Title: Create A New Animal

Grade Level: 3rd-5th

Subject: Biology

Time: 60- 90 minutes

Objective: Students will better understand physical adaptations of certain animals, and how those adaptations increase the animal's chances of survival.

Illinois State Standards and Objectives:

12.A.2b Categorize features as either inherited or learned.
12.A.3c Compare and contrast how different forms and structures reflect different functions.
12.B.2a Describe relationships among various organisms in their environments. (e.g. predator/prey, parasite/host, food chains, and food webs.
12.B.2b Identify physical features of plants and animals that help them live in different environments.
12.B.3a Identify and classify biotic and abiotic factors in an environment that affect population density, habitat and placement of organisms in an energy pyramid.
12.B.3b Compare and assess features of organisms for their adaptive, competitive, and survival potential

Method:

Begin a classroom discussion about how animals use physical characteristics and adaptations to their advantage. Define biotic and abiotic characteristics, learned and inherited features, and how features help increase an animal's chance of survival.

Next, use the Rainforest Library to have students research four different animals found in the rainforest. Have students complete the Create A New Animal Worksheet, and use certain traits of animals found in the rainforest (or elsewhere, if needed) to create a new animal. The new animal must use the best physical characteristics of the researched animals to its advantage in speed/mobility, camouflage, food collection, and natural defenses. Also have students brainstorm other animals that the new animal could create a symbiotic relationship with.

Create A New Animal!

Thousands of different animals make their home in the rainforest. Each animal has a unique set of features that allow it to survive. Physical features of animals often help the animal find food, reproduce, move, or keep from becoming other animals' food. Research four animals found in the Rainforest Library and describe their unique features.

1. The animals I chose to research are:

_____ _____

_____ _____

2. These animals live (be specific, not just "rainforest!")

_____ _____

_____ _____

3. These animals belong to this class (mammal, reptile, bird, etc.)

_____ _____

_____ _____

3. These animals eat:

_____ _____

_____ _____

3. A characteristic of one animal that helps it find food is:

_____

_____

4. A feature that helps an animal move well is:

_____

_____

5. One of the animals uses camouflage by:

_____

_____

6. A natural defense that one of the animals uses well is:

_____

_____

Now that we know a little bit about four specific animals, create a new animal using a combination of features. You'll have to know your animal well to complete the following.

The name of my animal is: _____

My animal belongs to this class._____

I know that this animal belongs to this class, because _____
_____

My animal lives in this habitat _____

One way my animal uses its habitat to its advantage is by
_____
_____

My animal eats _____

My animals collects its food from _____ by using this physical feature _____

My animal moves by using _____
_____

My animal protect itself from predators by using
_____
_____

One way my animal uses camouflage is by
_____
_____

Draw a picture of your animal on the back of this page. Make sure to label each physical feature you use, and what other animal that feature is borrowed from.

Title: Create a Critter Collage

Subject: Science

Grade Level: 3rd-5th

Time: 90 minutes

Objective: Students will create a display of animals found in the rainforest and be able to describe important details of that animal's habitat, features, characteristics, and adaptations. The students will have to group animals according to their class and define similarities and differences between animals of the same class.

Illinois State Standards and Objectives:

12.A.2b Categorize features as either inherited or learned.
12.A.3c Compare and contrast how different forms and structures reflect different functions.
12.B.2a Describe relationships among various organisms in their environments. (e.g. predator/prey, parasite/host, food chains, and food webs.
12.B.2b Identify physical features of plants and animals that help them live in different environments.
12.B.3a Identify and classify biotic and abiotic factors in an environment that affect population density, habitat and placement of organisms in an energy pyramid.
12.B.3b Compare and assess features of organisms for their adaptive, competitive, and survival potential.

