

Adaptive Radiation

What is Adaptive Radiation?

Adaptive Radiation is a change in a species group based on the area or space they live in.

The rattlesnake is a species that has learned to change its behaviour depending on where it is living. For example, in the desert the sidewinder rattlesnake moves from side to side so that only two points of its body touches the hot sand at any time. However, in any other environment the rattlesnake moves like any other snake with its whole body touching the ground.



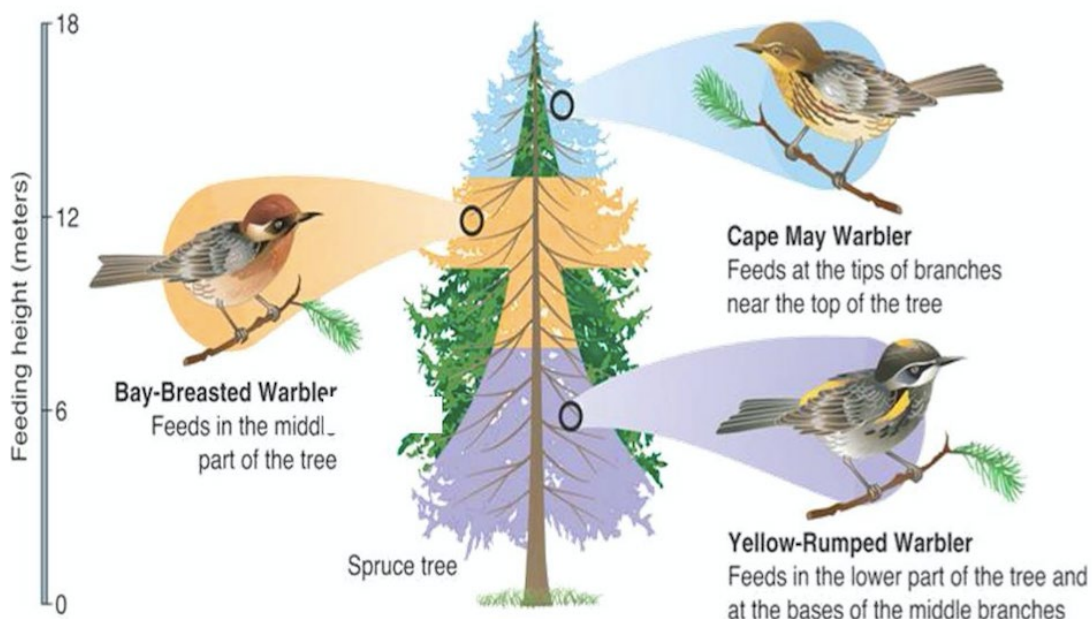
The Amazing Sidewinder: <https://youtu.be/JyXNBAHu32o>

The Niche Rule

The **Niche Rule** says only one population may occupy the same **niche** in a given **habitat**.

A **niche** is the role a species has in its environment. It includes all of the living and non-living interactions for that **one** species.

A **habitat** is a physical area that is inhabited by a particular species.



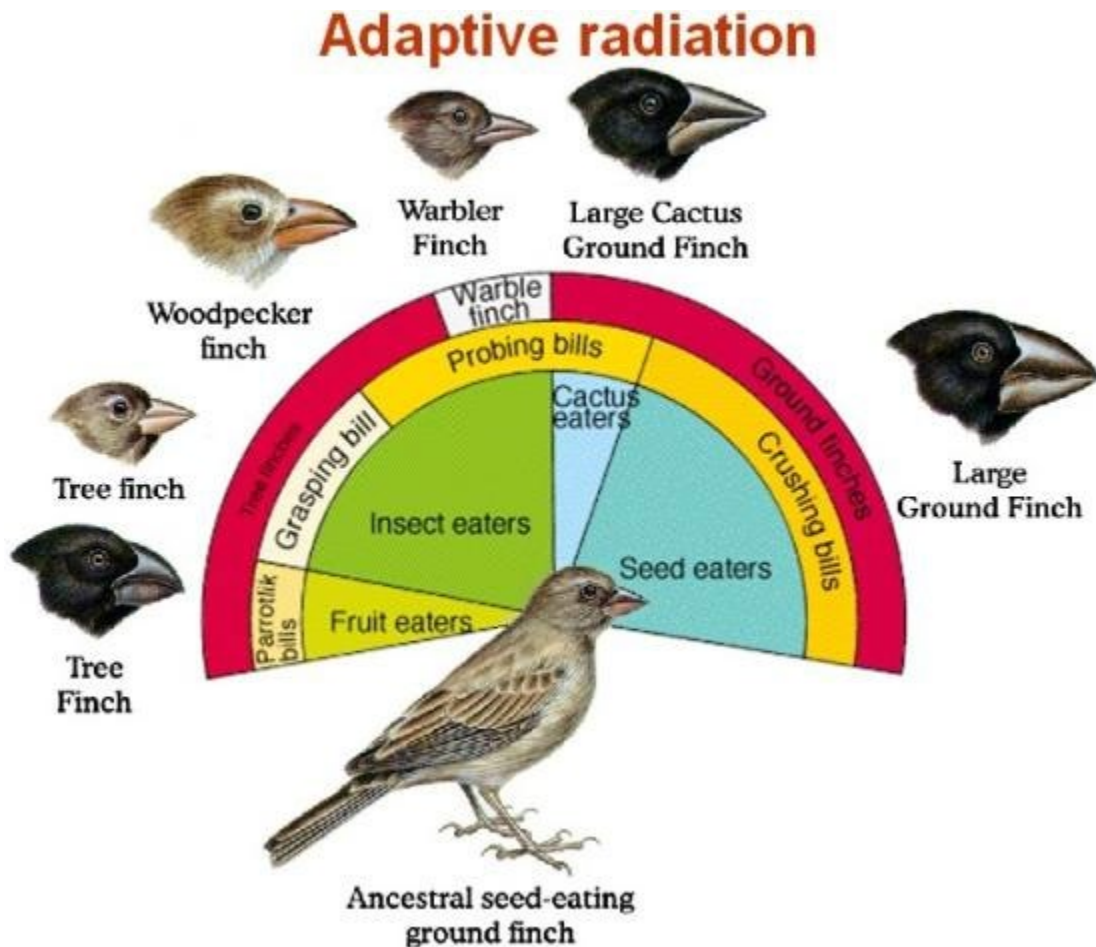
Darwin's Finches

While Charles Darwin tested his Theory of Evolution, he put together an adaptive radiation map. He based his studies on the Finches of the Galapagos Islands.



