BORN TO BE FREE

IMAX

BORN TO BE WILD 3D

Exclusively in IMAX Theatres APRIL 8

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75TH NATIONAL WILDLIFE FEDERATION

GO WILD! Guide for Educators

IMAX BORN TO BE WILD 3D

Born to be Wild 3D is an inspiring story of love, dedication and the remarkable bond between humans and animals. This film documents orphaned orangutans and elephants and the extraordinary people who rescue and raise them—saving endangered species one life at a time. Stunningly captured in IMAX 3D, ***Born to be Wild 3D*** is a heartwarming adventure transporting moviegoers into the lush rainforests of Borneo with world-renowned primatologist Dr. Biruté Mary Galdikas, and across the rugged Kenyan savannah with celebrated elephant authority Dame Daphne Sheldrick, as they and their teams rescue, rehabilitate and return these incredible animals back to the wild.

Narrated by Academy-Award® winner Morgan Freeman, ***Born to be Wild 3D*** is directed by David Lickley and written and produced by Drew Fellman. This Warner Bros. film is produced by IMAX Filmed Entertainment and distributed by IMAX Corporation and Warner Bros. Pictures and will open April 8, 2011 exclusively in IMAX theatres.

About National Wildlife Federation

National Wildlife Federation inspires Americans to protect wildlife for our children's future. For more than 70 years, NWF has been connecting people of all ages with nature through award-winning education programs and resources, including the children's magazines Wild Animal Baby®, Your Big Backyard®, and Ranger Rick®.

National Wildlife Federation is proud to be the education partner for ***Born to be Wild 3D***.

About this Guide:

This guide, designed for use with the film **Born to be Wild 3D**, *will help you explore the film's themes in an educational setting. The activities are designed for grades 3-5, with extensions for younger and older children. These activities meet national standards for English/Language Arts, Science, Social Studies, and Visual Arts.*

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Activity One:

Habitat–What's That?

Subjects: Biology, Natural Science, Environmental Science

Learning Objectives:

- Define the concepts of habitat, ecosystems, and limiting factors
- Apply these concepts to orangutans and African elephants

Materials:

- Copies of the work sheet
- Pencils

What you do:

1. Ask your students "Habitat—what's that?" Explain that habitat is the place where a plant or animal lives. Without habitat, living things can't survive. With healthy habitat, they'll thrive. For animals, habitat has four parts: food, water, cover, and places to raise young.
2. Review or introduce the terms habitat, ecosystem, and limiting factor (see "terms to know" on page 4).
3. Hand out copies of the worksheet on the next page. Have students choose a species and fill in the blanks as they learn about the animal's habitat. What does the species need to live and raise its young? What does it eat? What is the climate to which it is adapted?
4. Explain that all over the world, habitat for wildlife is shrinking as the human population grows. But here's the good news: People are helping by bringing habitat back one yard, schoolyard, garden, or park at a time.

Useful Links:

The Schoolyard Habitat® project found at the National Wildlife Federation's website, www.nwf.org/schoolyard, is a great opportunity for students to spearhead a wildlife habitat effort for the entire school community. The result will be a wonderful outdoor classroom where students may practice many cognitive skills by studying, researching, and documenting wildlife in their area.

IMAX BORN TO BE WILD 3D

Name: _____

Date: _____

HABITAT–WHAT'S THAT?

Student activity page

Help find the right habitat for your favorite animal from the film. Fill in the blanks as you learn about its habitat. What does it need to live and raise its young? What does it eat? What is the climate to which it is adapted?

1. Species: _____
2. Describe the region or ecosystem where it is found: _____

_____

3. Habitat needs for this animal:

Food:	Water:	Cover:	Places to Raise Young:
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

4. Other plants and animals that might live nearby: _____

_____

_____

5. What are the limiting factors for your species that might keep it from surviving or raising its young?

_____

_____

Now that you know more about what it takes to provide wildlife habitat, go to www.nwf.org/habitat and design your own schoolyard or backyard habitat project.

Terms to know

Habitat – A place that provides a species with everything it needs for survival.

The four requirements of habitat are 1) food, 2) water, 3) cover and 4) space – including places to raise young.

Cover – Shelter to hide an animal from predators or to protect an animal from cold, hot, wet, or dry conditions.

Limiting factor – Something required by an animal to survive. If it is not present, the animal cannot survive or reproduce. For example, African elephants need a lot of undeveloped space to live in herds and raise their young.

