

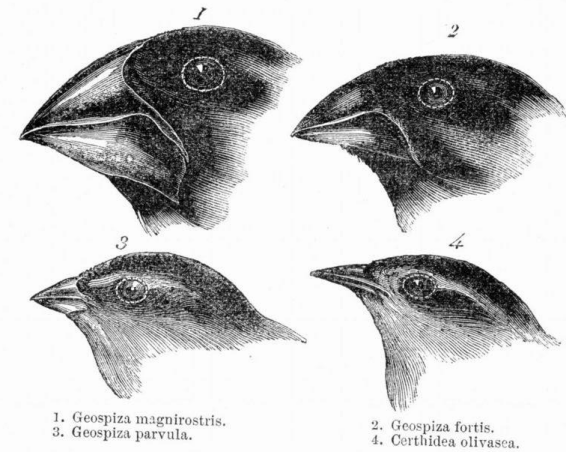
ADAPTATION

Adaptation is the process by which an animal or plant species becomes best fitted for survival in its environment. The process may be either a change in structure (bird beaks) or behavioral (animal migrating to find water).



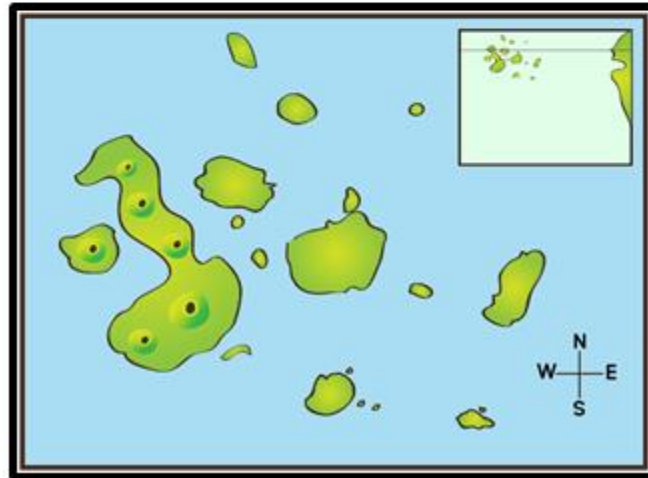
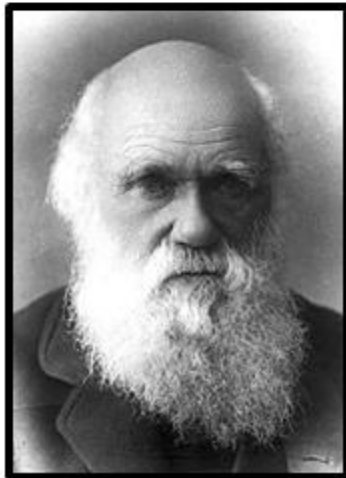
NATURAL SELECTION

Natural selection is a natural process proposed by Charles Darwin that results in changes in organisms over time. Because resources are limited in nature, organisms with heritable traits that are favorable for survival and reproduction will leave more offspring, causing the traits to increase in frequency over generations.



Charles Darwin

- English naturalist and geologist (1809 – 1882)
- Known for his contributions to evolution by natural selection
- Studied many different species on the Galapagos Islands

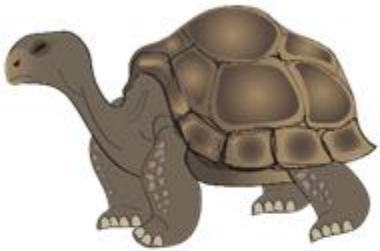




Natural Selection

- **Organisms that are better suited for their environment are more likely to survive and reproduce**
- **Favorable traits are passed to future generations and unfavorable traits are not**
- **Variation – differing characteristics between organisms in a certain species (ex. beak shape)**

Galapagos Islands

3 Species Darwin Studied

Galapagos Tortoise		On islands with low shrubbery, tortoises had short legs and short necks. On islands with taller vegetation, tortoises had long legs and long necks to reach the food.
Marine Iguana		Only found on the Galapagos Islands. It has longer claws to grip rocks, dark skin for camouflage, sharp teeth for scraping algae off of rocks, and a strong tail for swimming.
Finch		The size and shape of beaks is due to their diet. Short, broad beaks are used for crushing seeds. Long, narrow beaks are used for probing for insects.