Materials:

Printed pictures of various animals. (A stack of old National Geographic magazines is ideal)
Large pieces of paper
Glue
Scissors

Method:

Begin a classroom discussion on why scientists classify animals. Point out that most newly discovered animals can be classified because of similarities between physical features. Discuss how scientists agree on classifying animals:

- Kingdom (Animalia, or "animal")
- Phylum (Chordata, or "has a backbone")
- Class (Mammalia, or "has a backbone and nurses its young")
- Order (Rodentia, or "has a backbone, nurses its young, and has long, sharp front teeth)

- Family (Scuridae, or “has a backbone, nurses its young, has long, sharp front teeth, and has a bushy tail)
- Genus (*Tamiasciurus*, or “has a backbone, nurses its young, has long, sharp front teeth, has a bushy tail, and climbs trees)
- Species (*hudsonicus*, or “has a backbone, nurses its young, has long, sharp front teeth, has a bushy tail, and has brown fur on its back and white fur on its underparts)

Next have students look through pictures of different animals. Have them guess what class each animal belongs to. Have them compare four sets of animals from the same class. Have each student describe the similarities and differences found in each pair of animals.

Group each animal into their respective classes and create a classroom collage for each of the animal classes.

Title: Bird Feeding and Migration Observation

Subject: Science/ Mathematics

Grade Level: $2^{nd} – 7^{th}$

Time: 15 minutes per day for the length of the adventure (though can be done in less)

Objective: Students will better understand the concept of bird migration through building a bird house to observe and record data within a given experiment.

Illinois State Standards and Objectives:

11.A.2b Collect data for investigations using scientific process skills including observing, estimating and measuring.
11.A.3c Collect and record data accurately using consistent measuring and recording techniques and media.
11.A.3d Explain the existence of unexpected results in a data set.
11.A.3e Interpret and represent results of analysis to produce findings.
12.A.2a Describe simple life cycles of plants and animals and the similarities and differences in their offspring.
12.B.3b Compare and assess features of organisms for their adaptive, competitive, and survival potential
12.B.2a Describe relationships among various organisms in their environments. (e.g. predator/prey, parasite/host, food chains, and food webs.
12.B.2b Identify physical features of plants and animals that help them live in different environments.
10.A.2a Organize and display data using pictures, tallies, tables, charts, bar graphs, line graphs, line plots and stem-and-left graphs.
10.B.2b Collect, organize and display data using tables, charts, bar graphs and line graphs.

Materials

Pop bottle
Twigs
Bird Seed
Scissors
String
Pie Tin

Method:

Your class will build a bird feeder that can be observed from the classroom at regular intervals. Punch holes on either side of a plastic pop bottle, stick a twig all the way through with its ends sticking out for perches and poking more holes nearby for the birds to pull the seeds out. Then hang the bottle by tying a string around its neck. Put the pie

tin around the top of the pop bottle to keep squirrels or other animals out of the bird feeder.
Once the bird feeder has been hung, begin talking with students about migration. Ask students to list birds that live in your area. Research where these birds migrate to and when.
Use the following chart to record your observations, make predictions, and expand on students' previous knowledge of migration.

Lesson Extensions:
Try switching the bird seed to see if it attracts different species of birds.
Have students build a bird feeder that they can observe from home.
Partner with a school found at the end of a bird's migration and find out from their students what the birds' habits are during the time that they are away from your area.

Internet Resources:
National Wildlife Web Site for Bird Migration
http://www.nwf.org/backyardwildlifehabitat/flyright.cfm

Why Files look at Bird Migration
http://whyfiles.org/006migration/bird_strategy.html

Bird Activities
http://www.inhs.uiuc.edu/chf/pub/virtualbird/educational.html

Bird Feeder Observation Chart

Date/Time	Observations	Species of Bird Present

Notes:_____
_____
_____
_____
_____
_____

Title: Antonym Comparison of Animals and Me

Subject: Language Arts

Grade: 3rd -5th

Time: 45 minutes, plus research time

Objectives: Students will understand antonyms and how they're used for binary comparison by researching an animal and making connections to themselves..

Illinois State Standards and Objectives:

> **1.A.2a** Read and comprehend unfamiliar words using root words, synonyms, antonyms, word origins and derivations.
> **1.A.2b** Clarify word meaning using context clues and a variety of resources including glossaries, dictionaries, and thesauruses.

Materials

> Pictures of many different types of animal (you may use the photos on the Wilderness Classroom web site or provide your own)

Method:

Introduce what an antonym is, and what purpose antonyms serve in the English language.
As a large group develop a list of antonyms. A quick way to do this is to re-write newspaper headlines using antonyms.
Next, create a list of words that describe certain animals. Show the photo and have students use descriptive that describe the animal's appearance, behavior, habits, and habitats.
After you complete a list of descriptive words, have students generate antonyms for each part of the list.
Have students categorize the words as those that would describe the animal, themselves, or both.

