



## EDUCATOR PREPARATION PACKET

This information & curriculum packet is offered to help your school prepare for a memorable day with your A4ED author or illustrator. These optional materials are designed to inspire teachers and students to consider the importance of the natural world. Attached, you will find:

**Eco-sites for Kids** is a list of fantastic websites for students to explore. They are sure to capture their attention and keep their noggins working.

**KEEPING THE BALANCE: Food Chain Pyramid** is a fun, easy classroom activity that quickly exemplifies the importance of good stewardship with kinesthetic appeal.

**ENDANGERED SPECIES: A Research Project** gives students the opportunity to research causes of decline for a particular species of animal and consider what efforts are being made on that species' behalf. This lesson has a strong knowledge-sharing component.

**WRITING IS POWER: Send a Persuasive Formal Letter to Speak-out on Climate Change** is a great Earth Day activity that touches on many critical concepts and lessons. Children cannot legally vote, yet their voices can still be heard... as writers! Designed for most grade levels, this lesson includes topic points for global warming legislation as well as a template for writing to a state senator.

**GOING WILD: A Naturalist's Wildlife Journal** gets students outside to connect with nature while meeting several standards in language arts and science. Remember, Earth Day isn't just about discussing global issues and promoting action; it's also about celebrating nature, even in the simplest ways—exploring and honoring the beauty of the world around us.

It may also be helpful for your students to understand why Earth Day was started in 1970 by 20 million people who rallied for environmental protection. Two websites that explain the interesting history behind Earth Day and address current environmental affairs are <http://www.earthday.net/> and <http://www.earthday.gov/>. The annual event is now an international celebration with a focus on conservation and sustainability to protect natural resources for future generations.



## Eco-sites for Kids

Today, the Internet is a popular and useful resource for teachers and children, but finding websites that are education yet entertaining can be a challenge. Below are several wonderful websites for your students to explore in preparation for your Authors for Earth Day event. The information, activities and games are sure to get them thinking globally (*thinking* is the optimal word):

PBS Eeko World <http://pbskids.org/EEKOWORLD/>

Kids Can Save the Earth <http://www.50simplekids.com>

EcoKids <http://www.ecokids.ac.nz>

Energy Quest <http://www.energyquest.ca.gov/>

The Green Squad <http://www.nrdc.org/greensquad/>

Kid's Planet <http://www.kidsplanet.org/>

Earth Matters <http://www.earthmatters4kids.org/main.html>

Global Warming Kid's Site <http://epa.gov/climatechange/kids/index.html>

Wolf Quest <http://www.wolfquest.org>

Journey North: A Global Study of Wildlife Migration <http://www.learner.org/jnorth>

Ask a Biologist <http://askabiologist.asu.edu>

BugBios <http://www.insects.org>

NASA Earth Science Enterprise <http://kids.earth.nasa.gov/games/>

Eek! <http://dnr.wi.gov/org/caer/ce/eek/cool/index.htm>

Maggie's Earth Adventures <http://www.missmaggie.org/cartoons/>

Recycle City <http://www.epa.gov/recyclecity/>

Field Trip Earth <http://www.fieldtripearth.org/index.xml>

## KEEPING THE BALANCE: Food Chain Pyramid

Around the world, forests are important ecosystems. An ecosystem is a biological community of interacting organisms which depend on their environment. Sun, rain, soil and water help create a habitat but every plant and animal plays a specific and valuable role in keeping the ecosystem working. One of the most significant elements of any ecosystem is the food chain.

This project is best done in a small group.

### WHAT YOU WILL NEED:

A legal size sheet of paper  
10 paper cups  
Masking tape  
Colored pens



### BUILDING A FOOD CHAIN PYRAMID

Across the sheet of paper, write the words: **LARGE AREA OF NATURAL LAND WITH HEALTHY SOIL & CLEAN WATER.**

Turn the cups upside down and using strips of masking tape (so the cups can be re-used later) label them with the following 10 forest plants and animals, one per cup: GRASS, FLOWER, SHRUB, TREE, SQUIRREL, BEAVER, DEER, WOLF, EAGLE and HUMAN. Consider using a different colored pen for each group (EX: **plants**, **herbivores**, **carnivores**, **human**).

Lay the paper flat and balance the cups in a pyramid formation on top of it. The bottom row of cups will be the four plants because they use the space and nutrients the land provides and they are the foundation of any ecosystem.

The second row should be the three herbivores—those animals who eat the plants that live on the land. Balance those cups atop the plants because they rely on both plants and land for survival.

The third row up should be the two carnivores—the animals who eat the herbivores, who eat the plants that live on the land. Balance their cups atop the herbivores because the carnivores need everything below them for survival.

The top cup of the pyramid should be the human. Human life is dependent on sound and stable ecosystems for food, oxygen, drinking water, waste management, a sense of beauty and so much more! We are balanced atop carnivores, herbivores, plants and land because we need all of them for our survival.

