

Tortoises, Penguins, and Sea Lions, Oh My!

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Grade Level 4 and 7
Duration 1-4 class periods

National Standards

GEOGRAPHY

Element 1: The World in Spatial Terms

1. How to use maps and other geographic representations, geospatial technologies, and spatial thinking to understand and communicate information

Element 2: Places and Regions

4. The physical and human characteristics of places

Element 3: Physical Systems

7. The physical processes that shape the patterns of Earth's surface

Element 5: Environment and Society

14. How human actions modify the physical environment

Element 6: The Uses of Geography

17. How to apply geography to interpret the past

18. How to apply geography to interpret the present and plan for the future

AZ Standards

SCIENCE

Earth and Space

4.E1U1.6 Plan and carry out an investigation to explore and explain the interactions between Earth's major systems and the impact on Earth's surface materials and processes.

4.E1U1.8 Collect, analyze, and interpret data to explain weather and climate patterns.

7.E1U1.6 Construct a model to explain how the distribution of fossils and rocks, continental shapes, and seafloor structures provides evidence of the past plate motions.

Life Science

4.L4U1.11 Analyze and interpret environmental data to demonstrate that species either adapt and survive, or go extinct over time.

ELA

Reading

Key Ideas and Details

4.RI.3 Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.

S7.RI.3 Analyze the interactions between individuals, events, and ideas in a text (e.g., how ideas influence individuals or events, or how individuals influence ideas or events).

Writing

Production And Distribution Of Writing

4.W.4 and 7.W.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

Arizona Social Science Standards

GEOGRAPHY

The use of geographic representations and tools help individuals understand their world.

4.G1.1 Use and construct maps and graphs to represent changes in the Americas over time.

7.G1.1 Use and construct maps and other geographic representations to explain the spatial patterns of cultural and environmental characteristics.

Human-environment interactions are essential aspects of human life in all societies.

4.G2.1 Compare the diverse ways people or groups of people have impacted, modified, or adapted to the environment of the Americas.

7.G2.2 Analyze cultural and environmental characteristics that make places both similar and different.

Examining human population and movement helps individuals understand past, present, and future conditions on Earth's surface.

7.G3.2 Analyze how relationships between humans and environments extend or contract patterns of settlement and movement.

Global interconnections and spatial patterns are a necessary part of geographic reasoning.

7.G4.1 Analyze cultural and environmental characteristics among various places and regions of the world.

Overview

The Galapagos Islands are a unique region of the world that students know little about. Understanding what makes these islands so unique and fragile will

help students to develop a better sense of the need to protect such places.

Purpose

In this lesson, students will learn about the geography, geology, climate, and animals of the Galapagos Islands. They will come to realize how unique this area is and why its preservation is important. They will also integrate map reading skills with their writing skills to write a brochure about the islands.

Materials

- Computer and projection device
- Galapagos Islands map
https://geoalliance.asu.edu/sites/default/files/maps/Galapagos_Is.pdf
- Ecuador and the Galapagos Islands map
https://geoalliance.asu.edu/sites/default/files/maps/GI_Eq.pdf
- Galapagos Island movie
- Journey to the Galapagos PowerPoint
- Galapagos Islands Fact Sheet
- Western Hemisphere map
<https://geoalliance.asu.edu/sites/default/files/maps/WEST-HEM.pdf>
- Earth's Plates map
<https://geoalliance.asu.edu/sites/default/files/maps/PlateTectonicsLabeled.pdf>
Galapagos Islands Ocean Currents (unlabeled)
<https://geoalliance.asu.edu/sites/default/files/maps/GIOC.pdf> and (labeled)
https://geoalliance.asu.edu/sites/default/files/maps/GIOC_L.pdf maps
- Galapagos Islands Fact Quiz and Answer Key
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- Galapagos Animal Sort Power Point
- Galapagos Animal Sort and Answer Key
- Galapagos Islands Assessment and Key
- Galapagos Islands Brochure Writing Prompt
- Galapagos Brochure Scoring Guide
- Computer lab and Internet

Objectives

The student will be able to:

1. Locate and label human and physical features on a map.
2. Describe the physical and human characteristics of a place
3. Explain the effects of human settlement on the natural environment.
4. Create an informational brochure using computer technology.

