

planet earth

as you've never seen it before



Dear Educator,

We invite you to take your students on an amazing worldwide adventure that is sure to ignite a lifelong passion for the Earth and its environment. The activities in this guide are based on one of the most breathtaking and comprehensive portrayals of our planet ever produced—the DVD series, **Planet Earth**.

With Earth Day on the horizon (April 22), and as our society eagerly embraces environmental vigilance, tools for exploring and appreciating the Earth are increasingly important. This stunning, 11-part BBC documentary series, from the makers of *The Blue Planet*, took five years to create, with over 2,000 days in the field, using 40 cameramen filming across 200 locations, resulting in the ultimate portrait of our planet and its astonishing diversity of wildlife.

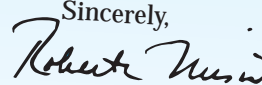
Planet Earth allows viewers to witness the daily struggle for survival in Earth's most challenging habitats—from the ocean's sunless depths to the glacier-locked peaks of the world's mightiest mountains. Shot in high definition, **Planet Earth** captures never-before-seen action in unimaginable scale, as well as intimate moments with our planet's best-loved, wildest and most elusive creatures.

Available wherever DVDs are sold beginning April 24, **Planet Earth** will also be broadcast every Sunday on the **Discovery Channel** beginning March 25, culminating in a marathon broadcast of all 11 episodes on Earth Day.

Young Minds Inspired (YMI) and BBC Video are proud to provide you with this **Planet Earth** teacher's guide. You may use the standards-based materials in this guide whether or not your students have seen the series. The hands-on activities engage students in the study of Earth science, geography, ecology and animal behavior, and encourage them to develop research, critical thinking and communications skills.

Please share these materials with other teachers in your school. Although the materials are copyrighted, you may make copies for educational purposes. Please fill out and return the enclosed reply card. We welcome your comments and suggestions.

Sincerely,



Roberta Nusim

Publisher and former teacher



Spectacled Cayman (a relative of the crocodile)

Activity One The Amazing Earth

Materials: One activity sheet per student, resource materials

Key Concepts/Skills: Habitats, survival adaptations, library and Internet research, critical thinking, geography

Part A

Begin by discussing what makes a habitat and have students name different types of habitats. Select one or two of the students' ideas and brainstorm the characteristics that define that habitat. Explain to students that in this activity they will be identifying the different habitats found in different areas of the Earth.

Planet Earth explores ten habitats:

- **Mountains**
High elevation areas ranging from several hundred to tens of thousands of feet above sea level. Mountain temperatures and conditions are more extreme with higher elevations.
- **Fresh Water**
Rivers, streams, lakes, and ponds are some of Earth's fresh-water habitats where food sources can be abundant. Seasonal adaptations are common in fresh-water habitats, which can be affected by snow melt and seasonal rains.
- **Caves**
A habitat devoid of sunlight, caves are home to highly specialized creatures such as eyeless fish and blind reptiles.
- **Deserts**
A parched habitat in which creatures live with little water. Deserts can be blistering hot or, like the Gobi Desert in Mongolia, bitterly cold, but all deserts typically have extreme temperature changes from day to night.
- **Ice Worlds**
Antarctica and the Arctic Circle are perhaps the harshest environments on planet Earth, with months of darkness,

brutally cold temperatures, and virtually no vegetation.

- **Great Plains**
The Great Plains are grasslands where temperatures change seasonally, and where plant and animal life are abundant.
- **Jungles**
Dense and rain-drenched, jungles generate much of planet Earth's oxygen and are home to an extraordinary number of plant and animal species.
- **Shallow Seas**
Home to the majority of sea life, planet Earth's shallow seas stretch for hundreds of miles out into the oceans, but are rarely more than 60 feet deep.
- **Seasonal Forests**
Evergreen and deciduous trees grow primarily in temperate zones, though the Taiga forest on the edge of the Arctic Circle contains one-third of all trees on planet Earth.
- **Ocean Deep**
Denizens of the ocean's sunless depths undertake extreme adaptations and are experts at conserving energy.

