

RESOURCE LIBRARY
ACTIVITY : 1 HR

Sugar's Not Sweet for the Great Barrier Reef

Students identify cause-and-effect relationships between sugar cane production and the health of the Great Barrier Reef in Australia.

GRADES

6 - 8

SUBJECTS

Biology, Geography, Human Geography

CONTENTS

2 Images, 1 PDF, 1 Video

OVERVIEW

Students identify cause-and-effect relationships between sugar cane production and the health of the Great Barrier Reef in Australia.

For the complete activity with media resources, visit:

<http://www.nationalgeographic.org/activity/sugars-not-sweet-for-great-barrier-reef/>

Program



DIRECTIONS

1. Show students photos and distribute the worksheet.

Show students the photos of the Great Barrier Reef and a sugar cane field in Australia. Then distribute the worksheet Sugar Cane and the Great Barrier Reef and have students complete

Part I. Tell them to use the latitude and longitude information provided to locate the Great Barrier Reef on their map of Australia, and then to look for the northeastern state of Queensland.

2. Have students brainstorm.

Write the terms *sugar cane* and *Great Barrier Reef* on the board. Brainstorm with students about how the production of sugar cane might be connected to the Great Barrier Reef.

3. Have students complete and simulate Part II of the worksheet.

Have students number the statements in Part II. Then write the same ten statements on individual pieces of paper or poster board. Also write “Sugar Cane Production” and “Great Barrier Reef” on separate pieces of paper. Distribute each of the ten statements to a student in random order. Have individual students stand up and read their statements. As each individual student reads their statement, have the rest of the class identify cause-and-effect relationships and tell each student where to stand between the words “Sugar cane production” and “Great Barrier Reef” so the statements are in the correct order.

4. Have a discussion to prepare students to watch the video.

Inform students that the connection between sugar cane production and the increase of the Crown of Thorns seastar is a theory and still subject to ongoing research. Large numbers of these seastars consume coral faster than it can grow, reducing the coral cover and disrupting the entire coral reef system. Reveal the correct arrangement of statements. (Worksheet order: 8, 2, 9, 4, 6, 3, 5, 1, 10, 7) Emphasize the human connection.

5. Watch the video.

Show Act 5 of “Troubled Waters” from *Strange Days*. Discuss whether the Australian government should implement measures regulating the production of sugar cane by individual farmers.

Modification

For a collaborative activity, have students use the [Australia & Oceania MapMaker Kit](#). In groups, mark the boundaries of the Great Barrier Reef and Queensland. Then use a highlighter to trace the rivers and their tributaries that lead to the Great Barrier Reef. Ask students to identify how many rivers flow into the reef.

OBJECTIVES

Subjects & Disciplines

Biology

Geography

- Human Geography

Learning Objectives

Students will:

- use latitude and longitude coordinates to locate the Great Barrier Reef on a map of Australia
- explain the cause-and-effect relationship between sugar cane production and the increase of the Crown of Thorns seastar

Teaching Approach

- Learning-for-use

Teaching Methods

- Discussions
- Hands-on learning
- Visual instruction

Skills Summary

This activity targets the following skills:

- Critical Thinking Skills
 - Analyzing
 - Understanding

National Standards, Principles, and Practices

NATIONAL GEOGRAPHY STANDARDS

- Standard 14:

How human actions modify the physical environment

NATIONAL SCIENCE EDUCATION STANDARDS

- (5-8) Standard C-4:

Populations and ecosystems

Preparation

What You'll Need

MATERIALS YOU PROVIDE

- Markers
- Poster board

REQUIRED TECHNOLOGY

- Internet Access: Required
- Tech Setup: 1 computer per classroom, Projector, Speakers
- Plug-Ins: Flash

PHYSICAL SPACE

- Classroom

GROUPING

- Large-group instruction

BACKGROUND & VOCABULARY

Background Information

The Great Barrier Reef is the world's largest coral reef ecosystem. It stretches over 1,800 miles. The Great Barrier Reef is the only living thing on Earth that is visible from space.

Prior Knowledge

Recommended Prior Activities

- None

Vocabulary

Term	Part of Speech	Definition
coral	<i>noun</i>	tiny ocean animal, some of which secrete calcium carbonate to form reefs.
Great Barrier Reef	<i>noun</i>	large coral reef off the northeast coast of Australia.
latitude	<i>noun</i>	distance north or south of the Equator, measured in degrees.
longitude	<i>noun</i>	distance east or west of the prime meridian, measured in degrees.

For Further Exploration

Websites

- [PBS: Strange Days on Planet Earth](#)

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