



Day Four Full Lesson Plan

Introduction to Great Lakes Maritime Archaeology, the Antelope

SUMMARY

Teacher introduces maritime archaeology as a profession that uses evidence to investigate shipwrecks and other historical events within the aquatic environment. Students explore the possible intended and unintended consequences of ROV technology. Students compare using an ROV in a pool environment versus real-world maritime archaeology conducted within the Great Lakes. Students are introduced to a maritime archaeologist and the Antelope, a schooner that sank in Lake Superior in 1897.

LEARNING OBJECTIVES

I can describe some of the responsibilities/duties of a maritime archaeologist.

I can identify various uses for underwater ROV technology and possible unintended consequences of underwater ROV use.

I can compare and contrast use of ROV technology in a pool and in a Great Lake.

LESSON CONCEPTS

Exploration and understanding of Great Lakes interactions and links among diverse ecosystems and people are ongoing. Such exploration offers great opportunities for inquiry and investigation.

New technologies and methods of observation are expanding our ability to explore the Great Lakes.

Exploring, understanding and communicating about the Great Lakes ecosystem are interdisciplinary efforts. They require close collaboration among professionals in science, technology, engineering and math, as well as public outreach and education.

Maritime archaeologists represent one profession that has helped us understand the history of life along, within and upon the Great Lakes.

ACADEMIC VOCABULARY

Looting, salvaging, archaeological documentation

PRIOR KNOWLEDGE

What students need to know and be able to do prior to this lesson:

Students must be able to observe and describe a situation or object in enough detail to complete compare and contrast activity.

Student preferences and interests to consider in preparation for this lesson:

Middle and high school students are considering careers and may not be familiar with maritime archaeology.

Misconceptions and/or misunderstandings that students might have related to this lesson:

Anyone can go to a shipwreck site and remove items at any time without seeking prior permission.

CLASSROOM NEEDS

Computer and LCD projector

DOCUMENTS

For students

File 19 [Comparing and Contrasting: Pool vs. Great Lakes Maritime Archaeology](#)

For educator

File 20 [Antelope Images for Display \(PowerPoint\)](#)

ROV footage of Antelope Shipwreck ([video - 2:18](#)) and ([annotated video - 7:21](#))

Maritime archaeologist describing her work with ROVs ([video - 5:41](#))

Extensions

File 24 [Antelope Summary Sheet](#) (file includes answer key and student worksheet)

File 23 [Antelope Research Resources](#)

LESSON PLAN

GUIDED AND INDEPENDENT PRACTICE (30 MIN.)

ROVs in Maritime Archaeology

1) Discuss ways an ROV could be used with the class.

The Great Lakes can be a dangerous place. There have been many shipwrecks. In some cases, evidence of the wrecks has been found. In other situations, we know the ship sank, but we don't know precisely where. There are many mysteries surrounding shipwrecks that can be answered by using technology like ROVs.

New technology like ROVs provide new methods to observe and expand our abilities to explore the Great Lakes. Freshwater scientists use such tools to monitor underwater conditions in the Great Lakes and provide information to people who make decisions. These decision-makers may be local leaders within the communities along the coasts of the Great Lakes, representatives of state or provincial governments, or even leaders within the federal government. Exploring, understanding and communicating about the Great Lakes takes a lot of different professionals in different fields, such as scientists, engineers, mathematicians, underwater archaeologists and people who share information about the Great Lakes with the public.

2) Have the class list intended and unintended consequences of using an ROV.

Ask the class if they can think of any concerns that people might have about the use of underwater ROVs. Facilitate further reflection and response by asking:

What might an ROV encounter in Great Lakes water?

What might you see if you deployed an ROV in _____ Lake (local waterbody)?

Do you think that there are any unintended consequences of people locating and exploring shipwrecks with ROVs?

3) Introduce a real maritime archaeologist.

Watch and listen to Victoria Kiefer, maritime archaeologist with the Wisconsin Historical Society, discuss her work, specifically how she uses ROVs for research. Ms. Kiefer mentions several intended and unintended consequences of using ROVs in maritime archaeology.

4) Ask the class to reflect on additional positive and negative consequences identified by Ms. Kiefer in the video.

GUIDED AND INDEPENDENT PRACTICE (25 MIN.)

The Antelope

1) Introduce the Antelope by sharing images and watching ROV footage.

On the first day of this unit, we read a story about a fictional ship, the Moonrise, that sailed on Lake Michigan. That story introduced us to vocabulary associated with sailing, life near the Great Lakes in the 1800s and the physical features of the Great Lakes. This part of the lesson will introduce an actual shipwreck in Lake Superior, the Antelope, through images and ROV footage.

There are two versions of the Antelope ROV footage—an unnarrated one (2:17, “The Antelope: What Do You See?”) and a narrated one (7:22, “The Antelope: What Does a Maritime Archaeologist See?”). Have students watch both the unnarrated and narrated versions, starting with the unnarrated one. If you are short on time, consider only watching the narrated version. Before the videos, ask the students to consider how different the conditions are in a lake compared to a pool while they are watching to prepare for the next assignment.

2) Have students complete the Comparing and Contrasting: Pool vs. Great Lakes Maritime Archaeology document.

OPTIONAL EXTENSION

Research the Antelope shipwreck by examining primary sources (ROV footage and enrollment documents) and secondary sources (newspaper articles and a research file). Use these resources to complete the Antelope Summary Sheet (a secondary source).

A primary source is documentation that was made at the time the event occurred or was created by someone who had direct experience with an event. A secondary source is documentation produced by someone who does not have first-hand direct experience with the event. Included in the Antelope Research Resources documents are enrollment documents for the vessel (primary), ROV footage (primary) and newspaper articles (secondary). After reading the resources, students complete the Antelope Summary Sheet.

For more information, the [Wisconsin shipwrecks](#) website is a great starting place to explore Wisconsin’s Great Lakes shipwrecks through ROV footage, historic photographs and archaeological discoveries.

LESSON SUPPORTS

Group work (students who are higher performing can work with lower-performing students).

ASSESSMENT

Completed Comparing and Contrasting: Pool vs. Great Lakes Maritime Archaeology document.
Completed Antelope Summary Sheet (extension activity).

For the complete **ROVe the Great Lakes** curriculum, visit go.wisc.edu/ROVe2.

