side of the oval. Underline and connect these.
3. Write observation sentences. What do you notice about the causes and effects of global warming?

Causes

Effects

Global Warming

Don't Harm the Animals!

Create a poster using some of the ideas from Letter “H” information and develop some of your own.

Record the book’s ideas here:

Record some of your own ideas here:

Sketch out your poster here before you create it on the 11x17 paper in full color!
Take your time and remember to use big writing — posters are meant to be viewed from a distance.

You Be the Detective



You will need the help of your teachers and/or parents as junior detectives with each of the missions.

Keep a journal of each mission, recording the steps you used AND the results you discovered and achieved.

Mission One:

Use a candle to test all of the doors and windows in your home for leaks. This is a good family activity for a windy Saturday.

Mission Two:

Check the home thermostat and lower it two degrees. If it is cold out, add a sweater or snuggle in a blanket for added warmth and if it is hot out, wear short sleeves and pants and limit your activity indoors; an overhead fan helps, too.

Mission Three:

Check the water heater and make sure it is set at 120°.

Mission Four:

Search out and collect all plastic bags in your home and determine ways you can reuse them. You can even take them back to the store that gave them to you.

Mission Five:

Sift through all the items in your home that could be recycled and create a small recycling center in your own house or garage: one area for paper, plastic, cans, and glass. After your center gets full, take them to your local drop-off site.

Mission Six: Search your home, basement, or garage for any old items that would be toxic (deadly to the environment) to throw away. Collect them in a small box and locate a safe place to dispose of them. The police in your city might know.

Mission Seven: Find a local market or food stand and determine what can be bought there so that you will save the energy from hauling it across the country or even the world.

Create your own Mission!

Be a Hero for the Planet!!!!

Go to one of the Web sites shared on the Letter “K” information page to look for environmental projects.

List in short phrases, like titles, all the interesting and important ideas you find.

- 1. _____
- 2. _____
- 3. _____
- 4. _____
- 5. _____
- 6. _____
- 7. _____
- 8. _____
- 9. _____
- 10. _____



Why a Local Market?

Use the Letter “L” information and your own ideas to share why it is important to be a “*locavore*” — people who won’t eat anything that has been grown or prepared more than 100 miles away. (Or, at least, be someone who uses as many of the items at a local market as possible.)

*Record the **Top Eight Reasons** why it is helpful to shop at local markets:*

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____



Saving the Rain Forests



Draw on a separate piece of construction paper ten to fifteen items you use that contain some form of paper, cardboard, and/or wood. Ask a friend to circle the items that can be recycled and underline the items that can be reused into something useful for your family; there can be circles and underlining on the same item. Then check and see if they are right. The information from letters “N” and “P” will get you started.

Now answer these three questions:

1. How quick did you find/think up the items? _____
2. Which item will you recycle and reuse right away? _____
3. How will recycling and reusing help the rain forests of the world?





There Is Garbage in Our Oceans. Ick!

Go to oceanconservancy.org/ Find the “Take Action” section on the left of the site and Click on “Learn about everyday actions you can take.”

Use the ideas from the book and this Web site to discover ways you can help the water in your area. If you live near the ocean you will help in different ways than someone who lives in the desert.

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

How Do We Clean Up Our Oceans, Lakes, and Ponds — Lab

Try this quick experiment! Remember to read all of the information before you begin, and don't forget to record your hypothesis.

Materials:

small white or light-colored bowl
pepper
water
liquid soap

Instructions:

1. Fill the bowl with the water about $\frac{1}{2}$ of the way.
This is the water in an ocean, lake, or pond.
2. Sprinkle some pepper in the water.
This is the garbage that is found in the ocean, lake, or pond.
3. Place one drop of liquid soap in the water.
This is chemical used to clean up the ocean, lake, or pond.

Hypothesis: I think... will happen because...

I think _____ will happen because...

Results:

A. Draw a picture of the results.

B. Review your results and answer these three questions:

1. What do you see after you placed the chemical in the ocean?
2. Where did all the garbage go?
3. What is still needed to clean up our oceans, lakes, ponds, and all waterways?

C. Share what else you are thinking about this experiment.

A Quiet Place

A field trip is needed!!

You could:

Talk with your teacher about a walk outside or even a trip to a natural area or zoo.

