

# *The Jeff Corwin Experience*

## *The Galápagos Islands: Land of Evolutionary Change*

### Teacher's Guide

**Grade Level:** K-8

**Curriculum Focus:** Life Science

**Lesson Duration:** Three class periods

#### **Program Description**

Jeff follows the evolutionary footsteps of Charles Darwin in the archipelago known as The Galápagos. He encounters marine and land iguanas, giant tortoise, as well as a whole new species that has evolved since Darwin's time.

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#### **Video Index**

##### **Segment 1: Welcome to the Galápagos Islands (8 min.)**

###### *Description*

Join Jeff on the Galápagos Islands, a unique habitat that is home to some fascinating animals. Observe the place where Charles Darwin developed the theory of evolution.

###### *Pre-viewing question*

What is unique about the Galápagos Islands?

Answer: Answers will vary, but some students may mention the islands' isolation has allowed many types of wildlife to evolve into species found nowhere else on Earth.

###### *Post-viewing question*

What is the difference between marine and land iguanas?

Answer: Marine iguanas get their food from the ocean; land iguanas live off the land.

##### **Segment 2: Plaza Sur Island (10 min.)**

###### *Description*

Check out Plaza Sur's sea lions. Then go underwater and observe what Darwin didn't see: sharks and unusual penguins.

###### *Pre-viewing question*

Why didn't Darwin see the creatures living in the ocean?

Answer: Answers will vary, but some students may correctly guess that he didn't have underwater equipment.

***Post-viewing question***

Why is it important for penguins to take good care of their feathers?

Answer: A half-inch thick layer of very dense feathers is all the protection the penguins have from the cold waters that surround the Galápagos.

**Segment 3: More Islands, More Wildlife (11 min.)**

***Description***

Sail to the Santa Cruz and Española Islands. Meet the blue hill tortoise and learn why adult masked boobies raise only one offspring at a time.

***Pre-viewing question***

Why do you think blue hill tortoises are being raised in captivity?

Answer: Answers will vary, but some students may say that the animals in the wild are threatened.

***Post-viewing question***

What is an interesting characteristic of the marine iguanas of Española?

Answer: They have different colors.

**Segment 4: On Isabela Island (5 min.)**

***Description***

Travel to Isabela Island and see a unique creature – a cross between a marine and land iguana. Then check out the Sierra Negra volcano, with one of the world's largest calderas.

***Pre-viewing question***

Why don't animals on the Galápagos have predators?

Answer: Answers will vary, but some students may mention that the animals are herbivores and that no new animal species have been introduced.

***Post-viewing question***

What will determine whether the cross between a marine and land iguana will survive?

Answer: If the animal can reproduce, it may survive.

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## **Lesson Plan**

### ***Student Objectives***

- Research land and marine iguanas of the Galápagos Islands.
- Create a booklet showing what these animals look like, what their habits are, and their current status.
- Discuss the problems that iguanas have had in recent times.



## Materials

- *The Jeff Corwin Experience: The Galápagos Islands: Land of Evolutionary Change* video and VCR, DVD and DVD player
- Computer(s) with Internet access
- Newsprint and markers
- Paper and pencils
- Colored pencils and markers