Title: Critters in Your Own Backyard

Subject: Science

Grade: 3rd-5th

Time: 2 90-minute periods

Objective: Students will understand that many animals, or related animals, found in their own backyard also make their home in the rainforest.

Illinois State Standards and Objectives

12.A.2a Describe simple life cycles of plants and animals and the similarities and differences in their offspring.
12.A.2b Categorize features as either inherited or learned.
12.B.2a Describe relationships among various organisms in their environments. (e.g. predator/prey, parasite/host, food chains, and food webs.
12.B.2b Identify physical features of plants and animals that help them live in different environments.
12.B.3a Identify and classify biotic and abiotic factors in an environment that affect population density, habitat and placement of organisms in an energy pyramid.
12.B.3b Compare and assess features of organisms for their adaptive, competitive, and survival potential

Method:

Begin the lesson by asking students to list animals that are commonly seen around their backyards. There are more animals living in your area than you generally think!
Have students choose one of the animals found in your area and research a relative of the animal who lives in the rainforest. Below is list of common mammals and birds that can be compared. There are also loads of common insects.

North America	Tropical Rainforest
Raccoon	Cotamundi
Turkey Vulture	King Vulture
Mountain Lion	Puma
River Otter	Southern River Otter
Heron	Anhinga
White Egret	Cattle Egret
Bald Eagle	Harpy Eagle
Great Grey Owl	Spectacled Owl
Broad-Winged Hawk	Roadside Hawk
Scarlet Tanager	Blue-Grey Tanager
Little Brown Bat	Vampire Bat
White-Tailed Deer	Red Brocket Deer

Critters of Your Backyard

Many animals that live in your backyard have relatives living in the Peruvian rainforest. Your job is to investigate the similarities between the two animals. You must also recognize the aspects that make the animals different from one another.
Answer the questions below after researching both of your animals.

1. The animals I chose to research in my backyard is: _____

2. Before I started researching this animal I knew:

_____

_____

3. An animal that is similar in Peru is: _____

4. I want to learn this about the animal in Peru

_____

_____

_____

5. The scientific name for the animal in my backyard is

_____

6. The scientific name for the Peruvian animal is

_____

7. Both of these animals eat:

_____

_____

8. These animals have this in common (list three traits)

_____

_____

_____

9. Something that makes these animals different is:

_____

_____

Title: Amazon Food Chain

Subject: Biology

Grade Level: 4th-7th

Time: 2 50-minute periods

Objective: Students will understand the natural predator-prey relationships that exist inside of the rainforest. Students will also be able to place the animals and relationships into natural, sequential order.

Illinois State Goals and Standards:

12.A.2a Describe simple life cycles of plants and animals and the similarities and differences in their offspring.

12.B.2a Describe relationships among various organisms in their environments. (e.g. predator/prey, parasite/host, food chains, and food webs.

12.B.2b Identify physical features of plants and animals that help them live in different environments.

12.B.3b Compare and assess features of organisms for their adaptive, competitive, and survival potential.

Method:

Begin a discussion on predator-prey relationships by talking about what animals eat. Pick a top predator (wolf, jaguar, lion, etc), and discuss its habitats, what it relies on for food, classify this animal as carnivore, herbivore, or omnivore. Next discuss one of the animals that the top predator consumes and answer the same questions (habitat, food, classification, etc).
Put the animals into a food chain or web.
As a class, pick one of the top predators found in the Amazon Rainforest. Research the animal, and research the animals that create the prey models of the chain.
Connect the animals to their predators, making sure to use arrows to show what consumes each animal.
Use the Food Chain worksheet to fill in your new found information.

Lesson Extensions:

Have students individually complete a series of food chains/webs for the ecosystem that they live in.

Predator-Prey Diagram

Fill the boxes with the name of an animal which lives in the Peruvian forest. Use arrows to connect the boxes to show what each animal eats. You may have to use more than one arrow from each animal. Make sure that you put the top predator at the top of the web.