Again, all the cups should be sitting on the paper and the pyramid should look like this:

HUMAN  
 WOLF    EAGLE  
 SQUIRREL   BEAVER    DEER  
 GRASS   FLOWER   SHRUB   TREE

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**LARGE AREAS OF NATURAL LAND WITH HEALTHY SOIL & CLEAN WATER**

## A DAMAGED ECOSYSTEM

Like the cups, everything in the natural world is dependent on all the other things. There must be balance. If one plant or animal disappears, others are affected, entire ecosystems may be destroyed.

Without touching any other items, try to pull a single cup out of the pyramid... try to slip the paper out from under the stack. Does the pyramid stay standing? Notice what happens to the HUMAN cup when other creatures, plants or natural land are tampered with or removed from the stack. If a habitat falters, what happens to us?

Discuss the results.



**"When we try to pick out anything by itself, we find it hitched to everything else in the Universe."**

John Muir, *My First Summer in the Sierra*



## ENDANGERED SPECIES: A Research Project

Pick an endangered animal and research the history of that species to answer the questions below. Write a report, give an oral presentation or follow the directions below to share the data obtained. Some endangered animals are offered here—you may choose from this list or select another, perhaps lesser known, endangered species:

### MAMMALS

Asian elephant  
Mountain gorilla  
Bengal tiger  
Vaquita porpoise  
Giant panda

### BIRDS

California condor  
Hyacinth macaw  
Ivory-billed woodpecker  
Harpy eagle  
Whooping crane

### REPTILES

Leatherback sea turtle  
Komodo dragon  
King cobra  
Baja California legless lizard  
Dwarf crocodile

### AMPHIBEANS

Western leopard toad  
Blue-sided tree frog  
Chinese giant salamander  
Sagalla caecilian  
Great crested newt

### FISHES

Whale shark  
Bluefin tuna  
Leafy sea dragon  
Great white shark  
Atlantic cod

### INVERTEBRATES

Franklin's bumble bee  
Monarch butterfly  
Giant freshwater crayfish  
American burying beetle  
Powelliphanta snail

- What is the scientific name of the species?
- How many were there originally and what was their range?
- How many are there currently and what is their range?
- When did their numbers begin to dramatically decline?
- Why? What factors caused them to become endangered?
- What has been done to recover this species in the wild?
- What groups and organizations are involved in their protection and recovery?
- What are the challenges facing the recovery effort?
- Might the species ever return to its original numbers? If yes, how? If no, why not?

Here's a great way to offer this lesson:

1. Break into groups of four. Each group picks one endangered animal then each student within the group researches and answers two of the eight questions above on their own using all available resources (books, newspapers, Internet, calling authorities).
2. The groups come back together to share the data they have obtained about their animal. All four students should complete the answers to their remaining questions so they are fully informed about their animal.
3. Each group creates one visual aid that represents the information they have learned about their animal (diorama, art poster, clay sculpture, etc, adding written elements to better explain details).
4. Students rotate counter-clockwise from project to project to teach and learn about all the animals:
  - a. Place all the groups with their projects in a large circle around the room.
  - b. Each member of a group should count off, 1-4.
  - c. The number 1 person will stay with their project while 2, 3, and 4 rotate to the right. Number 1 person then teaches the arriving students about their animal for 5 minutes using their project to demonstrate.
  - d. Next, every number 2 person stays with the animal they just learned about (they will teach the next group). Numbers 1, 3 and 4 rotate again to the right. The number 2 person then teaches the arriving students about that animal.
  - e. Then person 3 stays. Then person 4 stays. Then back to 1.
  - f. Continue until every student has gone fully around the room and is back at their original project.

Through the process, each student plays the roles of both teacher and pupil, so they must listen carefully to the information at each project because they may have to teach it to the next group.



## WRITING IS POWER: Send a Persuasive Formal Letter to Speak-out on Climate Change

While we learn about democratic process from an early school age, U.S. citizens must wait until age 18 to gain legal voting rights. But children can still have their voices heard—as WRITERS! Using the power of words, students of any age may speak directly to law makers and influence decisions that affect the world. Mailing students' persuasive formal letters to one of your state senators about a topic that will greatly impact their future is a wonderful way to empower kids to find their "voice", and prove that words are valuable tools! Through writing, we can influence the way people think and how they act.

