

Biomes Activity

Objective: Your task is to design an animal that is best suited to its environment.

Summary: In order for you to design an animal best suited to its environment, you need to learn about different types of environments that exist on our planet known as **BIOMES** and investigate the various factors, both living and non-living that influence these different regions. In the following activities you will be able to learn how **BIOTIC** (living) and **ABIOTIC** (non-living) factors in a given biome relate to physical adaptations of an animal, which lead to its survival in the wild.

Background Knowledge:

- Abiotic and biotic factors
- Biomes
- Adaptations

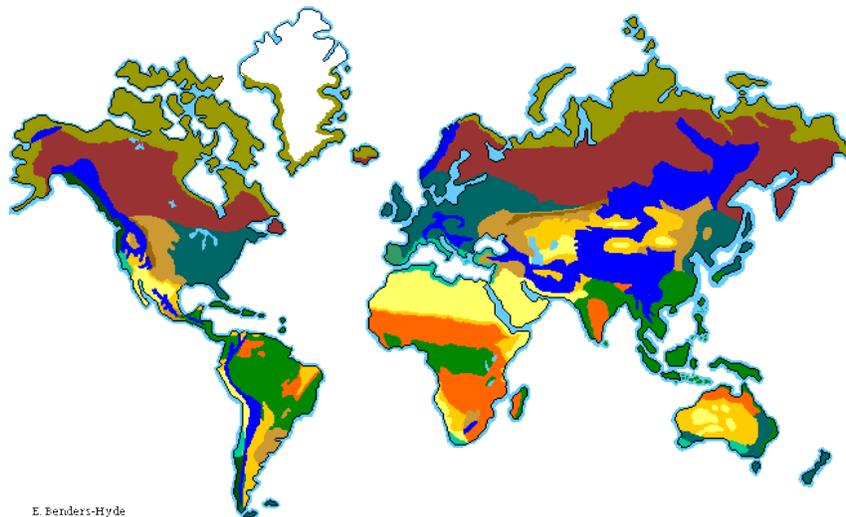
Activity 1: Biotic and Abiotic

In order for you to properly design an animal that is best suited to its environment, you will need to learn how living and non living factors affect a given area known as an ecosystem. A system is a group of things that interact with one another. The organisms that make up the living part of an ecosystem are called **biotic factors**. An organism depends on other biotic factors for food, shelter, protection, and reproduction. Nonliving things that we find in an ecosystem are called **abiotic factors**. Abiotic factors have an effect on the type and number of organisms living in an ecosystem. Some abiotic factors include soil, water, temperature, and sunlight.

Activity 2: Biomes

Now that you have learned to identify abiotic factors and biotic factors in an environment, you will learn about the different characteristics of various regions of the world known as **biomes**. Biomes are distinguished by the abiotic and biotic factors that belong to them.

What are biomes? Learn about the different characteristics of the different biomes using the interactive map below!



You will be completing "Abiotic and Biotic Factors of Different Biomes Worksheet 2". Use either of the following websites to complete the worksheet:

<http://www.ucmp.berkeley.edu/exhibits/biomes/index.php>

http://www.blueplanetbiomes.org/world_biomes.htm

Activity 3: Putting it all together

Having learned about the biotic and abiotic factors of the three different biomes, you are now ready to investigate how they interact with each other in an environment. You will now do an activity about making **INFERENCES** about animal **ADAPTIONS**. An **ADAPTATION** is a characteristic that helps an animal or plant survive in its environment.

You can **INFER** some things about the environment of an animal or a plant just by looking at it. Look at the following image of an owl and a polar bear. What do their different body parts tell you about the animal?

Examples:



Body part: Talons

Inference: hunter or eats animals

Justification: (why?)

Claws are used to kill animals like weapons.

Body part: Big eyes

Inference: hunts at night

Justification: (why?)

Those type of eyes allow for night vision.



Physical attribute: thick fur

Inference: lives in the cold

Justification: (why?)

To survive the cold animal needs a thick coat for insulation

Physical attribute: white fur

Inference: that it lives in the snow

Justification: (why?)

To hide from prey (camouflage) to help it hunt better.

Animals have developed certain physical characteristics because of their surroundings. **ASTRUCTURAL ADAPTATION** is a part of a living organism's body with a specific function that helps the animal to survive. For example, some animals have evolved to eat other animals, they are said to be carnivore. In order to eat other animals they would have to have claws and sharp teeth. An owl has large, curved claws and you can infer that it is a hunter. It has large eyes you can infer that it hunts at night.

Animals are also affected by the non-living (abiotic) factors. For example, the polar bear lives in an Arctic biome, meaning that it is quite cold. The polar bear is adapted to this environment as it has thick fur to keep it warm. By looking at the different physical aspects of the animals we can infer such things as where it lives, whether it is a carnivore (eats animals) or an herbivore (eats plants).

Activity 4 - Your Turn!

1. Choose one of the world's biomes.
2. Create an animal by selecting specific body parts from the list **below** that would be most suitable considering the abiotic and biotic factors in your biome.
***Remember you are creating the **most suitable animal** for this given environment.
3. Draw a picture of your animal.
4. Now that you created your animal, you will have to justify your choices. In the chart on the "Criteria for judgment" worksheet, list the abiotic and biotic factors that influence your choice of body parts. In the last column be sure to justify your choice of animal adaptation (body parts).

IF YOU ARE HAVING DIFFICULTY: Visit the following website to learn more about animal adaptations in order to properly choose the various body parts.

<http://www2.scholastic.com/browse/article.jsp?id=2840>

Feet: Hooves Webbed Talons	Legs: Long Short No legs Webbed Talons
Teeth: Sharp Blunt No teeth	Covering: Thick fur No fur Thin fur
Coloring: Pattern Solid Dark White Brown	Body Shape: Thin Fat Streamline
Ears: Large Small Medium	Eyes: Large Medium Small