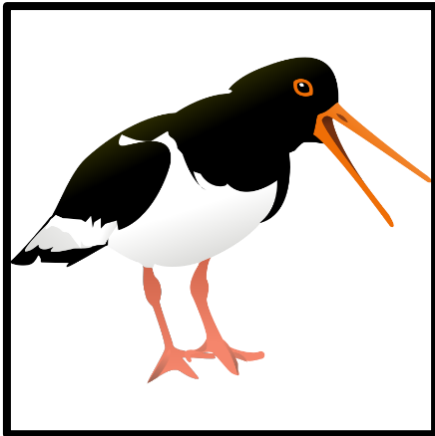
Adaptations

- **A physical feature or behavior that helps an organism get food, protect itself, move, or reproduce**
- **Traits such as beak shape or neck length are physical features**
- **Organisms with favorable adaptations have a better chance of getting the resources they need**

Structural Adaptations

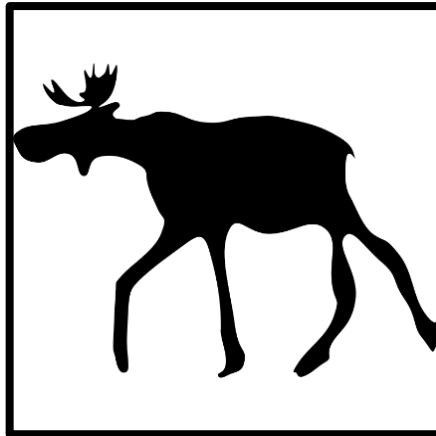
- Physical features that have developed over time to help an organism survive in its environment

Narrow Beak



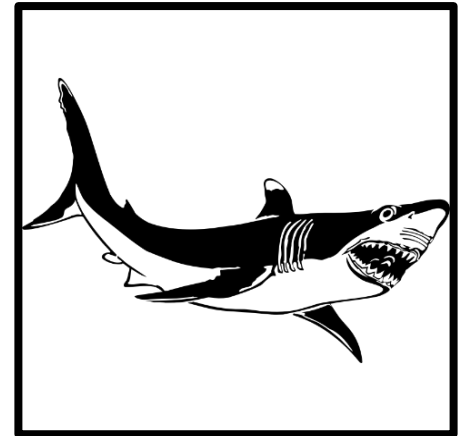
Probes for
insects

Long Legs



Walking through
deep snow

Sharp Teeth



Tearing apart
prey

Camouflage

- An organism blending in with its environment
- Appears to be “hiding”
- Can be used to avoid predators or sneak up on prey
- A type of structural adaptation



Wolf Goby

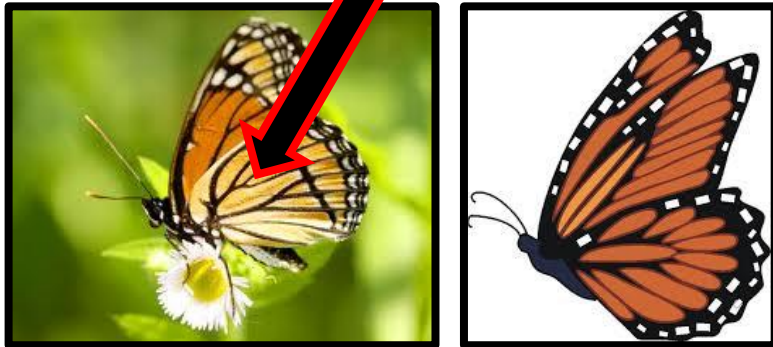


Arctic Hare

Mimicry

- An organism resembling another organism in order to provide protection
- It acts as a “copycat”

Viceroy Butterfly



Mimics a monarch butterfly. Monarchs are poisonous to birds.

