

Incredible Islands

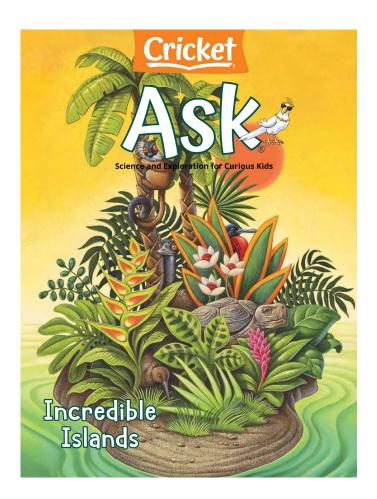
Life on an island differs from life on the mainland in many fascinating and mysterious ways. This month's issue of ASK magazine explores islands big and small and provides readers with interesting facts regarding the formation and erosion of these landforms. The adaptations of the animals and the complexities of these habitats are explained using bright photographs and informative text.

CONVERSATION QUESTION

How is island life unique?

TEACHING OBJECTIVES

- Students will learn about a variety of islands and how they are formed.
- Students will learn how an island habitat directly affects its animal wildlife.
- Students will learn why rapidly rising sea levels are a cause for concern.
- Students will obtain and classify information.
- Students will examine the biological process of evolution.
- Students will analyze problem-and-solution relationships.
- Students will conduct research to learn about the ancient supercontinent Pangaea.
- Students will research island animals.
- Students will write a persuasive essay.



In addition to supplemental materials focused on core STEM skills, this flexible teaching tool offers vocabulary-building activities, questions for discussion, and cross-curricular activities.

SELECTIONS

- How to Make an Island
- Expository Nonfiction, ~890L
- Wild Islands

Expository Nonfiction, ~850L

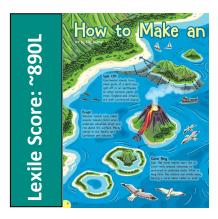
Eyes on the Tide

Expository Nonfiction, ~920L

How to Make an Island

pp. 6-7, Expository Nonfiction

For many students, the word *island* will evoke images of mysterious castaways or glamorous tropical getaways. This article introduces students to several different island types and explains their origin and characteristics.



RESOURCES

Obtain and Classify Information: Island Vibes

OBJECTIVES

- Students will learn about a variety of islands and how they are formed.
- Students will obtain and classify information.
- Students will conduct research to learn about the ancient supercontinent Pangaea.

KEY VOCABULARY

- tectonic plates (p. 6) gigantic pieces of Earth's crust and uppermost mantle
- reef (p. 6) a raised area on the ocean floor that is made of rock, coral, or sand
- tide (p. 7) the rise and fall of the levels of the ocean

ENGAGE

Conversation Question: How is island life unique?

Display the title of the article: "How to Make an Island." Then have students gather in small groups to discuss their ideas about how islands are formed. After the brainstorming session, ask students to share their ideas. List these on the board. After students read the article, review the list together to check the accuracy of students' ideas.

INTRODUCE VOCABULARY

Post and discuss the three vocabulary words and definitions. Have students Think-Pair-Share with a partner. Give them the following directives, one at a time:

- 1. What do you think happens when **tectonic plates** collide?
- 2. What happens to the ocean's water at high tide?
- 3. What marine life would you expect to find living on a **reef?** Emphasize the key words as they are revealed in the reading.

READ & DISCUSS

As a post-reading activity, discuss the following questions. Have pairs of students choose one question to investigate further.

- 1. What might cause parts of a land mass to split off?
- 2. How can the movement of tectonic plates create a coral island?
- 3. How do barrier islands protect the shoreline?
- 4. Why and how are artificial islands built?

SKILL FOCUS: Obtain and Classify Information

INSTRUCT: Guide students to obtain information from the text, captions, and photos in the article. Remind them that the article was written to teach readers about the traits and development of a variety of island types. Introduce the *Obtain and Classify Information: Island Vibes* worksheet. Instruct students to correctly match each island type to its method of formation. Explain that students may use other information sources, such as nonfiction books and websites, to answer the Think Tank questions at the bottom of the worksheet.

ASSESS: Review worksheets with the class and discuss. Provide pairs of students with materials (clay, sand, dough, recyclables, etc.) to create their own artificial island. Have students do an "island walk" around the classroom to appreciate their classmates' creations.