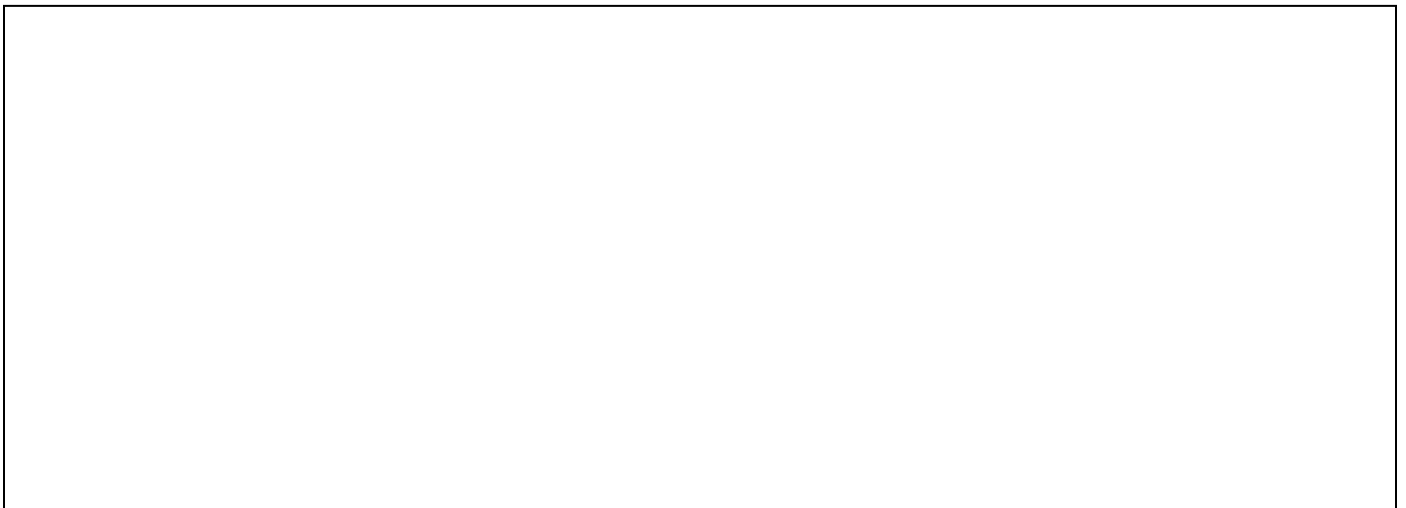
OR

Talk with your family about a trip to a natural wonder, nature trail, or zoo.

OR

Talk to yourself ☺ and take a walk around your neighborhood or local park.

1. List five natural things you see: plants, flowers, birds, reptiles, mammals.
2. Draw three of these natural wonders in detail.
3. Locate the scientific names of your natural items. Write them in the space below your pictures.



The 3 R's

The Letters “R” and “T” information will give you many ideas for reducing, recycling, and reusing, but I know you have many more. Look around the classroom and home. Locate items that should be reduced, recycled, or reused and place the item in the appropriate category. Some items might fit into more than one category. Keep this sheet as neat and organized as possible so that you can share it with the principal and your family.

REDUCE	REUSE	RECYCLE

Six Hundred Years of Polystyrene Foam?!

Answer these questions using the information on the S page:

Who created Styrofoam? _____

When was it created? _____

Why is it used? _____

What is used to make it? _____, _____, _____

Is it recyclable? _____ biodegradable? _____

How is the making of polystyrene foam products harmful to the environment?

Why would a dolphin mistake a polystyrene foam cup for something it could eat?

What items are made of polystyrene foam? (Use the “S” page but try to think of anything else you have seen or used yourself.)

If you throw away a polystyrene foam cup or bowl, how old will you be by the time it decomposes?

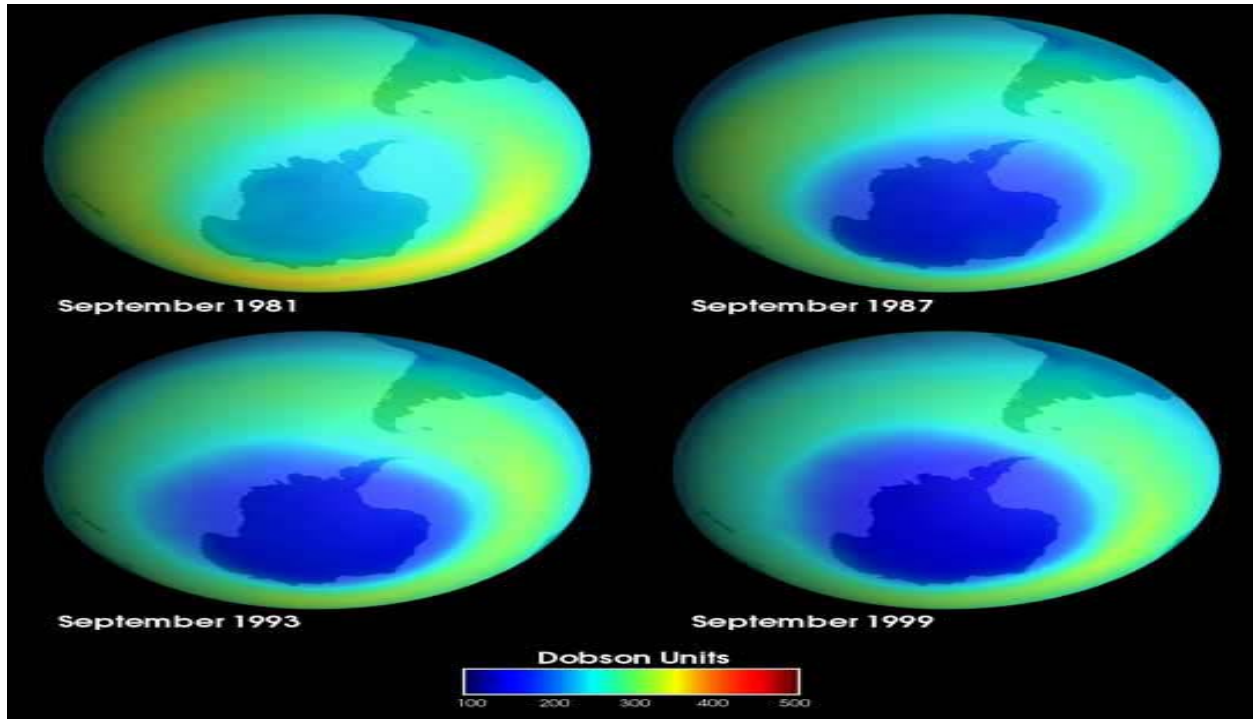
_____.