Procedures

Prerequisite Skill: Students should know how to use the Internet to research a topic.

Note: The Galapagos Fact Sheet may need to be read by the teacher and explained for fourth graders. Also, this lesson can be 4 sessions or less.

Teachers will need to decide if all sessions are applicable to their curriculum goals.

SESSION ONE

1. Explain to students they are going to learn about the Galapagos Islands and why we should care about this unique area of the world.
2. Create a KWL chart and have students contribute what they know to the K column. Then have them create questions for the W column as to what they want to know about the islands.
3. Tell the students that some of their questions might be answered by looking at maps of the islands. Project the Galapagos Islands map https://geoalliance.asu.edu/sites/default/files/maps/Galapagos_Is.pdf and the Ecuador and the Galapagos Islands map https://geoalliance.asu.edu/sites/default/files/maps/GI_Eq.pdf so students understand where the islands are located.
4. Ask a few students what they have just learned. Look back at the KWL chart and add information to the L column.
5. Show either the Galapagos Islands movie (4 minutes) or the Journey to the Galapagos PowerPoint (125 slides) to give students an overview of the landscape, plants and animals.
6. Conclude class with adding more information to the L column.

SESSION TWO

7. Distribute the Ecuador and the Galapagos Islands map.
https://geoalliance.asu.edu/sites/default/files/maps/GI_Eq.pdf/
8. Distribute and project the Galapagos Islands Fact Sheet. Instruct students to highlight or underline important information as they read along. Model this on the projected version of the fact sheet.
9. As the Fact Sheet is being read, project the appropriate maps so students understand the location of the Galapagos and the ocean currents that affect the islands. The maps to project are:
 - a. Western Hemisphere
 - b. Ecuador and the Galapagos Islands

- c. Earth's Plates
 - d. Galapagos Islands Ocean Currents
10. Model for students how to label their Ecuador and the Galapagos Islands map with the following:
- a. Galapagos Islands
 - b. South America
 - c. Ecuador
 - d. Equator
 - e. Pacific Ocean
 - f. Nazco Plate
 - g. Draw and name the ocean currents
11. Distribute the Galapagos Islands Assessment. Instruct students that they may use their Fact Sheet and map to answer the questions. This may be completed as homework.

SESSION THREE

12. Distribute the Galapagos Animal Sort worksheet. Partner students if desired. Tell students they are going watch a PowerPoint on the animals of the Galapagos Islands and that while viewing, they are to answer the questions on the Animal Sort. Take time to review the questions before showing the PowerPoint and give time during the viewing for students/partners to answer questions.
13. At the conclusion of the Power Point, give students time to complete the three short answer questions, then collect.

SESSION FOUR

14. Distribute the Galapagos Islands Brochure Writing Prompt. Tell students they are going to create a brochure explaining the Galapagos Islands. They may also use their Fact Sheet, maps, and other resources including the internet. Go over the prompt and allow time for questions. The remainder of the class period is to be used to work on the brochure, and it can be completed as homework.

Assessment

Geography

Animal Sort Worksheet may be used for a geography grade. Mastery will be 16 out of 20 correct.

Ecuador and the Galapagos Islands map may be graded for correct labels in correct locations. Mastery will be set at 100%.

Geography and Science

The Galapagos Assessment can be used for a science grade. Mastery will be 8 out of 10 correct.

ELA and Geography

Student brochures may be used for a writing grade and can be graded using the Galapagos Brochure Scoring Guide. A score of 18 out of 22 points would be considered mastery.

Extensions

Students could go to the UNESCO World Heritage Sites website and research one of the World Heritage Sites to create an informational brochure.

Sources

Lectures by naturalists and guided field studies while on Lindblad Expeditions cruise of the Galapagos Islands.

[Birds, Mammals, and Reptiles of the Galapagos Islands](#) by Andy Swash and Rob Still

[World's Last Great Places, Galapagos Islands-Land Of Dragons](#) by the National Geographic Society

[Galapagos-The Islands That Changed The World](#) by the BBC