

RESOURCE LIBRARY

ACTIVITY : 1 HR

The Riviera Maya has a Secret

Students locate the Mayan Riviera on a map, watch a demonstration to understand the concept of groundwater held in underground rivers and aquifers, and discuss pollution in the area.

GRADES

6 - 8

SUBJECTS*Biology, Geography, Human Geography, Physical Geography***CONTENTS**

1 PDF, 1 Link

OVERVIEW

Students locate the Mayan Riviera on a map, watch a demonstration to understand the concept of groundwater held in underground rivers and aquifers, and discuss pollution in the area.

For the complete activity with media resources, visit:

<http://www.nationalgeographic.org/activity/riviera-maya-has-secret/>

Program



DIRECTIONS

1. Have students locate Mexico and the Yucatan Peninsula.

Distribute a copy of the worksheet Location of the Mayan Riviera to each student. Have students locate Mexico and the Yucatan Peninsula on their map of North America. Point out the “Riviera Maya.”

2. Build background about the Mayan Riviera.

Tell students that the Mayan Riviera, also known as “Riviera Maya,” is located in Mexico’s easternmost state, Quintana Roo. Explain that it is the 75-mile stretch of Caribbean coastline from the northeastern point of the Yucatan Peninsula southward to the Mayan ruins. Inform students that many people vacation in this region for the warm climate, sandy beaches, and the world’s second largest coral reef. Point out to students that part of Mexico’s gross domestic product is generated from tourism.

3. Introduce new vocabulary.

Write the word cenote on the board. Inform students that this word is derived from a Mayan term, *dz’onot*, and means a subterranean cavity that contains permanent water. Point out to students that almost all of the fresh water in the Yucatan is contained in these underground cenotes, which are part of the second largest underground river system in the world.

4. Demonstrate how groundwater moves.

Use a sponge and water to help students understand the concept of groundwater held in underground rivers and aquifers. Carefully pour water over the sponge until it is saturated but not dripping. Point out to students that the sponge is holding water, even though they might not be able to see it. Squeeze the sponge into a white bowl and show them that the water in the bowl is as clear as when poured over the sponge. Repeat the process with water containing food coloring. Ask students to speculate about what the colored water might represent.

5. Watch the video.

If possible, show students Act 1 of “Dirty Secrets” from *Strange Days*. Or, find information on the provided Strange Days website. Discuss how increased pollution, due to expanding human activity, affects the groundwater of the Yucatan Peninsula.

6. Have students make connections to their own lives.

Ask students to think about where the water from their own taps actually comes from. It may

come from springs, rivers, reservoirs, or wells. Ask: *Do you live on or near an aquifer? Where is your local water treatment plant?* Have students use the Internet to search their municipality's Department of Public Works for answers and report back.

Extending the Learning

Go to the [PBS](#) website to find out where you can get the *Strange Days* episode "Dirty Secrets."

OBJECTIVES

Subjects & Disciplines

Biology

Geography

- [Human Geography](#)
- [Physical Geography](#)

Learning Objectives

Students will:

- locate Mexico, the Yucatan Peninsula, and the Mayan Riviera on a map
- describe the underground river system in the area
- apply their new understandings in order to identify the source of the water they use every day

Teaching Approach

- Learning-for-use

Teaching Methods

- Demonstrations
- 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 F-2:

Populations, resources, and environments

Preparation

What You'll Need

MATERIALS YOU PROVIDE

- Clear cups or bowls
- Colored pencils
- Food coloring
- Markers
- Sponge
- Water

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 Mayan Riviera is the 75-mile stretch of Caribbean coastline from the northeastern point of the Yucatan Peninsula southward to the Mayan ruins.

Prior Knowledge

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Recommended Prior Activities

- None

Vocabulary

Term	Part of Speech	Definition
aquifer	<i>noun</i>	an underground layer of rock or earth which holds groundwater.
cenote	<i>noun</i>	natural sinkhole or reservoir where groundwater is available.
groundwater	<i>noun</i>	water found in an aquifer.
pollution	<i>noun</i>	introduction of harmful materials into the environment.
watershed	<i>noun</i>	entire river system or an area drained by a river and its tributaries.

For Further Exploration

Websites

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

FUNDER



Engineered for life

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