



# Big Idea 15 : Diversity and Evolution of Living Organisms

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- A. Earth is home to a great diversity of living things, but changes in the environment can affect their survival.
- B. Individuals of the same kind often differ in their characteristics and sometimes the differences give individuals an advantage in surviving and reproducing.

<b>Number:</b> SC.5.L.15	<b>Title:</b> Diversity and Evolution of Living Organisms
<b>Type:</b> Big Idea	<b>Subject:</b> Science
<b>Grade:</b> 5	<b>Body of Knowledge:</b> Life Science

## Related Benchmarks

Code	Description
<a href="#">SC.5.L.15.1</a>	Describe how, when the environment changes, differences between individuals allow some plants and animals to survive and reproduce while others die or move to new locations.

## Related Access Points

Independent

Access Point Number	Access Point Title
<a href="#">SC.5.L.15.In.1:</a>	Identify ways that plants and animals can be affected by changes in their habitats, such as lack of food or water, disease, or reduced space.

Supported

Access Point Number	Access Point Title
<a href="#">SC.5.L.15.Su.1:</a>	Recognize ways that plants and animals can be affected by changes in their habitats, such as lack of food or water.

Participatory

Access Point Number	Access Point Title
<a href="#">SC.5.L.15.Pa.1:</a>	Recognize what happens when plants don't get water.

## Related Resources

Teaching Idea

Name	Description
<a href="#">A Dolphin's Day-SeaWorld Classroom Activity:</a>	In this activity, the students will use number and listening skills as they reinforce their understanding of dolphin behavior using echolocation. As the students listen to the teacher read a story about a dolphin's adventure they can either connect dots or plot points on a graph to figure out what the dolphin gets to eat at the end of the story.
<a href="#">Adaptation:</a>	In this activity, students examine some of the behaviors and physical characteristics that enable organisms to live successfully in their environment.
<a href="#">Bird Beaks:</a>	This lesson focuses on bird beaks, exploring the relationship between a bird's beak and its ability to find food and survive in a given environment.
<a href="#">Designing a Dwelling-A SeaWorld Classroom Activity:</a>	Students will create a protected environment that will meet all of a manatee's needs, thereby encouraging breeding.
<a href="#">It's A Wolf's Life:</a>	As a result of this activity, students will be able to understand the interconnectedness of organisms and their environment. Additionally, they will obtain a simple understanding of how graphs are used to follow and determine scientific trends.
<a href="#">Local Species Science Fair-SeaWorld Classroom Activity:</a>	Students will research protected plants and animals that live in their state and create a presentation about that species to share with others.
<a href="#">Web Of Life:</a>	This resource is a simulation game where students represent plants and animals living in a forest habitat. Sitting in a circle, they connect themselves using string to represent the ways they depend on each other. As they make connections, the string forms a web of life. They will also learn what occurs when an invasive species enters their