Part B

Once students have completed the matching activity in Part A, they can check their answers at the bottom of the sheet. Direct students to bring the sheet home to see what their parent or caregiver knows about habitats. Have them return the sheet to class to conduct graphing activities.

Extension Activity

Where do we find each habitat? Direct students to find each location from Column 1 on a map and mark it with a pin or a small sticky note. What do they notice about where each habitat is located? Do they see any pattern in the latitude or longitude of certain habitats? Where do they think they might find other examples of each habitat? Have students locate at least one additional example of each habitat, and mark it on the map.

Program Components

1. This teacher's resource guide
2. Three reproducible activity sheets
3. A teacher response card

Program Objectives

- To acquaint students with the amazing variety of habitats and creatures on planet Earth.
- To inspire learning about protecting diverse and fragile environments.
- To stimulate interest in protecting animals that are endangered or threatened.

Target Audience

This program has been designed for students in grades 6-8. Activities can be tailored to the interests and abilities of your students.

How To Use this Guide

- Review the accompanying materials and schedule them into your classroom lessons.
- Use the extension activities to stimulate further interest and discussion.
- It is not necessary to see **Planet Earth** to complete the activities, but viewing the series will enhance the learning experience.

National Science Standards Grades 6-8

Activity 1— The Amazing Earth	Structure of the Earth system
Activity 2— Be Adaptable	Diversity and adaptations of organisms
Activity 3— Save Planet Earth	Populations and ecosystems



Snow geese

Activity Two Be Adaptable

Materials: One activity sheet per student, library and Internet resources, map, tacks or sticky notes, magnifying glass, tweezers, plastic cups, tray or box to hold the cups, paper and pencil

Key Concepts/Skills: Habitats, adaptations, geography, scientific process, conservation, critical thinking, language arts, persuasive writing, public speaking

Part A

In this part of the activity, students describe how specific animals have adapted to their



Elephant swimming

habitat, then choose a third habitat on their own and describe how an animal that lives there has adapted. Have students work individually or in small groups, using online resources to complete the table.

Answers:

Texas cave salamander: Although it has no eyes after thousands of generations of isolation inside a cave, receptors in its skin detect minute movements in the water from its prey.

Kangaroo: To avoid heatstroke, kangaroos take shelter under the meager shade of a tree. To further cool themselves, they lick saliva onto a special area of their forearms where blood vessels are close to the skin. As the saliva evaporates, their blood is cooled.

Student answers for Row 3 will vary.

Part B

Explain that every place that supports life on Earth is a habitat, no matter whether the life found there is microscopic or immense. In this part of the activity, students survey a microhabitat close to home, following the detailed directions on the activity sheet to create their own mini-documentary.

Extension Activity

Ask students to identify a person or organization that may have the power to have an effect on an animal's habitat (e.g., developer, company president, town official). Have them write a letter to this person explaining their concern.

Activity Three Save Planet Earth

Materials: Library and Internet resources, paper and pen or word processing program, binding materials (presentation folder, brass fasteners or staples)

Key Concepts/Skills: Habitats, environmentalism, civics, public speaking, presentation skills, publishing

Part A

Explain to students that each of the habitats they have learned about is



Bird of Paradise



Onyx herd

changing— food sources may multiply or dwindle, climatic patterns can shift, habitat areas can grow or decrease. In many cases, such change can threaten a species' existence. Have students select a species in peril—possibly the Amur leopard or the polar bear—from those featured in **Planet Earth** or from students' own research.

They should then use classroom, library or Internet resources to complete the activity sheet. Bind the sheets together as a **Planet Earth** Endangered Species Book.

Part B

Ask students to think of ideas to help save animals in danger. They might raise money and collect contributions to send to a recognized environmental organization, or create a newsletter about endangered species.