King Snake

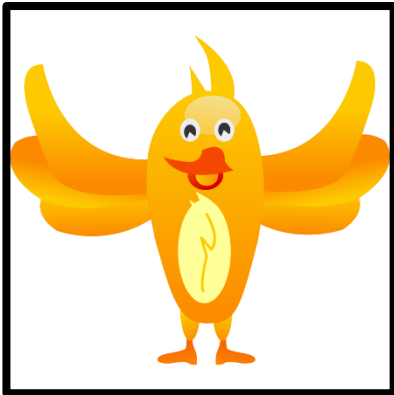


Mimics a coral snake. Coral snakes are venomous.

Behavioral Adaptations

- The way an organism acts in order to help it survive
- Can be instinctive or learned

Instinctive Behavior



A bird performing a mating dance to attract a mate.

Learned Behavior

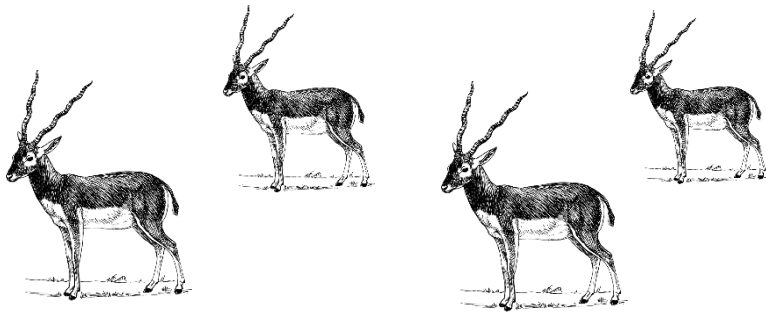


A raccoon opening a container searching for food.

Instinctive Behaviors

- A behavioral pattern that an organism is born with
- Happen naturally and does not need to be learned

Migration



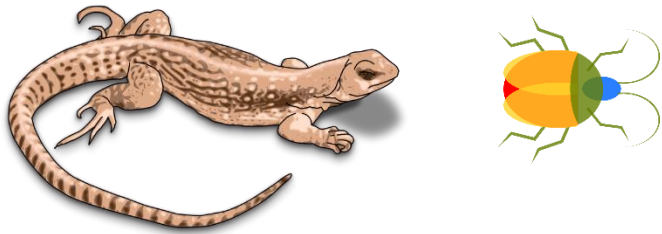
Hibernation



Learned Behaviors

- Obtained by interacting with the environment
- Cannot be passed on to the next generation
- **Must be taught or learned through experience**

A lizard becoming ill after eating a poisonous insect.



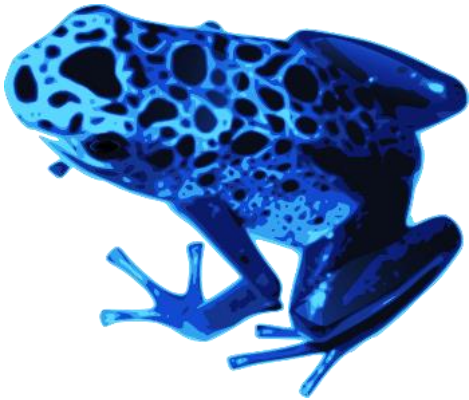
Teaching a dog to play fetch.



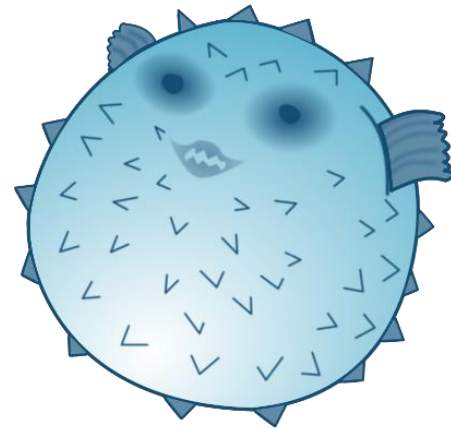
Physiological Adaptations

- **Allows an organism to perform special functions within the body**

Produces poison to secrete through skin.



Puffs up when threatened by a predator.



