

The background of the entire image is a close-up, repeating pattern of zebra stripes. The stripes are dark brown or black, set against a lighter tan or beige background. The pattern is oriented vertically and repeats across the entire frame.

Animal

Adaptations

A scenic view of a beach with waves crashing on the shore under a clear blue sky. The foreground shows a wide expanse of golden sand with some small rocks and debris. The ocean is a deep blue, and the sky is a lighter, clear blue.

*Close your eyes
and imagine
this...*

*Your are at a picnic on a beach. It
is a beautiful day, and everything
is just great!*

Your are at a picnic on a beach. It is a beautiful day, and everything is just great!

You lay out your food, build a fire, and start roasting your hot dogs.

Then, suddenly, the wind starts blowing, the sky gets cloudy,

lightning flashes,

thunder rolls,

and rain starts pouring down.

You, your food, and your fire, all start to get wet. What are you going to do?

Well, you have some choices:

- A. You could do nothing, in which case, your food will get soaked, your fire will go out, and you will get cold and wet and probably hungry. You might even be struck by lightning!*
- B. You could put on a big raincoat or put up a tarp to keep yourself, your food, and your fire dry while you finish your picnic. (Of course, you will still have to keep an eye on that pesky lightning.)*
- C. You could pick up your stuff, go under a park shelter, and use the gas burners to cook your food and finish your picnic.*
- D. You could just go home and have an indoor picnic.*

STOP

If you choose to change:



- **Yoursel by putting on a raincoat,**
- **Your behavior by using a gas fire under a shelter rather than a wood fire out in the open, or**
- **Your location by going home,**
- **you will be changing or adapting to the changing weather so that you can continue to enjoy your picnic.**

On the other hand, if you choose to do nothing to adapt to the changing conditions:

you will probably make yourself miserable, prevent yourself from finishing your picnic, and you might even make yourself extinct!



When you started your picnic, you had the right clothes and equipment for a sunny day at the park. You were "fitted" or "adapted" to the environment as it then existed.

- **Plants and animals are adapted to the environments in which they live.**
- **Their individual adaptations permit them to get the food, water, and shelter they need to live. For example:**
 - **Sharks have fins, streamlined bodies, and sharp teeth that enable them to swim quickly and catch food in the ocean.**
 - **Trees have leaves to catch sunlight and roots to collect water and nutrients from soil on land.**
 - **Sharks cannot live on land and trees cannot live in the ocean because they are not adapted to those environments.**

But environments change...

- **Just as your picnic environment changed when the cloudburst came, environments around the world change over time.**
- **As environments change, the plants and animals living in them must change and adapt to the new conditions in order to survive and not become extinct.**
 - **They must change the shape and function of their bodies (physical adaptation).**
 - **Or, they must change their behavior (behavioral adaptation),**
 - **Or, they must move to a different place that has the environment they need.**

**What does
adaptation
mean?**

ADAPTATIONS

Adaptations

You take in oxygen by breathing air into your lungs. Fish take in oxygen through their gills. Lungs and gills are structures. A **structure** (STRUK chur) is a body part that does a certain “job” for an organism. The “job” that a structure does is called its **function** (FUNGK shun).

Structures that help organisms survive in their surroundings are called **adaptations** (ad ap TAY shunz). Lungs are an adaptation for living on land. Gills are an adaptation for living in water.

A behavior can be an adaptation, too. For example, some desert animals hide under rocks during the day to escape the sun’s heat.

WORD WATCH

A **behavior** (bih HAYV yur) is something an organism does.

ADAPTATIONS

***Any body shape, body process,
or behavior that allows an
organism to survive in its
environment and carryout its
life processes.***

ADAPTATIONS

Description - Definition

**Structures or
Behaviors that help
organisms survive or
live in their
environment.**

ADAPTATIONS

Description - Example

When zebras travel together in groups, the lions that hunt them can not pick out one zebra to attack because the zebras' stripes blend together. Also, lions are colorblind and do not know that the stripes are black and white. As a result, the lion thinks the zebras are grasses blowing in the wind.

How are adaptations caused?

<http://www.brainpop.com/science/populationsandecosystems/naturalselection/>

ADAPTATIONS

Description – Explanation

Adaptations come from mutations that helped an animal survive, and were passed on to the organisms' offspring (children).

ADAPTATIONS

- **STRUCTURAL**

A part of the body that helps an organism survive in an environment.

Such as –

**Size, Shape, Type
Color, & Texture
of body parts.**

- **BEHAVIORAL**

An action that an organism does that helps an organism survive in an environment.

Such as –

**Defense
Protection**

The background of the entire image is a zebra's coat, featuring a pattern of black and tan vertical stripes. The stripes vary in width and are set against a dark background.

Adaptation

Examples

**Are these
Structural or
Behavioral
Adaptations?**

Paradoxophyla palmata, a narrow-headed frog native to Madagascar. The frog's brown and yellow coloring, as well as its rough texture, allow it to blend in with the mud and tree trunks in its environment.