Evolution by Natural Selection - Darwin's Finches: <https://youtu.be/s64Y8sVYfFY>

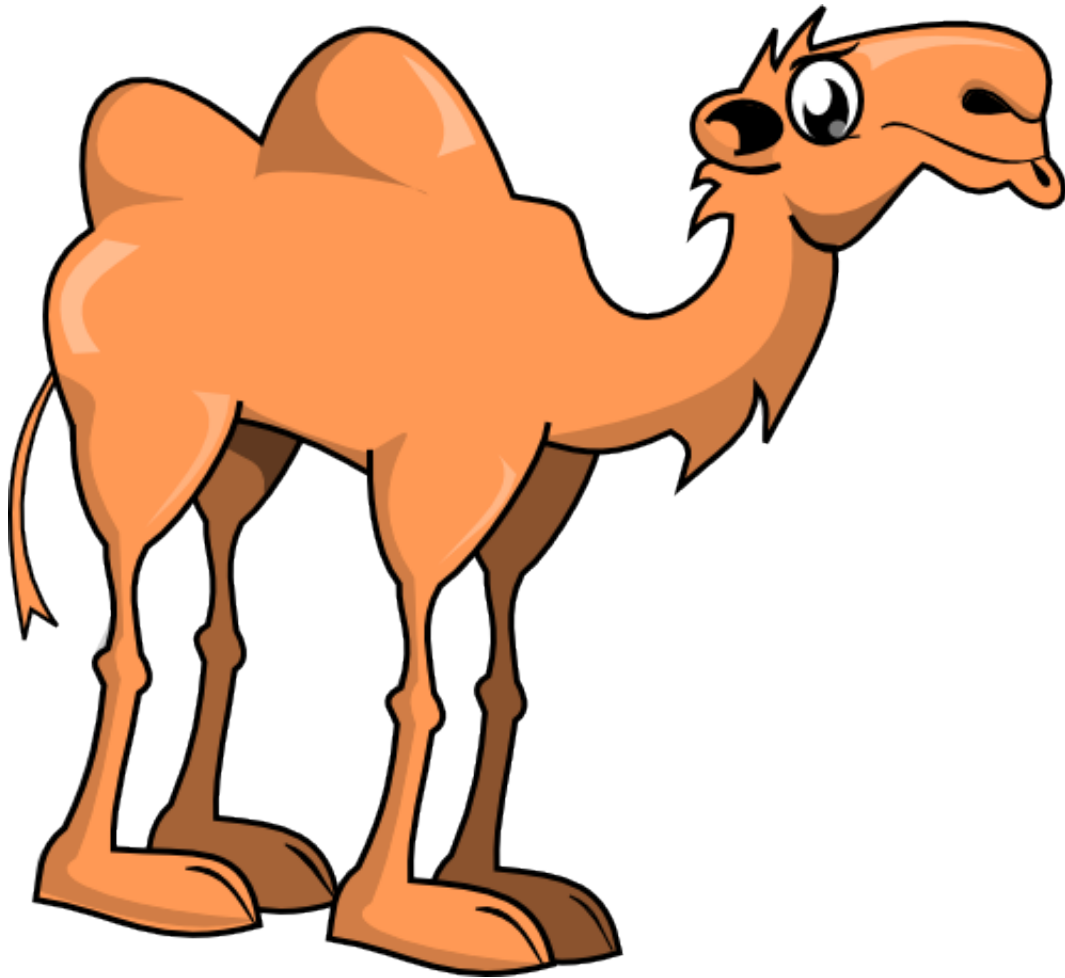
As you can see in the picture below, each Finch has different traits depending on the food that was available to them in the area they lived in. For example, look closely at the variation in beaks that each of the Finches has. Some have similar beak shapes, while others are quite different. It is important to note that there were other differences between the Finches as well.



One Hump or Two?

Organisms need to have the ability to adapt to their environment in order to survive. Environments sometimes change and organisms sometimes just move to new environments. In either case, organisms will need to adapt if they are to continue to survive.

The camel lives in the desert where food and water are not always easy to find. The camel has adapted by storing fat in its hump or humps to be used for food and water when necessary. This ability allows the camel to survive in its environment.



Complete the following:

What is adaptive radiation?

Adaptive radiation is a in a species depending on the area they live in. The Sidewinder Rattlesnake lives in the desert and has adapted to its environment by...

The Niche Rule

Only one population can occupy a _____ in any given _____. An example of a niche would be sections of a tree where _____ might feed.

Adaptive Radiation

Charles Darwin studied the _____ of the Galapagos Islands. He discovered that each of the Finches had different types of _____. For example, the Large Ground Finches have bills and eat _____.

Terms:

- 1.
- 2.
- 3.
- 4.

Go Further:

Find and research an example of a species that shows adaptive radiation. Give a brief explanation of how they have benefited from their adaptations. (Attach pictures if you can!)