### TOPICS COVERED:

Research & informational text comprehension – Know your facts

Persuasive writing – Choose words that influence

Formal letter writing – Write in a specific format

Character Counts – Make a positive impact

**STEP 1**—Research Climate Change, also called Global Warming. The U.S. EPA has a great website for kids: <http://epa.gov/climatechange/kids/index.html>. Here are several facts about global warming:

- For years, scientists have recognized that global warming is posing unprecedented risks for humans, wildlife and habitat. Now the issue is coming to the awareness of people everywhere.
- Global warming is perhaps the greatest global challenge. It is already changing human food and water supplies and increasing destructive weather events. These challenges along with rising air and water pollution are likely to cause significant health issues for all humans.
- Another part of the challenge is the impact to wildlife and habitat. The changing, shrinking and destruction of habitats require wildlife to migrate or adapt and threatens their very existence.
- Scientists say that within the next 100 years global warming could result in the extinction of one third of the species now living on Earth. The arctic snow caps are rapidly melting due to global warming and Polar bears and Emperor penguins will soon be critically endangered.
- In order to address global warming and its impacts on humans and nature, we must continue to enact legislation that reduces critical emissions and limits the amount of pollution sent into the atmosphere.
- Trees and plants naturally reduce emissions in the atmosphere, so woodlands, rainforests and other natural habitats must also be carefully protected and replanted to help clean the air.
- We must remain committed to high standards because the benefits of emissions reductions and habitat protection will take many years to be fully realized.

**STEP 2**—As a group discuss your feelings about Climate Change. Share thoughts of concern and upset, but also focus on strong, positive feelings that will come with moving in a better direction, making an impact and reaching a community goal. **It's important to end this discussion feeling hopeful and empowered.**

- Does Global Warming make you angry? Sad? Fearful? Why?
- Are you anxious to help?
- How will you feel if we stop the drastic effects of Global Warming? Thankful? Happy? Relieved? Powerful?

**STEP 3**—Discuss solutions. What changes can we make ourselves, in our own schools & homes? What do we want our legislators to do on the state/national level? Talk about state senators, who they are and the power they have.

**STEP 4**—Write formal persuasive letters based on the formatted template below. Mail them in bulk to one of your state senators at their Washington D.C. address.

**STEP 5**—Smile, you made an impact!

## **REMEMBER:**

Use the correct formal letter format

Make your letter short and to the point

Edit for proper grammar and spelling

Don't indent your paragraphs

Be polite yet passionate

Include accurate facts to support your position

## Persuasive Formal Letter Format

Name of Student  
Name of School  
School Street Address  
City, State, Zip

The Honorable [First, Last Name]  
United States Senate  
Washington, DC 20510

Date (written out: month, day, year)

Dear Senator [Last Name],

Paragraph #1 – INTRODUCE: Briefly state the purpose of the letter. Example: “I am writing you today to express my concern about global warming, which is beginning to have terrible effects on humans, wildlife and habitats.”

Paragraph #2 – INFORM: State accurate facts about the issue. Example: “Global warming poses a real threat to the world. Humans are facing health issues from pollution. Changing weather is already affecting our safety and food supplies. Polar bears and penguins are losing their habitats as the ice caps melt, and many other species are at risk, too.”

Paragraph #3 – PERSUADE: Explain how the issue affects you and how you feel about it. Example: “I am worried about the future! I want to grow up on a healthy planet that has clean air and water, and I don’t want wildlife to disappear, so I am angry that people continue to pollute the Earth!”

Paragraph #4 – CONCLUDE: State the action you want taken. Example: “Please help! We need laws to stop polluters and slow the effects of global warming. I urge you to support legislation that immediately reduces emissions from cars, factories and communities. Thank you for any actions you take to protect the environment that my future depends on. I am counting on you.”

Sincerely yours,

Sign your full name





## GOING WILD: A Naturalist's Wildlife Journal

Naturalists are typically people who study wildlife in their own habitats, and then share their knowledge to inform others about the importance and beauty of the natural world. Most naturalists spend a good amount of time in the outdoors, carefully documenting their experiences.

Create a journal with several pages of folded paper. Then spend at least one week watching some of the animals that live in your neighborhood *without touching or disturbing them*. What species of wildlife do you see between home and school, out for a walk or riding a bike? Be sure to look up in the sky, in trees and buildings, on the ground and in the water. Write down your observations and thoughts in the journal.

**Watch a minimum of four animals for ten minutes each for steps 1-5.**

1. Name the animal and carefully describe it.
2. List all the behaviors you observe.
3. Ask yourself at least three of the following questions and write your answers in the journal:
  - What is the animal doing? What is its goal?
  - What time of day is it (morning, midday, evening, night)? Why is the animal active at this time of day?
  - How is the animal interacting with its environment?
  - Does the animal notice me? If yes, what is its response? Why?
  - Did I observe anything unexpected? If yes, what?
  - How does that animal make me feel (happy, excited, nervous, peaceful)? Why? Is my response based in fact or fiction? Perhaps a past experience?
  - What is beautiful or interesting about the animal?
  - Why is that animal important to the environment? What role does it play?
4. Name at least two unique physical qualities that you notice about that animal. Try to pick things that might go unnoticed with a casual glance.
5. If possible, take a photo or draw a sketch of the animal. Your images can be either artistic or used as diagrams to show specific details. By adding visuals to your journal, you will better recall the animal and the experience later.
6. Back at home, or at the library, research the four animals you watched. Using books and on-line resources, discover two additional facts about each animal that you didn't already know. Include them in your journal.
7. Share observations/information from your journal with your classmates to help them better understand the animals you studied.