Activity Two:

Awesome Adaptations

Subjects: Biology, Natural Science, Environmental Science

Learning Objectives:

- Define the concept of adaptation
- Demonstrate understanding of how a species adapts to its habitat as a means of survival
- Develop critical thinking skills

Materials:

- Paper and pencils

An adaptation is a trait that helps an animal survive in its habitat. Animal species change over time to better fit their environments. Plant or animal species subjected to a major change in their environment over a long period (years of flooding, the appearance of a new predator, etc.) will do one of three things: leave, change, or die. If a species changes in any way over time to better fit into its environment, it has adapted to it. Adaption involves changes that are passed on to the next generation, not just changes to one animal.

What you do:

Explain the concept of animal adaptations using the description above. Then start a class discussion by asking students if they can give examples. Encourage them to consider a wide variety of animals, including those from the film as well as animals they have observed directly or learned about previously.

Make a list of students' ideas on the board. Then ask students to place the examples in categories. Start with the two main types of adaptations: physical and behavioral. If time allows, you can then come up with other categories such as adaptations that help an animal get food and adaptations that protect an animal from predators. Ask students to note similarities and differences in adaptations across the animal kingdom. Specifically ask students to list orangutan and African elephant adaptations. For example, orangutans spend almost all day in the tree canopy. Ask students how orangutans have adapted to life in the trees.

Adaptations:

For younger students. To help students remember the concept of adaptation take them outside for these fun hands-on activities:

Elephants use their trunks to breathe, sniff, drink, shower, and pick things up.

Try this! Put your arms, elbows and fingers together to form a trunk. Use the trunk to push a basket along the floor or pick up various items.

A male orangutan's arms can stretch 8 feet! Orangutans brachiate (BRAY-kee-ayt). This means they use their arms to move from branch to branch.

Try this! Go to a playground and see how long you can swing from your arms on the playground equipment.

Useful Links:

For lots more about orangutans and African elephants, go to the official film website: www.imax.com/borntobewild

Activity Three :

Endangered Species: Wild and Rare

Subjects: Biology, Natural Science, Environmental Science

Learning Objectives:

- Explore and expand upon themes from the film
- Conduct research and demonstrate an understanding of endangered and threatened status for species
- Define habitat restoration
- Explore careers in science and conservation

What you do:

Start a class discussion about endangered and threatened species. Review the concepts of habitat and adaptations from the previous activities and draw connections with the reasons why populations of certain species have become dangerously low.

Discuss why orangutans and African elephants are endangered. Orangutans lose their homes when rainforests are destroyed for wood and to make room for oil-palm plantations. Elephants are also losing their habitat. But the major reason African elephants are in trouble is that humans illegally hunt or poach them them to sell their ivory tusks.

Then discuss the extraordinary people in the film who rescue orphaned baby orangutans and African elephants, helping to reverse the trend of population decline. If possible, you can show webcasts and interviews with Dr. Biruté Mary Galdikas and Dame Daphne M. Sheldrick in the classroom (www.imax.com/borntobewild).

Have students research other species whose populations have increased because of help from people. Instruct students to identify the heroes and the species they are saving. They can work alone or in teams to create an outline or notes.

Then stage a role play in class using what students have learned. Each student can play the role of a reporter, moderator, or wildlife hero as you conduct interviews or press conferences about the women in the film and other people who have worked hard to save wildlife.

Here are a few sample questions that student reporters can ask of those representing wildlife heroes:

- What endangered species have you worked with?
- Why did the animal become endangered?
- Where did you do your work?
- When did you get started?
- What can people do to support your work and help save species?

How to Help

Conclude by discussing ways that we can all help save elephants, orangutans, and other endangered animals. Here are some ideas:

- Support ivory bans. Avoid all products made from ivory or any other part of an elephant.
- Avoid palm oil. Read the ingredients on food, soap, and other products and choose things made without palm oil.
- Buy wood products with an FSC label. FSC stands for "Forest Stewardship Council" and shows that wood comes from forests that are managed well.
- Learn more about endangered animals and share what you learn with others.
- Have a fundraiser to raise money for organizations that help these animals.
- Support laws that protect all endangered species.

Adaptation:

For younger students. Have students choose an endangered species or a species that is doing better now than it once was because of people's help. (For example, American bison, bald eagle, wood duck, koala.) Then tell them they will draw a picture of their species in its habitat. Frame the picture with a piece of colored construction paper and have them write the names of their animals (or plants) in bold letters, then hang the portraits on the wall.