A tartan hawkfish, photographed off the coast of Papua New Guinea - The fish's striking coloration allows it to blend in with these bright gorgonian fans.



© Carl Roessler



A cryptic frog - This species has developed a coloring, texture and form that are similar to the leaves found in its environment.



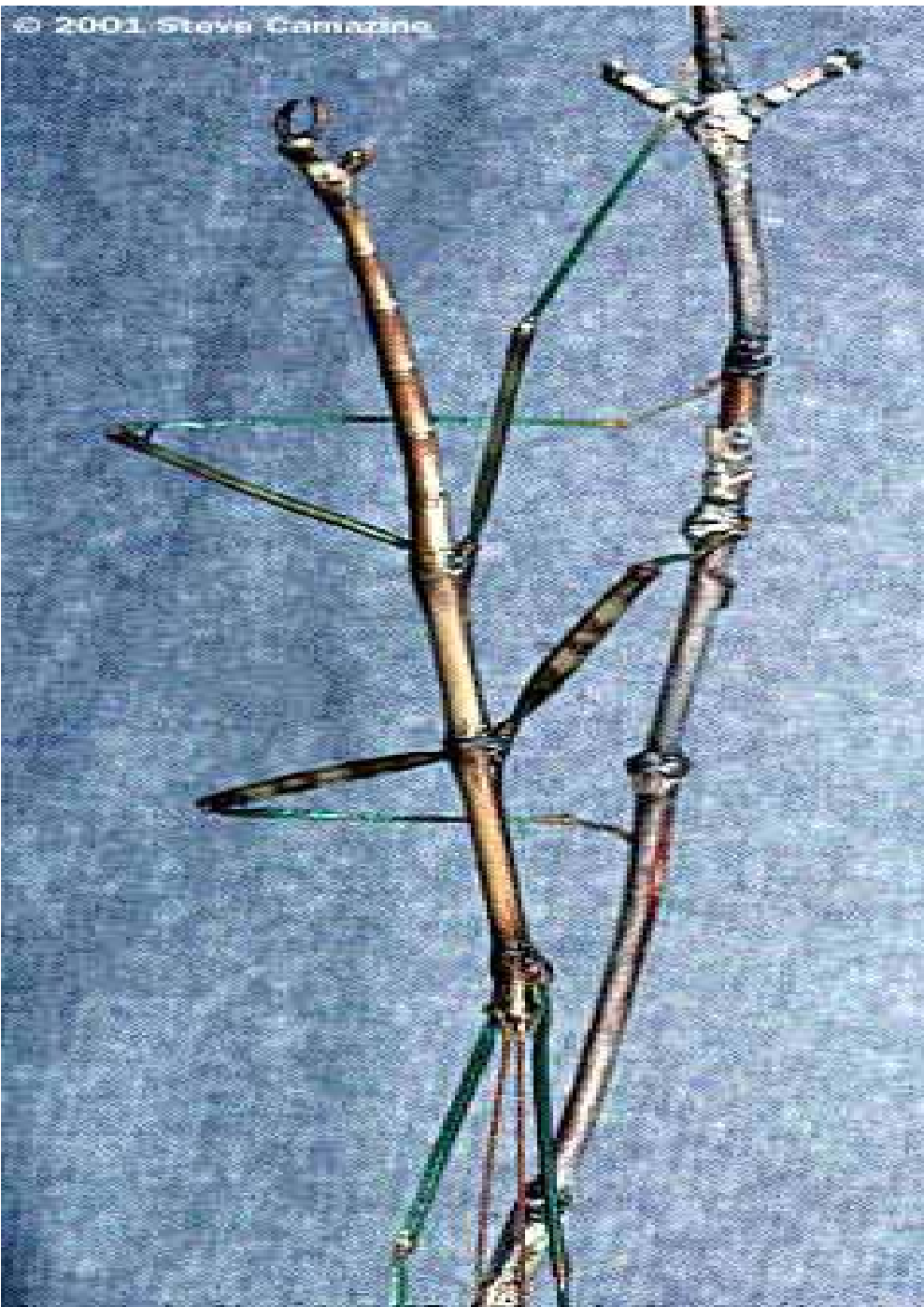
As the seasons change, the Arctic fox changes the color of its coat. In the spring and summer, it has a dark coat, to match the brown dirt in its environment. In the fall and winter, it turns white, to match the surrounding snow.





***Chamaeleo pardalis*, a chameleon species found in the forests of Madagascar. Chameleons can produce a wide range of colors and patterns on their skin, but they do this primarily to express mood, not to blend in with different environments.**





**Walking sticks
have adapted
to resemble
their
surroundings.
Most of the
time, their
predators pass
them by as
they would a
real twig.**

Examples

- Spines on a cactus
- Color of insect
- Hollow bones
- Larger muscles
- Migration of birds

Animal Adaptation Activity

www.pbs.org/kratts/world/content.html