Then, plan an Endangered Species Fair, sharing what students have learned with the entire school community and perhaps your broader local community. Create advertisements and prepare displays. Students should design a poster or other display using the information from Part A, or create Powerpoint presentations, iMovies or other forms of multimedia.

Extension Activity

Create a class website detailing the plight of endangered animals and how people can help. Have students share their ideas on the website and the information from all three **Planet Earth** activities.

Resources

Planet Earth DVD Set
www.planet-earth.com
www.bbcamericashop.com
www.fws.gov/endangered
www.kidsplanet.org/factsheets/map.html
www.worldwildlife.org/endangered/
[www.ymiteacher.com](http://www.yмитеacher.com)



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BBC VIDEO



90 Crown Street, New Haven, CT 06510



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DATED MATERIAL



Activity One

The Amazing Earth

Part A

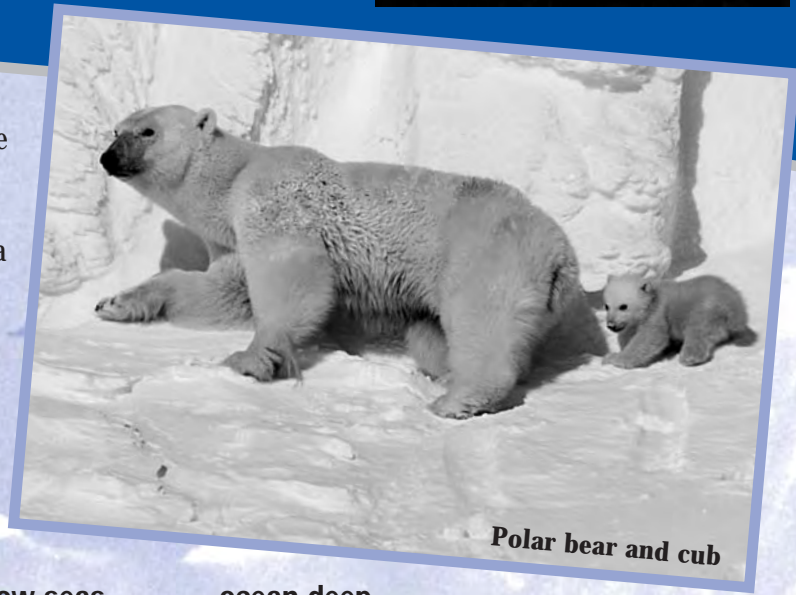
Earth is a planet of stunning natural beauty. From the towering peaks of Nepal, to the lush green of the Amazon valley, to the dry-sculpted crescents of the Sahara, to the shining polar icecaps, our planet contains a diverse and amazing variety of habitats. And you can explore all these habitats in the new DVD series **Planet Earth**, coming to stores on April 24.

To get ready for your adventure, take this quick tour of the habitats featured in **Planet Earth**. First, look at the locations listed in the first column below. Then decide which of these ten habitats you would find in those locations:

- | | | | | |
|-----------|--------------|-------------|------------------|------------|
| cave | ice worlds | jungles | shallow seas | ocean deep |
| mountains | great plains | fresh water | seasonal forests | deserts |

Write the name of the correct habitat for each set of locations in column three.

Locations	Parent Answer	Habitat—Your answer
Simien Mountains; Rockies; Andes; Alps		
Lake Baikal; Colorado River; Nile River; Angel Falls		
Lechuguilla; Cave of Swallows		
Gobi; Atacama; Death Valley		
Antarctica; the Arctic		
Kansas; Tibetan Plateau; Northern India		
Ngogo forest; New Guinea		
Reefs of Indonesia; Great Barrier Reef		
Taiga forest; Eastern Russia		
Atlantic and Pacific		



Polar bear and cub

Part B

How well does your parent or caregiver know planet Earth? Fold back your answers and ask him or her to match each set of locations with its correct habitat. Which of you knows more about our amazing Earth?

