Enrich your learning with movies and documentaries in conjunction with this DVD Learning Guide! Simply rent or purchase the media, then use this guide to teach this film’s topics!

Each DVD Learning Guide Includes:
- Vocabulary from the Film
- Discussion Questions based on Film Content
- Lesson Plans and Activities
- Related Books and Online Resources

Links to Netflix and Amazon included!
Galapagos (1999)
A Homeschool Learning Network® Learning Guide

Format: DVD
Age Levels: Elementary School, Middle School, High School
Genre: Documentary
Category: Science : Oceanography
Rating: NR
Length: 39 minutes
Producer: Smithsonian Institution

Warnings: This DVD contains images of sharks and discusses Darwin’s Theory of Evolution.

Summary

Travel to the Galapagos Islands, located nearly 1,000 km off the coast of South America, in this stunning presentation brought to you by the Smithsonian Institution and IMAX. Viewers travel with marine biologist Dr. Carole Baldwin to discover the unique species of these islands and the sea surrounding them. The documentary begins by introducing information about Charles Darwin’s early explorations of the islands in 1835. His discoveries, the documentary states, were key to his theory of evolution by natural selection. Viewers travel over lava rock, into caves, within tide pools, and into the ocean as they learn about iguanas, finches, tortoises, and other island inhabitants. Then, after taking a journey into the shallow waters surrounding the islands, the viewer is taken on a unique journey 3,000 feet under the surface of the sea to discover species never seen before with human eyes!

Vocabulary (Grades 1-12)

Try the following activities with the vocabulary words to the right. Depending on the age and ability of your students, they may be able to complete assignments from multiple grade levels.

1-2: Ask your students to copy the following words in alphabetical order, and to describe each of the words verbally. Practice spelling.

3-5: Look up each word in a dictionary, and write down its definition. Write each word in a sentence, or write a paragraph using the words.

6-8: Write a description or review about this DVD using the vocabulary words. Above each vocabulary word, write N if it is a noun, V if it is a verb; ADJ if it is an adjective; ADV if it is an adverb.
9-12: Write down words you hear in the video you don’t understand. Break the words into parts and see if you can determine the meanings. Look up the meanings.
Discussion Questions

Ask students to read through their questions carefully before watching the film, and take notes during the film. After watching it, ask students to write their answers to the following questions on a separate piece of paper.

Learning Styles: Auditory, Verbal
Intelligences: Verbal/Linguistic, Interpersonal

Elementary

1. What did Dr. Baldwin find in the caves?
2. How long does the Galapagos Tortoise live?
3. What animals live in the tide pools on the Galapagos Islands?
4. What creatures did Dr. Baldwin find deep in the sea from her submarine?
5. What was your favorite part of this film? Why?

Intermediate

1. How does this film describe different adaptations of the tortoise? The finch?
2. Describe how the Galapagos iguanas are amphibious. What did they do on land, and what did they do in the sea?
3. How is it thought that the iguanas arrived on these remote islands?
4. What percentage of the sea floor has been explored?
5. Why might this film describe the deep sea as the “earth’s last great frontier”? What other “great frontiers” have been discovered throughout history?
6. Describe three creatures in detail that Dr. Baldwin collected from the sea floor while submerged at 3,000 ft.

Advanced

1. How are the Galapagos Islands “still in the process of creation”?
2. By inference and your prior knowledge, briefly describe Darwin’s theory of evolution by natural selection, and name two animals described in the film as examples. How do they represent the theory?
3. The film states, “Animals and plants shape one another... their natural environment shapes both.” What does this mean? Give examples.
4. Charles Darwin wrote in his journal about the Galapagos, “These islands seem to be a little world within themselves—a perennial source of new things.” What did he mean? Focus on the words “perennial” and “new things” in your answer.
Lessons & Activities

Adaptations in the Deep

Subjects: Science, Social Science, Language Arts
Grades: 3-12
Style: Experiential/Kinesthetic

Concepts:
You will learn about the deep sea environment and thermal vents as they create their own invertebrate capable of adaptation.

Lesson:
The Galapagos Islands is a place that has an isolated, unique underwater environment. From hydrothermal vents emitting hot, mineral-rich gas and seawater back into the environment, to the 3,000 foot pitch-black depth of the ocean floor, nearly 30 new species were discovered on one expedition alone! What kinds of invertebrates could live in those conditions? After exploration and research, you will have learned about thermal vents and deep sea life, and then you will be able to create your own invertebrate!

Grades 3-8 Activities:

• Go on a journey in this ThinkQuest Entry http://library.thinkquest.org/18828/ to learn about hydrothermal vents. More information can be found at http://www.vims.edu/bridge/vents.html.

• Make a list of the conditions surrounding deep water hydrothermal vents, such as hot and cold water, darkness, and ocean currents. Write a paragraph describing the environment.

• Draw a picture of your own invertebrate creature that would live in this environment, and write a report explaining what your creature looks like, what it eats, and how it protects itself.

Additional Activity: Write a creative fiction entitled “A Day in the Life of… [your creature] “. Could your creature survive in the Galapagos?