## Lesson Plan

Name	Description
	This unit begins by classifying animals into major groups (mammals, birds, reptiles, amphibians, fish, vertebrates and those having live births and those which lay eggs) according to their physical characteristics and behaviors.
<a href="#">Adaptations: Will You Survive?:</a>	Students will review the path of the flow of energy from the Sun as it is transferred along the food chain through the producers to the consumers, and recognize ways plants and animals, including humans, can impact the environment.  Students will compare and contrast adaptations of animals and plants that enable them to survive.
<a href="#">Animal Tracks:</a>	Students in this MEA will team up to select an endangered animal to relocate.
<a href="#">Arctic Animals and a Changing Climate:</a>	Learn about the effects of a changing climate on the Arctic ecosystem and four of its well-known mammals: the polar bear, the walrus, the Arctic fox and the beluga whale.
<a href="#">Environmental Differences:</a>	Students will observe and conduct an experiment to see whether differences in salinity (the environment) have an effect on the hatching rate and survival of brine shrimp.
<a href="#">Forest Ecosystem:</a>	Students are presented with this scenario: A horrible forest fire has come through an ecosystem near you! Students will need to provide a detailed news article explaining the effect that this fire had on the food chain and how local citizens can help to restore the ecosystem. In addition to providing steps to rebuild, they must also convince readers that steps need to be taken in advance to prepare ecosystems for similar disasters.
<a href="#">Gr. 5 Lesson 1-Incredible Shrinking Habitat:</a>	Students will become Florida panthers, white tailed deer, and motor vehicles in an active, tag-like game to simulate the disappearance of Everglades habitat.
<a href="#">Gr. 5 Lesson 2-Invasive Species:</a>	Students will play an interactive game depicting the interactions in a habitat and the problems that occur with exotic species introduction.
<a href="#">I Will Survive! - An Engineering Design Challenge:</a>	This Engineering Design Challenge is intended to help fifth grade students apply the concept of how changes in an ecosystem can affect the survival of an animal species. Some suggested background building lessons are included, but it is not intended as an initial introduction to this benchmark.
<a href="#">Preying on Beans:</a>	Students act as predators searching for prey (beans) in two different settings to demonstrate the processes of adaptation and selection. They track and graph their data, then compare the results of the prey eaten in the different environments and develop explanations based on their data in a class discussion.
<a href="#">Seed Starters:</a>	This MEA presents a non-profit group that helps start schools gardens. This client is looking to switch to a tomato seed that is adapted to increased moisture in the soil due to precipitation and is versatile and great tasting. The engineering team will examine the seeds presented and develop a procedural method to rank the seeds based on the client's needs. The engineering team will reach a decision as to the best choice of seed for the client.
<a href="#">Sell This Habitat!:</a>	In this lesson, students will apply their knowledge of plant and animal adaptations to create an opinion writing piece. <b>Students will write to convince a fictional nature show producer to film plants and animals in a habitat of the student's choosing.</b> Students will be assessed on elements of persuasive writing including: strong introduction/conclusion, logical sequencing, strong word choice, and supporting evidence.
<a href="#">Survival of the Fittest:</a>	This is a five day lesson integrating Science, Reading and Writing. It is developed on a Reading lesson plan format using Shared Reading, Core Reading, Guided Reading and centers but can easily be transferred on to a Science 5E lesson format. The versatility of the lesson and the integration between subjects lends itself to it being widely used among teachers for different reasons; whether the teacher's need be in Science, Reading or Writing the lesson provides opportunities for all areas to be addressed. Most importantly, it offers the busy teacher an opportunity to implement one lesson to cover three subjects.
<a href="#">Wildlife Refuge MEA- Feeding the Animals:</a>	Students use mathematical practices to recommend food packages for the Wildlife Refuge of North America to order.

## Original Student Tutorial

Name	Description
<a href="#">Amazing Adaptations Part 1: Plants:</a>	Join a biologist to explore amazing adaptations among plants in this interactive student tutorial.
<a href="#">Amazing Adaptations Part 2: Marine Animals:</a>	Come along and explore amazing adaptations of marine animals with a biologist as your guide in this interactive tutorial.
<a href="#">Amazing Adaptations Part 3: Land Animals:</a>	Come along and explore how lands animals are adapted to changing environments all around the globe in this interactive tutorial.
<a href="#">Amazing Adaptations Part 4: Freshwater Life:</a>	Come along and explore the amazing adaptations of freshwater life in this interactive tutorial

## Lesson Study Resource Kit

Name	Description
<a href="#">Exploring Diversity and Evolution: A Lesson Study Resource Kit for Grades 3-5:</a>	This resource kit provides teachers engaged in lesson study with exemplary content background, unit and lesson plans, assessment items and tasks, and informational texts, related to the teaching and learning of diversity and evolution in grades 3-5. Complete with links to activities and lessons as well guiding questions, this resource kit contains all of the materials that a team would need to construct a unit of instruction that fully aligns to the NGSSS for science, while supporting the informational text component of the Florida Standards for English language arts.

## Educational Software / Tool

Name	Description
<a href="#">What Is It Like Where You Live?:</a>	This site offers an abundance of information on Earth's biomes (rainforest, tundra, taiga, desert, temperate, and grasslands), as well as marine and freshwater ecosystems. The site features relevant facts, pictures, maps, indigenous plants and animals, additional links, and much more.
	This resource is a wonderful reference, not a lesson plan. Teachers will need to provide an objective and structure for student interaction with the website.

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