How will you avoid using polystyrene foam in the future? _____

Unhealthy Ultraviolet Rays

You already know it is important to put on sunscreen before you go out in the sun but what does our planet need in order to stay healthy? Planet Earth has an ozone layer to protect it. This ozone layer filters out certain harmful radiation by only letting in the good rays. However, this ozone layer has been damaged in recent years.

According to NASA, “Ozone depletion has been most severe at the poles, especially over Antarctica, where a seasonal ozone layer “hole” appears (in the image, the blue color means lack of ozone). The Antarctic ozone hole was discovered in 1985 by British scientists: it is not technically a “hole” where no ozone is present, but is actually a region of exceptionally depleted ozone in the stratosphere over the Antarctic that happens at the beginning of Southern Hemisphere spring (August-October).



1. What do you notice about this picture?
2. What affects the ozone layer?
3. What can you do to protect the ozone layer?

Vermiscomposting

Create a poem or song lyrics (you should use a melody you know well) using the Letter “V” information. You could start with the phrase, Earthworms keep it clean... or create one of your own.

Take a few notes using letter “V” here:

Write out your draft here:

Type the Poem or Song Lyrics:

- Choose a fun but readable font.
- 14-18 pt. in size
- Center the poem on the page.
- Single-spacing
- Save a space for a picture that illustrates your poem or song.
- Practice reading it aloud — poems and songs are meant to be heard!

Water Conservation

Create a Water Conservation Do's and Don't's Chart to post in your home, your school, or a local business.

Develop ideas using the Letter "W" information.

Also use these helpful Web sites; some of them even have games:

<http://www.epa.gov/water/kids.html>

http://www.ecokidsonline.com/pub/eco_info/topics/water/water/index.cfm

<http://www.wateruseitwisely.com/>

Record a draft here before transferring to a 11x17 poster paper. You could even make a couple of charts to share with neighbors and local businesses.

Water Conservation Do's and Don't's

Do	Don't

Xeriscaping

Xeriscaping is landscaping that conserves water. If you plant a garden with a shrub, tree, or flower that is native to your region you will save water and need fewer chemical fertilizers or dangerous pesticides.

Google your state and the phrase Native Plants.

Example: Native plants in Arizona or Arizona's Native Plants.

- A. Review a few Web sites and skim pictures and print for information.
- B. Choose three Web sites that can help you determine three trees, three shrubs, and three flowers you could use in your own garden.

Web sites:

- 1.
- 2.
- 3.

C. Record three trees, three shrubs, and three flowers:

Trees	Shrubs	Flowers
1.	1.	1.
2.	2.	2.
3.	3.	3.

D. Design your own native garden and share what types of habitats you have created for your local wildlife, birds, and butterflies.

Sketch out a draft below.

Earth Day, Every Day!

This I have learned...

There is plenty we can do to help the environment every day.

- Post all of your work posters in the halls, cafeteria, even in the bathroom. ☺
- Create a booklet (on recyclable paper) for your neighbors about how they can reduce their use of fuels and materials, reuse items, and recycle.
- Develop a Web site about going green and post it for all your friends and family.
- Write one law that you would make so that our environment would be taken care of now and in the future. Send to your district representative in an e-mail or letter.
- Educate your school about fund-raising programs such as The Conservation Fund's Go Zero program. Go to <http://www.conservationfund.org/gozero>

*Now share a few of your own projects using any of the work you completed, any of the Web sites you explored and, of course, your book, **E is for Environment**.*

Hint: You could have others do some of the tasks you did in this unit.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

Now I Must Act!

Now you must act on your new knowledge! After reading *E is for Environment* you know many ways to help BUT what will YOU choose to actually DO!

Choose any of the projects listed on the previous page, or on page 13 of this packet, and complete.

Answer these questions before you begin:

What materials will you need — will you need special tools?

How much time will be involved — will it take one or two days to complete or over a week or more? _____

Do you need help? _____ who will help you? _____

Who will use your information — who is your audience? _____

What information will you include? _____

How will it help the environment — what is the desired outcome? _____

Now ACT – be prepared to share your project!