FXTFND

Social Studies Review the names of the seven continents. Then discuss the general locations and climates of each continent. (Be sure students know which continent they live on!) Next, teach the class about Pangaea—the supercontinent that incorporated almost all of the land masses on Earth during an early geologic time period—and challenge students to "dig up" some interesting facts about it.

Island Vibes

Obtain and Classify Information Draw lines to match each island type on the left with the description of how it is formed on the right. Refer to "How to Make an Island" for clues to the answers.

Island Type		How It Is Formed		
1.	coral island	A.	a part of the mainland is cut off when the tide is high	
2.	artificial island	В.	a reef near an eroded volcano is lifted up by shifting tectonic plates	
3.	continental island	C.	a long, narrow strip of sand or coral builds up offshore from a larger island or the mainland	
4.	oceanic island	D.	an undersea volcano erupts and rises above the surface	
5.	barrier island	E.	part of a land mass breaks off when the earth moves due to an earthquake or shifting tectonic plates	
6.	tidal island	F.	humans make it by using a variety of methods	



THINK TANK: Using information from the article and other sources, classify the islands below.

1. The Hawaiian Islands are	islands.
2. Ireland is a	island.
3. The Bahamas are	islands

Wild Islands

pp. 12-17, Expository Nonfiction

Readers will be fascinated to discover that animals change size, abilities, and appearance as they evolve to become suited for island life. Beautiful wildlife photographs enhance the content of this article.



RESOURCES

Biological Process: Island Life

OBJECTIVES

- Students will learn how an island habitat directly affects its animal wildlife.
- Students will examine the biological process of evolution.
- Students will conduct research on island animals.

KEY VOCABULARY

- evolve (p. 12) to change or develop slowly
- *traits* (p. 14) inherited characteristics
- refuge (p. 16) a place that provides shelter or protection from danger

ENGAGE

Conversation Question: How is island life unique?

Lead a class discussion about how humans adapt to their surroundings. Have students consider how their own behaviors, eating habits, and appearance may differ in the following places: home, school, place of worship, family function, entertainment venue. Inform students that animals also change according to their surroundings.

INTRODUCE VOCABULARY

Post and review the three vocabulary words. Inform students that these terms will be found in the article. Have students use the title and the vocabulary terms to predict the content of the article. Revisit predictions after students read the article. Remind students to highlight the key vocabulary terms as they come across them in the article.

READ & DISCUSS

Have students read the article independently. Then read the article aloud, pausing when answers to the questions below are revealed.

- 1. What are the dangers for animals living on an island?
- 2. How did plants and animals come to settle on the empty islands of the Galápagos?
- 3. Explain Charles Darwin's theory of natural selection.
- 4. Explain the trend called "island rule."
- 5. Why are human travelers often a threat to native species?

SKILL FOCUS: Biological Process of Evolution

INSTRUCT: This article presents readers with detailed information about the many ways that island animals evolve from their mainland ancestors. Present the *Biological Process: Island Life* graphic organizer. Tell students they will explain the changes that occur as the animals evolve for island living. Point out that they will need to consult the article and use critical thinking skills to record accurate information that relates to the process as outlined in the article.

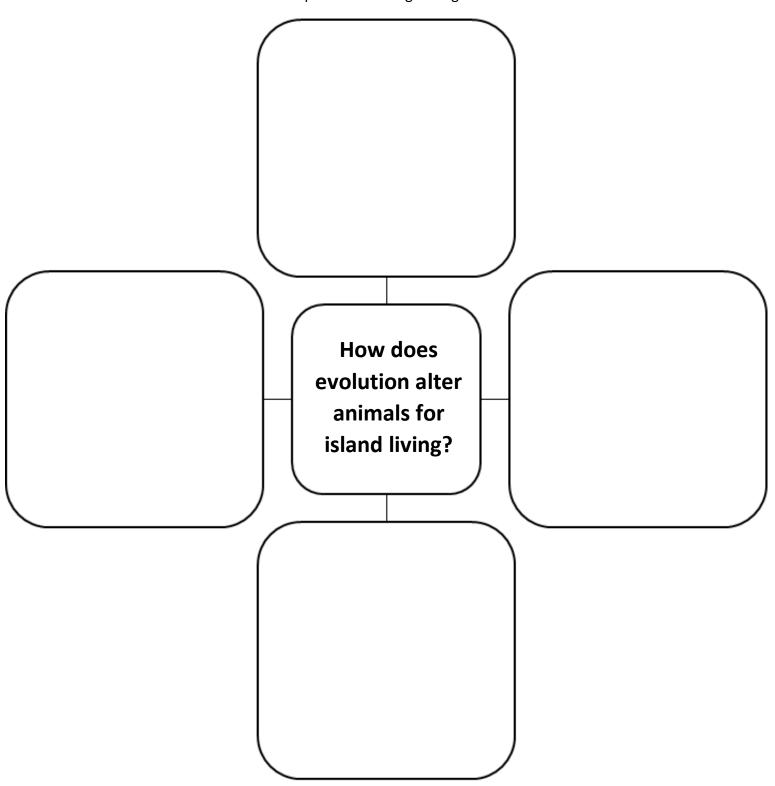
ASSESS: Converse with students as they are working. Pose this question: In what ways do you think humans have to adapt to life on an island?