After both you and an adult have recorded your answers, check them below.

Did you know?

The floor of the ocean is lined with a mountain range that continues unbroken for 45,000 miles! Hot vents erupt from the mountains spewing heat from Earth's molten core, giving life to the black, barren sea floor.

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Answer Key: Top to bottom: mountains, fresh water, jungles, great plains, ice worlds, shallow seas, seasonal forests, oceans deep

Travel to some of the most amazing places on Earth with the **Planet Earth** DVD set available at your local retail outlet beginning April 24, 2007.

Activity Two

Be Adaptable



Part A

In the DVD series **Planet Earth**, you can see the many amazing ways animals have adapted to survive in their habitats—from cave swiftlets who build nests out of saliva to guanacos who survive by licking dew off cactus spines.

Consider some of the animals below. How do you think they adapt? In the first two rows, you are given a habitat, a specific location where that habitat is found, and the name of an animal that lives there. You fill in the adaptation. (If you can't figure out what it would take for an animal to survive in such an environment, use online resources to learn more about the animals listed.)

In the third row, it's all up to you. Choose any habitat, tell where you can find that habitat on planet Earth, name an animal that lives there, and describe how the animal has adapted to its environment. When you have finished, share your chart with your classmates.



Fennec fox

Habitat	Location	Animal	Adaptation
Caves	Edwards Aquifer, Texas	Texas Salamander	
Deserts	Australia	Kangaroo	

Part B

Habitats are everywhere on planet Earth. Find out for yourself by exploring a microhabitat where you live. Here's a chance to create your own science documentary about the diversity of life in your part of the planet. Just follow the steps below.

You will need: a magnifying glass, tweezers, plastic cups, tray or box to hold the cups, notebook and pencil

1. Make a three-column table on a blank piece of paper. Label the columns: Drawing, Name, and Description. Make the table large enough that you can record your observation in the appropriate areas.
2. Select your habitat – for example, a backyard, pond edge, beach, tidal marsh, even the grass bordering a sidewalk – and record the location at the top of your table.
3. Measure off one square yard of the habitat and mark the area with string, rocks or sticks.
4. Within your square yard, measure square-foot sections and concentrate on one at a time.
5. Using your magnifying glass and tweezers, carefully

comb back and forth through each square-foot section, stopping to sketch, name and describe, if possible, each life form you encounter.

6. Continue until you have surveyed each square-foot section.
7. Compile your findings in a documentary style report, either in written form, Powerpoint, movie or multimedia format. Then present your documentary to your class.

Did you know?

Emperor penguin males incubate the egg by keeping it in a pouch above their feet. The incubation period lasts through the winter when temperatures can reach 60° F below zero and the sun does not shine for four months. How's that for a good father!

Activity Three

Save Planet Earth



Snow leopard

Part A

The photographers who created the DVD series **Planet Earth** show us some of the oddest creatures on Earth—from the deep-sea octopus who flies with wings, to the parasitic fungi who infiltrate an insect host, feed on it, and then burst out of its body.

Unfortunately, a staggering number of species on planet Earth are on the Endangered Species List, and many more are in danger of joining the list. Select one, either from the DVD series **Planet Earth** or from your own research. Fill in the chart below with the relevant information and combine your chart with those of your classmates to create an Endangered Species Book. Add photographs, illustrations or other artwork to the book and make it available for other students in your school to read.

Animal
Status
Why endangered
What can be done
1.
2.
3.
(Photos, illustrations)

Part B.

Spread the word! Humans can help protect endangered species, but only if they know about the problem. It's your job to educate your peers and your community. Write a list of three things you can do to save some of the animals that are in danger.

1. _____
2. _____
3. _____

Now get together with your classmates and share what you have learned by holding an Endangered Species Fair. Create displays based on your research in Part A, and posters that tell everyone your ideas for helping our endangered species.

Did you know?

In the United States, 735 species of plants and 496 species of animals are listed as threatened or endangered.