FOCUS
Maritime Archeology & Mapping

GRADE LEVEL
4-6 grade physical and social science

VIRGINIA STANDARDS OF LEARNING
(Math) 4.5, 4.6, 4.11, 4.13, 4.15, 4.17, 5.3, 5.8, 5.11; (Science) 5.1c,e, 6.2, 6.11; (Virginia Studies) 1a,d; (Art) 5.4, 5.5, 5.7; (Physical Science) 1, (Humanities/Sciences) 6.7

FOCUS QUESTION
Why is the USS *Monitor* protected?
Why should underwater archeological sites be preserved?
How do archaeologists map underwater sites?
What can we learn about a shipwreck site based on the location of artifacts?

LEARNING OBJECTIVES
Students will have an understanding of plotting coordinates on graphs
Students will learn to incorporate informative reading selections
Students will locate and plot *Monitor* artifacts and describe their significance

MATERIALS
- Wreck Grid paper of *Monitor* site plan (downloadable from http://monitor.noaa.gov/publications/welcome.html)
- "The Naval Battle Between The *Merrimac* and the *Monitor* 1862", mock newspaper, courtesy of NOAA *Monitor* National Marine Sanctuary (downloadable from http://monitor.noaa.gov/publications/welcome.html)
- Pencils
- Mapping the USS *Monitor* Artifact Worksheet (downloadable from http://monitor.noaa.gov/publications/welcome.html)
- Images of artifacts to discover (visit http://monitor.noaa.gov/imagery/welcome.html for images)

PREPARATION
1. Lay out activity materials before students arrive in classroom.

2. Introduce students to the *Monitor* and the *Merrimac* (also known as the CSS *Virginia)* before the activity. More information on the ships and the Battle of Hampton Roads can be found online: http://monitor.noaa.gov and http://monitorcenter.org

TEACHING TIME
One 45-55 minute class period

AUDIO/VISUAL MATERIALS
Power Point or overhead projector to show students artifact images

SEATING ARRANGEMENTS
Students can work in teams of 2, or this activity can be done individually

KEY WORDS
Archaeology- the study of human cultures through the recovery, documentation and analysis of material remains and environmental data, including architecture, biofacts, human remains, and landscapes
Artifact- A human-made object, such as a tool, weapon or ornament, especially those of archaeological or historical interest
Monitor
Merrimac/*Virginia*
Battle of Hampton Roads
Monitor National Marine Sanctuary
Turret- In current military terminology, 'turret' usually refers to a rotating weapon

platform. The *Monitor*'s turret was the first turret ever constructed
Bow- the front end of the ship
Stern- the back end of the ship
Port- the left side of the ship
Starboard- the right side of the ship

BACKGROUND INFORMATION

This activity is based on the surveying techniques that archeologists used to plot where artifacts are found on shipwrecks. The shipwreck site of the USS *Monitor* was located in 1974. The wreck was designated our nation's first national marine sanctuary in 1975. The National Oceanic and Atmospheric Administration (NOAA) protects a one-nautical mile column of water around the shipwreck. The wreck lies upside down in 230 feet of water 16.1 miles off the coast of Cape Hatteras, North Carolina.

Tell students that archaeologists are like detectives. They search for evidence and analyze clues to reach a conclusion. Students will not only map the artifacts into their site plan, but they will use their deductive reasoning skills to answer questions about the wreck specific to their observations. To thoroughly understand some of these concepts, please visit the following website resources for reference:
http://www.cyberpursuits.com/archeo/uw-arch.asp
http://www.culture.gouv.fr/culture/archeosm/en
http://www.pophaus.com/underwater

LEARNING PROCEDURE

1. Define archeology for the students, and discuss the difficulties of working on an underwater site and trying the find the location of artifacts as well (time limit, lack of communication and variable sea states). Explain how each group must work in teams to document and locate the artifacts.

2. Have students read the Naval Battle Between the *Monitor* and the *Merrimac* mock newspaper aloud to familiarize them with the significance of the *Monitor.*

3. Identify the shipwreck location of the *Monitor* for the students (a detailed map of the *Monitor* in the context of the Graveyard of the Atlantic can be found online http://sanctuaries.noaa.gov/pgallery/atlasmaps/monitor.html)

4. Pass out copies of the Mapping the USS *Monitor* artifact worksheet , *Monitor* site plan (or blank grid paper if you prefer your students to create their own site plan), and pencils

5. Explain to the students that their site plan consists of letters and numbers and can be used like the game Battleship

6. Have students identify the bow, stern, port and starboard locations of their site plan as well as the turret. Discuss with the students that the shipwreck site of the *Monitor* looks very different from the images of the *Monitor* before it sank because the *Monitor* sank upside down and the rotating gun turret fell off the ship in the process

7. Using the artifacts sheet, have the students carefully plot the artifacts into their site plan

8. As each artifact is plotted show the students images of these artifacts and discuss why certain artifacts were found in specific locations on the shipwreck site

EXTENSIONS

1. Have the students discuss or write a short essay describing their two favorite artifacts and where they believe additional artifacts will most likely be found.
2. Have the students draw a picture of their favorite artifact. Archaeologists keep a visual record of artifacts discovered by taking photos of them and drawing them.

FOR MORE INFORMATION

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CREDIT

If reproducing this lesson, cite NOAA's *Monitor* National Marine Sanctuary and provide the following URL for more information
http://monitor.noaa.gov/publications/welcome.html