Grades 9-12 Activities:

• Using the resources listed above, construct a presentation on hydrothermal vents in easy-to-understand terms. You can write an outline and report, or create a PowerPoint presentation. Research volcanoes and geysers, and include a comparison of them with hydrothermal vents to help your “novice audience” understand the differences.

• Design your adaptable invertebrate as described above. Create a 3D clay model of your invertebrate, and write a detailed description of it.

• Read Dr. Baldwin’s journals at http://www.mnh.si.edu/expeditions/galapagos/journal-main.htm and then create your own fictional discovery of your invertebrate. Describe every detail, and make hypotheses about its unique adaptations to its environment.
Additional Lessons and Activities for Your Child’s Learning Style

Visual (seeing)
- Visit a local aquarium, and find the animals that live in the deepest parts of the sea. They will be in the darkest tanks, often lit by ultraviolet light. Do they look different from other more common animals? Take a journal with you and document your discoveries. Find the animal that looks like it has undergone adaptations to its environment. Describe that animal, and document why you chose it.
- Do you think that creatures that live 3,000 feet below the ocean surface in pitch-blackness need to see? What other senses might they use instead of eyes?

Auditory (hearing)
- You have just landed on the shores of the Galapagos Islands. You expected to hear only the sound of the waves against the shore. Instead you hear scratching, splashing, pecking, chirping… and more! Describe what you hear, and which animals might be making the noises. Remember that there are tortoises, iguanas, and 40 varieties of finches!
- Create an oral report on 1) the DVD; 2) Your favorite animal of the Galapagos; or 3) a News Flash regarding the discovery of a new species. Present your report in front of your class or family.

Experiential (feeling, internalizing)
- What was the strongest feeling you had during the movie? Why?
- Imagine you were Dr. Baldwin, traveling to a remote island to study animals that you have never seen before. You will climb in caves, and dive deep into the ocean. On that journey, what would make you most afraid? What would make you most excited?
- Imagine that you lived in an area of the earth that had extreme temperatures every day. In the morning it was 120 degrees F and in the afternoon it was –30 degrees F. In order to survive, what types of adaptations do you think humans might undergo?

Kinesthetic (movement and tactile)
- Using the following resources, find out Where in the World is the Galapagos Islands? Use a globe to identify where the islands are. Draw a map of South America, then a map of Ecuador, and then a map of the Galapagos Islands. Create a clay model of the islands.
  - Map - South America http://www.worldatlas.com/webimage/countrys/sa.htm
Learn More!  Books and Online Resources

BOOKS


ONLINE RESOURCES
IMAX: Galapagos
http://www.imax.com/galapagos/
This is the official Web site for this DVD. Learn all about this film, go behind the scenes, view a photo album, and learn about the filmmakers!

National Museum of Natural History’s Galapagos
http://www.mnh.si.edu/expeditions/galapagos/
Learn more about this DVD at this site dedicated to documenting Dr. Baldwin’s journey. The site includes journals, photos, research, and Q&A’s.

Galapagos Island History
http://www.galapagos.com/gal_history.htm
Read about the history and geology of the islands, and learn about how plants and animals arrived there. Charles Darwin’s journey to the Galapagos Islands is also briefly described.

Charles Darwin and the Galapagos
http://www.terindell.com/asylum/jason/darwin.html
This site provides a brief history of Darwin’s journey to the Galapagos and how it affected his work.

Ocean Explorer: Galapagos Rift Lesson Plans
http://oceanexplorer.noaa.gov/ explorations/02galapagos/background/education/media/gal_lessonplans.html
Create an entire theme of learning with Galapagos lessons for grades 5-12!

Galapagos Education Site
http://pubs.nsta.org/galapagos/
This site, brought to you by the National Science Teacher’s Association, is another excellent resource for teaching about the Galapagos. It provides a Galapagos Guide, Classroom Investigations, and Resources for Teaching Evaluation.

**Galapagos Giant Tortoise**
[http://www.rit.edu/~rhrsbi/GalapagosPages/Tortoise.html](http://www.rit.edu/~rhrsbi/GalapagosPages/Tortoise.html)
This site is an in-depth and advanced study of the Galapagos Tortoise, including details and charts about 15 different races of the species.

**Galapagos.com’s Wildlife Gallery**
Learn about the wildlife of the Galapagos, or visit the rest of this site to learn more about the history, geology and environment of the Galapagos Islands.
DISCUSSION QUESTIONS ANSWER KEY:

Elementary
1. Bones of small birds and rodents.
2. 100 years
3. Crabs, seal pups
4. Unusual fish, sea cucumbers, and eels.
5. Answers will vary. Students should focus on “why” to explore their interests and what they learned.