For older students: Have them create posters or write blogs about endangered species and what people can do to help.

Useful Links:

National Wildlife Federation's **Trees for the 21st Century** is a unique educational and tree-planting program for children ages 6 to 18, involving science-based learning, tree-planting, and ongoing stewardship activities. The Trees for the 21st Century initiative aims to teach children about the value of the environment; to expand the world inventory of trees to protect and improve natural resources; and to help children value long-term stewardship of trees, Earth's "perfect organic machines." www.nwf.org/Get-Outside/Be-Out-There/Educators/Trees-for-the-21st-Century.aspx

See "Take Action" (p.14) in this guide for more project ideas and useful links.

Activity Four :

Baby Mammals are Amazing!

Subjects: Biology, Natural Science, Environmental Science, Social Studies

Learning Objectives:

- Define the characteristics of mammals
- Apply these concepts to orangutans and African elephants
- Discuss some of the ways milk differs from one mammal species to another

Materials:

- Photos of a variety of animals (some mammals and some not)
- Optional: photos or examples of a variety of dairy products

What you do:

Review basic mammal characteristics with your students.

- All mammals are warm blooded.
- Almost all mammals give birth to live young.
- Mammals have hair or fur on their bodies.
- Mammals are vertebrates.
- All mammals have lungs to breathe air.
- Mammals feed milk to their babies.

Show students photos of a variety of animals, some mammals and some not. Ask students to use the list of mammal characteristics to explain whether each photo shows a mammal or some other kind of animal.

Then ask students to connect these characteristics with their observations of orangutans and elephants in the film. Can they describe how each characteristic applies to these particular species?

In the film you meet Dr. Dame Daphne Sheldrick, who is raising orphaned elephants (and other endangered animals) and returning them to the wild. She has made many important contributions to conservation and

science. She created a special milk that helps orphaned elephants live. Before she figured out the right formula, baby elephants couldn't survive without their mothers' milk.

Milk is amazing! Explain that milk is special "baby food" that mammals produce. Even though all mammals produce milk, the nutritional content of milk varies from one species to another. Besides containing fat and protein, the milk of different mammals also contains different amounts of vitamins, minerals, carbohydrates, and water. (Water is the main ingredient in all mammals' milk. For example, cow milk is about 87% water.) Each kind of mammal mother produces the kind of milk that is best suited to the needs of her young.

Discuss some of the ways milk differs from one mammal species to another. For example, the milk of seals and other marine mammals contains very high amounts of fat, which helps the babies quickly put on a layer of blubber to stay warm in the water.

Ask students to name several mammals from which people get milk. Which mammals' milk is sold in most stores? Next ask students if they can name some foods that are made from milk (such as butter, cheese, cream, ice cream, and yogurt).

Explain that most of the milk products we're used to eating are made from cow milk, but some students may be familiar with products made from the milk of other species. In parts of Europe, for example, goats are the main milk producers. (Ask students if any of them have ever tasted goat milk. Can they describe what it tasted like?) In some parts of the Middle East, sheep milk is popular, and in many desert areas camel milk is a mainstay. People drink water buffalo milk in Indonesia, and in Lapland reindeer milk is a big part of some people's diets. (You might want to bring in some goat milk cheese and goat milk for students to sample. These are available at most health food stores.)

Adaptations:

After talking about milk, visit a local dairy to see how cows (or goats) are milked and how the milk is collected and sorted. Or visit a grocery store and find milk products from different mammals.

Useful Links:

Visit http://www.nwf.org/Wildlife/Wildlife-Library/Mammals.aspx for more information about mammals.

Activity Five :

Writers Corner

Subjects: Language Arts, Biology, Natural Science, Environmental Science

Keep an Observation Journal

Learning Objectives:

- Develop keen observation skills
- Differentiate between factual observations and opinions
- Explain why careful observation and record-keeping are important for scientists

Materials:

- Notebook
- Pencil or pen

What you do:

The two scientists in *Born to be Wild 3D*, Dr. Biruté Mary Galdikas and Dame Daphne M. Sheldrick, have made a big difference in the lives of many animals. In order to help orangutans and elephants, they first had to understand them and their needs. To understand them, they had to observe them carefully for a long time.

Give students an opportunity to develop their own skills as scientific observers and reporters. Have them choose an animal they can easily observe in the wild (such as a bird or a squirrel) or even a family pet in your own home. Ask them to keep a notebook where they write down what they notice and what they think their observations mean.