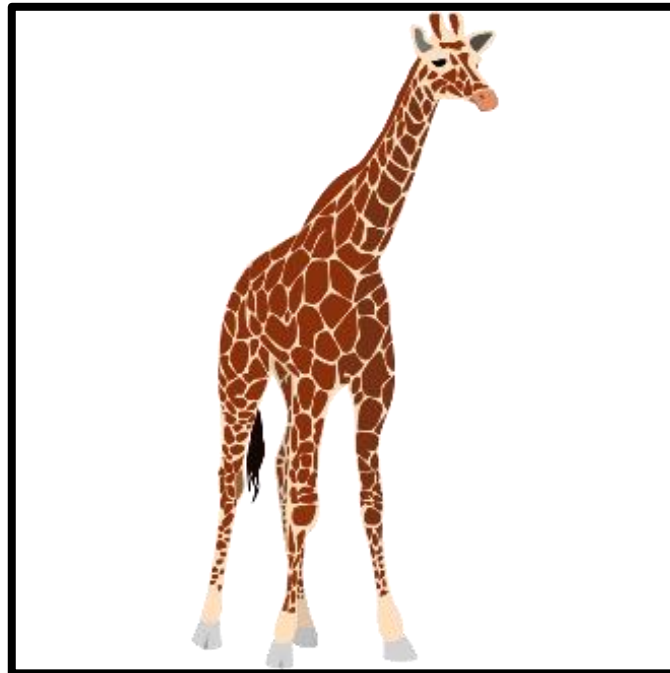
Checkpoint

- **5 checkpoint questions**
- **Discuss each question with a partner**
- **Write a complete answer to each question on your notes page**



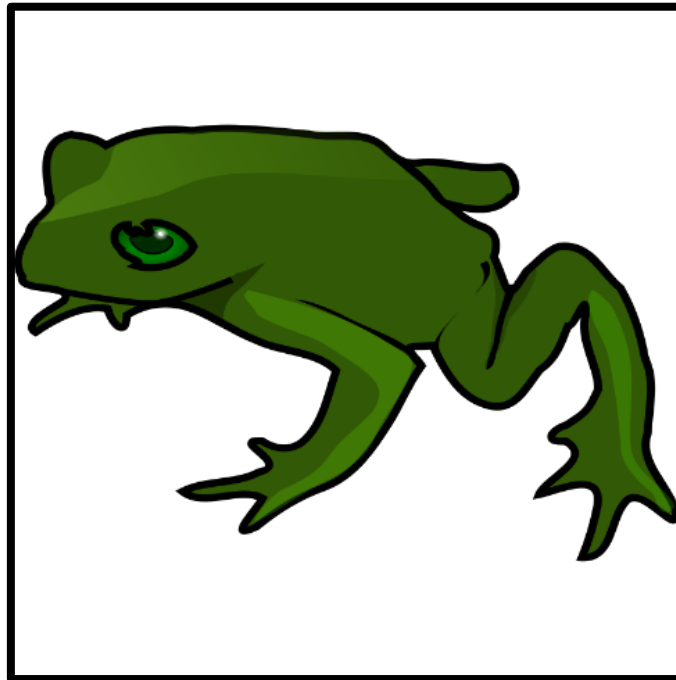
Question 1

What could be a possible explanation for the length of a giraffe's neck?



Question 2

Identify 3 beneficial adaptations of a frog.



Question 3

Structural, Behavioral, or Physiological?

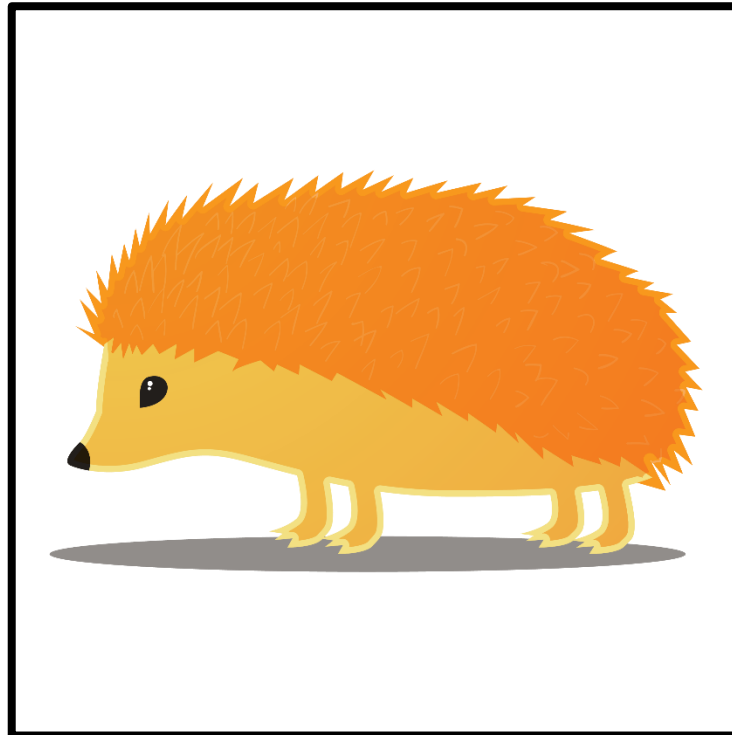
Venom of a scorpion.