Intermediate
1. Tortoises: Tortoises adapted different shells on different islands, based on their needs with their environment. Tortoises with low shells feed near ground, while tortoises with high, arched shells can reach leaves that other animals can’t reach. Both evolved from one species of tortoise. Finches: Over 40 different species of finches with different beaks that have evolved over time. Some beaks evolved to function best at cracking heavy seeds, while thinner beaks evolved in some in order to catch tiny insects.
2. When their body temperatures are warm enough from the hot sun, they descend from their rocks, enter the sea, and swim to find seaweed near the shore.
3. Floating on vegetation, or “island hopping”.
4. 1%
5. Because so little of the sea floor or deep sea has been explored. Just in this trip, 30 new species were discovered. This shows how much more must have never been discovered to date. “Great frontiers” of our past include the exploration of space, the continent of North America, and “The West” (i.e. the western U.S.)
6. A fish with leg-like fins; a small, unusual eel; a sea cucumber that looks like a jellyfish.

Advanced
1. Formed only 3 million years ago, it is evident, especially while diving beneath the ocean’s surface, that the islands are still being formed. The vents that emit mineral-laden gasses and create a rich environment for the marine life are evidence of the continual creation process.
3. Herbivore animal species survive by eating the surrounding vegetation. The plants evolve, as a matter of survival, to resist against this. Both plant and animal must survive within a given climate and environment, which also shapes their existence and evolution. For example, the giant prickly pear cactus was the favorite food of the Galapagos land iguana. It is theorized that it grew tall and treelike as a defense against its predator, the iguana. Yet both the iguana and the cactus have specific characteristics that allow them to live in this hot, dry environment.
4. “Perennial” suggests an entity that lives throughout the year, and has continual growth and development. “A perennial source of new things” is, in a way, a contradiction. Perennial suggests continual existence, rather than brand new existence. Therefore, Darwin could be making a statement about the adaptations of continual life, and life’s ability to create “new” versions of itself—new adaptations and new species.
More SOCIAL SCIENCE DVD Learning Guides available at www.hlntfamily-estore.com:

- A is for Adam: The Gospel from Genesis
- Ancient Secrets of the Bible: Battle of David and Goliath | Samson
- Ancient Secrets of the Bible:
  - Moses' 10 Commandments/Red Sea Miracle
  - Noah's Ark | Ark of the Covenant
  - Sodom and Gomorrah | Walls of Jericho
  - Tower of Babel | Shroud of Turin
  - Battle of David and Goliath / Samson
- Christianity: The First Thousand Years
- Christianity: The Second Thousand Years
- Heritage: Civilization and the Jews - Disc 1, 2, 3
- In the Footsteps of the Holy Family
- Inside the Vatican
- Jesus and His Times (Disc 1, 2)
- Mysteries of the Bible: The Bible's Greatest Heroes - Disc 1
- Mysteries of the Bible: The Bible's Greatest Heroes - Disc 2
- Mysteries of the Bible: The Greatest Stories (Movie Disc 1)
- Raising Godly Children in an Ungodly World
- The End Times: In the Words of Jesus
- The Exodus Revealed: Search for the Red Sea Crossing
- The Face: Jesus in Art
- The Gates of Jerusalem: A History of the Holy City
- The Greatest Story Ever Told Disc 1
- The Last Days
- The Message: The Story of Islam
- Where Jesus Walked
- Africa: The Serengeti
- Africa: Volume 1, 2, 3, 4
- Alaska: Spirit of the Wild
- American Wonders: National Parks of the West
- America's Historic Trails:
  - The California Trail and El Camino Real
  - The Great Wagon Road and Wilderness Trail
  - Mormon Trail and California's Mission Trail
  - The Old Post Road
  - The River Road and The Natchez Trace
  - The Yukon Gold Rush Trail
- America's National Parks Disc 1, 2
- Best of Travels in Europe: British Isles
- Best of Travels in Europe: Italy
- Best of Travels in Europe: Spain & Portugal
- Big Sur: California Coast
- Bryce & Zion National Parks
- Discovering Egypt
- Discovering England
- Discovering France
- Discovering Hawaii
- Discovering Ireland
- Discovering Italy
- Discovering Spain
- Ends of the Earth: Death Valley
- Everest: The Death Zone
- Galapagos
- Glacier National Park
- Grand Canyon National Park
- Hail Columbia!
- Imax: Amazing Journeys
- Imax: Hidden Hawaii
- Imax: India Kingdom of the Tiger
- Imax: The Great Barrier Reef
- Imax: Zion Canyon - Treasure of the Gods
- Into Thin Air: Death on Everest
- Learn World Geography
- Adventures in Wild California
- Journey into Amazing Caves
- National Parks of Alaska
- Niagara: Miracles, Myths & Magic
- Super Cities: Bankok
- Super Cities: Florence
- Super Cities: Hong Kong
- Super Cities: Istanbul
- Super Cities: London
- Super Cities: Madrid
- Super Cities: Mexico City
- Super Cities: Paris
- Super Cities: Rome
- Super Cities: Venice
- The Last Place on Earth - Disc 1, 2 & 3
- The Saltmen of Tibet
- The Secret Abyss of Movie Cave
- Travel the World By Train: Central America
- Travel the World by Train: South America
- Wild Australia: The Edge
- Yellowstone National Park
- Yosemite National Park
- American Government, Part II
- Election 2000
- For the People: Learn About American Government
- National Geographic: Inside the Pentagon
- The American President