

# Life Sciences: Theory of Evolution

Grade 7

## Big Idea

The theory of evolution by natural selection provides an explanation for the diversity and survival of living things.

## Questions to support inquiry with students:

How do ecosystems and Earth systems change over time?

How do these changes affect biodiversity?

## Learning Standards: Content

1) natural selection through adaptive radiation - a proposed mechanism of the theory of evolution

2) survival needs and interactions between organisms and the environment

## Content Elaborations

1) Natural Selection: The natural process through which certain traits that have a greater fitness for their environment lead to a reproductive advantage; this process happens within a population over time because of genetic variation

Adaptive Radiation: Over time, groups of organisms from an original population will change as a result of adapting to their environment and will develop into different species

2) All organisms need space, food, water and access to resources in order to survive.

Habitat fragmentation: When a habitat is broken into smaller pieces (such as when areas of parkland are separated by roads or development), the smaller segments have less biodiversity

## Learning Standards: Curricular Competencies

### Questioning and predicting

- ▶ Demonstrate a sustained intellectual curiosity about a scientific topic or problem of personal interest
- ▶ Make observations aimed at identifying their own questions about the natural world
- ▶ Identify a question to answer or a problem to solve through scientific inquiry
- ▶ Formulate alternative "If...then..." hypotheses based on their questions
- ▶ Make predictions about the findings of their inquiry

### Elaborations

Evolution is the change that occurs in living things over long periods of time. This change is a result of organisms being suited to their environment. Evolution is an important concept in biological science, as scientists are always searching for the underlying laws, reasons, or explanations for their observations of living things.

- Key questions about evolution:  
*How have species on Earth evolved due to natural selection?*  
*How does fossil evidence support the evolution of geological time?*