Question 4

Structural, Behavioral, or Physiological?

Spines on a hedgehog.



Question 5

Structural, Behavioral, or Physiological?

Running away from a predator.



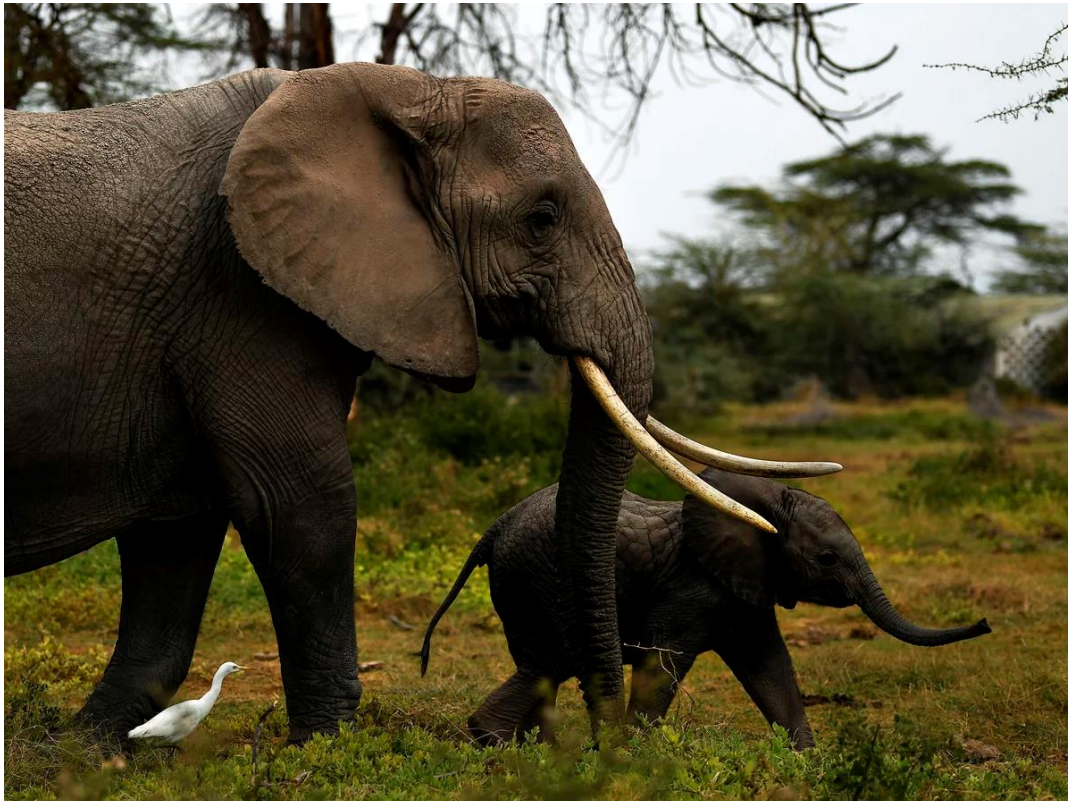
Question 6

How is the polar bear adapted to its environment?



Question 7

How is the elephant adapted to its environment?



Question 7

How we these animals need to change if they switch envrioments?



Question 8 continued

My animal is...

Its environment is...

It looks like...

Its first adaptation is...

This helps my animal survive by...

Its second adaptation is...

This helps my animal survive by...

Its third adaptation is...

This helps my animal survive by