Have them divide each page into two columns. Label the first column "Observations" and the second column "Speculations". In the observations column, they should record exactly what they see happening – just the facts without any opinions. For example:

- What is the animal doing?
- Where does it go and in what places does it stop?
- How does the animal interact with others of its kind?

Then, in the Speculations column, they can record their ideas and questions about the reasons behind the behavior they observed. For example:

- Why does the animal choose to rest in certain places?
- Does it seem to prefer certain foods over others?
- When it encounters other animals, what might its behavior indicate?

After students have had time to work on their journals, ask students to share some of their observations with the group. Discuss the value of both factual observations and the ideas and questions that result from them for advancing scientific knowledge.

Make a Birth Announcement

Learning Objectives:

- Compare and contrast the life cycles and parenting behaviors of different mammals
- Understand the roles of season and habitat for survival of young

Materials:

- Paper, pencils and other art supplies

What you do:

Wouldn't it be exciting to receive birth announcements for orangutans, African elephants or other babies of endangered species? Tell students that they are going to make birth announcements and then share them with the rest of the group.

Explain each part of the announcement that students will fill in, and tell them they will have time to research the information they will need.

In the first blank, they should fill in the name of the mammal they have chosen. For example, for an African elephant, the student might write "Mrs. Eloise Elephant" in the first blank. Point out that most mammal fathers don't play a role in raising the young. But some do, so students should take this into consideration when writing their announcements.

The announcements should also reflect the average number of young each animal has at one time.

Tell students that under the heading "Time of Birth," they can write either a specific month or a general season. Their decision should be based on the information they discover in their research.

You might want to lead a discussion about why mammals are born at certain times. For example, ask students why mammals that live in areas where there are four seasons usually give birth during the spring, and why mammals that live in arid areas usually give birth during the rainy season. (More food is available in spring or a rainy season, so young mammals and other animals born at these times have a better chance of surviving. Also the mothers have more food to eat, which helps them produce a steady flow of milk.)

Now explain that, under "Place of Birth," each student should write the name of his or her mammal's habitat or special home. For example, for a whitetail deer one might write "the forest."

Finally, tell students that when they draw pictures of the animals they should keep in mind that many adult male and female mammals look different from one another.

When students have finished filling in their announcements and drawing pictures of the babies and adults, have them fold the announcements over and draw more pictures on the outside. Then have them present their announcements to the rest of the group. You could also make a gallery of the announcements or have students bring in copies of their own baby photos or birth announcements for comparison.

ACTIVITY SIX :
TAKE ACTION

EXPRESS YOURSELF. WRITE A LETTER

Writing a letter lets you tell other people about something you think is important. You can write a letter to a local business, a newspaper or "elected official" - such as city council member, mayor, or state or federal representative, to let them know how you feel and what you think needs to be done. This is called a persuasive letter. Persuade means "to try to get someone to do something by helping them to understand."

1) **RETURN ADDRESS** - Write your address here.

2) **TODAY'S DATE**

3) **INSIDE ADDRESS** - Write the name, title and address of the person to whom you are writing the letter here.

4) **THE GREETING** - Write "Dear," followed by the person's title, last name and a colon (:) For example, you might write "Dear Senator Rodriguez:". This part of the letter is also called the Salutation.

5) **THE BODY** - This is where you write what you want the person to know. Write clearly and simply.

6) **THE CLOSING** This is the way you end or close your letter. Here, use a comma (,). "Sincerely" is the word you can use to end your letter.

7) **SIGNATURE** - Sign your name! You may also choose to print your name underneath your signature and include your age.

8) **THE ENVELOPE** - Address the envelope as shown. Be sure to include the right ZIP code!

9) **POSTAGE** - Use a stamp for the right amount. Put it on the upper right corner of the envelope. You're ready to send your letter!

WRITE FOR WILDLIFE!

Want to write to your lawmakers asking them to protect wildlife? Go to the National Wildlife Federation's "Action Headquarters": www.nwf.org/action. Here you can find out about important laws such as the Endangered Species Act (ESA) and bills to help wildlife and save their natural habitats. Research the issues and write a letter to your local representatives or members of Congress. Let them know how you think they should vote on these bills and why!

Activity Seven:

Did you know? Fact Sheet

- A male African elephant's tusks can be 8 feet long!
- A male orangutan's arms can stretch 8 feet from tip to tip!
- An adult African elephant poops about 200 pounds of manure a day.
- An adult male orangutan weighs about 200 pounds.
- Elephants use their trunks to breathe, sniff, drink, shower and pick things up.
- Orangutans brachiate (BRAY-kee-ayt). This means they use their arms to swing from branch to branch for hours.
- Orangutans and elephants are both endangered.
- Most scientists place elephants and orangutans near the top of the list of the world's smartest animals.