## Procedures

1. Begin the lesson by asking students what they know about Darwin and the Galápagos Islands. Write down their ideas on a sheet of newsprint. Students may suggest the following:
  - Darwin was a naturalist who explored the Galápagos Islands.
  - Darwin saw several unusual species of animals.
  - Darwin developed the theory of evolution.
  - The Galápagos Islands are off the coast of South America.
2. Tell students that one kind of animal that Darwin saw, and that is still living on the Galápagos Islands, is the iguana, an animal in the lizard family. Two types of iguanas can be found on the Galápagos – the land iguana and the marine iguana.
3. Show students segment 4 of *The Jeff Corwin Experience: The Galápagos Islands: Land of Evolutionary Change*.
4. Divide students into group of three to four; explain that each group is going to research land and marine iguanas to learn more about them. Then they will develop a booklet with text and photographs discussing these animals and their habits. Each member of the group should be responsible for finding at least one image and writing about one aspect of either a land or marine iguana.
5. The following information should be included in their booklets:
  - The types of iguanas
  - What each looks like
  - Which island, or islands, each type of iguana lives on
  - Whether the iguanas' environmental conditions have changed; and, if so, how
6. Give students time in class to work on their booklets. In addition to the video, the following Web sites have useful information:
  - [http://www.galapagosonline.com/Galapagos\\_Natural\\_History/Birds\\_and\\_Animals/Animals/Iguanas.html](http://www.galapagosonline.com/Galapagos_Natural_History/Birds_and_Animals/Animals/Iguanas.html)
  - <http://www.rit.edu/~rhrsbi/GalapagosPages/LandIguana.html#anchor1773679>



- <http://www.rit.edu/~rhrsbi/GalapagosPages/MarineIguana.html>
- <http://www.darwinfoundation.org/terrest/iguana2.html>
- <http://www.darwinfoundation.org/Ourwork/terrest/t8.html>
- <http://www.mindfully.org/Heritage/Marine-Iguanas-Galapagos-OilSpillNYT5jun02.htm>

7. If students do not finish their booklets during class, tell them to complete the assignment for homework. During the next class period, give students time to put together the booklets. Hold a discussion about the Galápagos iguanas and let the groups present their findings to the class. What did students learn about iguanas? How are land and marine iguanas different? How are they similar? How has life changed for iguanas since Darwin's time?

## Assessment

Use the following three-point rubric to evaluate students' work during this lesson.

- **3 points:** Students were highly engaged in class and group discussions; researched the topic carefully and thoroughly; produced an accurate, visually interesting, and complete booklet that included all of the requested information.
- **2 points:** Students participated in class and group discussions; researched the topic satisfactorily; produced an adequate booklet that included most of the requested information.
- **1 point:** Students participated minimally in class and group discussions; did not research the topic completely; produced an incomplete booklet that included little or none of the requested information.

## Vocabulary

### archipelago

*Definition:* A group of islands

*Context:* The Galápagos is an archipelago, which includes the islands of Fernandina, Isabela, Santiago, Santa Cruz, Floreana, and Española.

### Charles Darwin

*Definition:* An English naturalist who explored the Galápagos Islands in 1831 and developed the theory of evolution based on his observations

*Context:* Charles Darwin determined that animals that adapt best to their environment are more likely to survive and reproduce than those that do not adapt.

### Galápagos

*Definition:* A group of islands located about 960 kilometers (600 miles) west of South America

*Context:* Scientists continue to explore the Galápagos because it is a living laboratory of how animals adapt and change.



## **iguana**

*Definition:* A name for several types of large lizard

*Context:* The marine iguana of the Galápagos is the only species of iguana that can survive in a saltwater environment.

## **Academic Standards**

### **National Academy of Sciences**

The National Academy of Sciences provides guidelines for teaching science in grades K-12 to promote scientific literacy. To view the standards, visit this Web site:

<http://books.nap.edu/html/nses/html/overview.html#content>.

Grades K-4

- Life Science: Organisms and environments

Grades 5-8

- Life Science: Populations and ecosystems, Diversity and adaptations of organisms

### **Mid-continent Research for Education and Learning (McREL)**

McREL's Content Knowledge: A Compendium of Standards and Benchmarks for K-12 Education addresses 14 content areas. To view the standards and benchmarks, visit

<http://www.mcrel.org/compendium/browse.asp>.

- Language Arts – Viewing: Uses viewing skills and strategies to understand and interpret visual media; Writing: Gathers and uses information for research purposes
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## **Support Materials**

Develop custom worksheets, educational puzzles, online quizzes, and more with the free teaching tools offered on the Discoveryschool.com Web site. Create and print support materials, or save them to a Custom Classroom account for future use. To learn more, visit

- <http://school.discovery.com/teachingtools/teachingtools.html>