FXTFND

Research There are over a dozen island animals referenced in this article. Arrange the class into small groups and assign each group a different island animal to study. Instruct groups to find facts about their animal's habitat, evolutionary traits, diet, and appearance. Also tell them to find a few fun facts. Have each group create an informational poster that they will use to teach the class about their animal.

Island Life

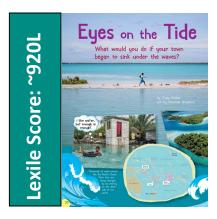
Biological Process Underline sentences in the article that describe the ways in which island animals evolved to differ from their mainland ancestors. Explain each change using details.



Eyes on the Tide

pp. 20-25, Expository Nonfiction

All around the world, islands are shrinking and coasts are flooding. This article explains the causes and effects of these phenomena and describes how islanders are formulating plans to alleviate impending disasters.



RESOURCES

Problem and Solution: Water Woes

OBJECTIVES

- Students will learn why rapidly rising sea levels are a cause for concern.
- Students will analyze problem-andsolution relationships.
- Students will write a persuasive essay.

KEY VOCABULARY

- adapting (p. 24) changing your behavior so that it is easier to live in a particular place or situation
- seawall (p. 24) a wall built to prevent sea waves from coming up onto land and eroding the shore
- drainage channel (p. 25) a natural or constructed watercourse through which water flows

ENGAGE

Conversation Question: How is island life unique?

Generate interest in the topic of islands by engaging students' critical thinking skills. Ask students to imagine they are stranded on a deserted island with two other people. Arrange the class in groups of three. Have them work as a team to list the items that they would choose to have with them. Each islander can choose one comfort item, one tool, and one meal. Caution students to consult teammates and work for the good of the group. The goal is to survive comfortably for one week.

INTRODUCE VOCABULARY

Display the following statements and underline the key vocabulary terms. Review how to infer the meanings of new words by using context clues and background knowledge. Then have students work in pairs to determine the meaning of each word. Reveal definitions.

- 1. The seawall protects buildings and roads from rising oceans.
- 2. I am <u>adapting</u> to living in the desert by drinking more water.
- 3. The <u>drainage channel</u> guided flood water away from roads.

RFAD & DISCUSS

After students read the article, use the questions below to prompt meaningful discussion.

- 1. How does a warming climate affect the lives of islanders?
- 2. Why are hurricanes getting stronger?
- 3. What happens when carbon gases in the air trap too much heat?
- 4. Why are residents of the Cook Islands concerned about rainfall?
- 5. What drastic step was taken by the villagers of Vanua Levu?

SKILL FOCUS: Problem and Solutions

INSTRUCT: Inform students that they will be rereading the article with a partner and highlighting passages that explain how global warming leads to many different problems in need of solutions. Distribute copies of the *Problem and Solution: Water Woes* graphic organizer. Tell students they are responsible for identifying the specific problems islanders are facing and describing islanders' solutions.

ASSESS: Collect and assess students' ability to analyze the problem-and-solution relationship.

EXTEND

Persuasive Essay Read aloud the section that begins on page 24 titled "Whose Problem?" Help students understand the argument made by some island nations: Island countries suffer greatly from pollution created mainly by other countries around the world. As a result, countries around the world should help island nations deal with these problems. Have students write a persuasive essay that presents and supports this argument. Remind students to support their argument with evidence and examples.

Water Woes

Problem and Solution Review the information you highlighted in the article. For each island nation in the chart below, describe the specific problems it faces and the measures it is taking to alleviate these problems.

Island Nation	Problems	Solutions/Efforts
Solomon Islands		
Cook Islands		
Fiji Islands		

Think Tank How are coastal cities such as Miami, Boston, New York, and New Orleans adapting to rising sea levels?