Read the list below and look up more facts about these amazing animals. Then make a chart or diagram showing how orangutans and elephants are similar and how they are different.

More About Orangutans

- Orangutans live only on the Indonesian island of Sumatra and the island Borneo, which is shared by Indonesia, Malaysia, and Brunei.
- In Malay orang means "person" and utan is derived from hutan, which means "forest." So orangutan literally means "person of the forest."
- If a young orangutan is following its mother and comes to a gap between trees that is too wide for it to cross, Mom comes to the rescue! She straddles the gap, making a bridge out of her body. The baby then scrambles across her.
- Sometimes orangutans wear big leaves as rain hats.

- Male orangutans are strong—about seven times stronger than humans.
- Orangutans can crush the hard shells of coconuts with their mighty jaws.

More about African Elephants

- African elephants are larger than Asian elephants.
- Males stand 12 feet tall at the shoulder and weigh 12,000 pounds, while females weigh between 8,000 and 11,000 pounds. (That's more than a full mini-van!)
- Elephants have four molars that weigh approximately 11 pounds each. Each molar is replaced six times throughout an elephant's life.
- Their tusks can weigh from 50 to 100 pounds.
- African elephants are very strong and can lift more than a ton with their trunks.
- The African Bush Elephant and the African Forest Elephant are two different species.
- They can hear other elephants several miles away.
- African elephants have amazing memories and those raised by humans nearly always remember the people who raised them.

National Education Standards

Activity One
HABITAT – WHAT'S THAT?

Science: NSES

Grades K-4 Standard C: Life Science

Characteristics of organisms, Organisms and environments

Grades 5-8 Standard C: Life Science

Populations and ecosystems

Grades K-8: Standard A: Science as inquiry

Abilities necessary to do scientific inquiry

English/Language Arts: NCTE/IRA

Standard 7: Evaluating data

Standard 8: Developing research skills

Activity Two
AWESOME ADAPTATIONS

Science: NSES

Grades K-4 Standard C: Life Science

Characteristics of organisms, Organisms and environments

Grades 5-8 Standard C: Life Science

Regulation and behavior, Diversity and adaptations, Populations and ecosystems

English/Language Arts: NCTE/IRA

Standard 7: Evaluating data

Standard 8: Developing research skills

Activity Three
ENDANGERED SPECIES WILD AND RARE

Grades K-4 Standard C: Life Science

Characteristics of organisms, Life cycles of organisms, Organisms and the environment

Grades 5-8 Standard C: Life Science

Diversity and adaptations, Populations and ecosystems

Grades K-8: Standard A: Science as inquiry

Abilities necessary to do scientific inquiry

English/Language Arts: NCTE/IRA

Standard 1: Reading for perspective

Standard 4: Communications skills

Standard 5: Communication strategies

Social Studies: NCSS

Standard IV: Individual development and identity

Activity Four
BABY MAMMALS ARE AMAZING

English/Language Arts: NCTE/IRA

Grades K-4 Standard C: Life Science

Characteristics of organisms, Life cycles of organisms, Organisms and the environment

Grades 5-8 Standard C: Life Science

Regulation and behavior, Diversity and adaptations, Populations and ecosystems

English/Language Arts: NCTE/IRA

Standard 4: Communication skills

Activity Five
WRITER'S CORNER

Grades K-4 Standard C: Life Science

Characteristics of organisms, Life cycles of organisms, Organisms and the environment

Grades 5-8 Standard C: Life Science

Regulation and behavior, Diversity and adaptations, Populations and ecosystems

Grades K-8: Standard A: Science as inquiry

Abilities necessary to do scientific inquiry

English/Language Arts: NCTE/IRA

Standard 1: Reading for perspective

Standard 4: Communication skills

Standard 5: Communication strategies

Standard 6: Applying knowledge

Activity Six
TAKE ACTION

English/Language Arts: NCTE/IRA

Standard 4: Communication skills

Standard 5: Communication strategies

Standard 6: Applying knowledge

Standard 7: Conducting research

Social Studies: NCSS

Standard X: Civic Ideals and practices

Activity Seven
FACT SHEET: DID YOU KNOW?

Science: NSES

Grades K-4 Standard C: Life Science

Characteristics of organisms, Organisms and environments