Clash of Armor: the *Monitor* and the *Virginia*

Grade Level: 5th-7th

Length of Lesson: 2-3 Class Periods

Goals:

- Discuss the conversion of the *Merrimack* to the *Virginia*.
- Identify the following locations on a map: Hampton Roads, James River, Newport News, Norfolk, Portsmouth, and Fort Monroe.
- Compare and contrast the *Monitor* and the *Virginia*.
- Discuss and analyze the battle of the Ironclads (March 9, 1862) and its effects.
- Learn about daily life for a *Monitor* sailor.

Core Academic Standards:

- Content Standard 8: Understanding a Text
- Content Standard 9: Making Connections
- Content Standard 13: Nonfiction
- Content Standard 24: Research
- Content Standard 26: Analysis of Media

Materials:

- Instructor Notes (see attached documents)
- Map of Hampton Roads (see attached documents)
- Photographs and Images (see attached documents)
- *The Building of the* Monitor; *The Conversion of the* Merrimack *to the* Virginia (see attached documents)
- *Letters Home: The Life of a* Monitor *Sailor* (see attached documents)
- *Ship's Menu* (see attached documents)
- Optional Materials:
    - Models of the *Monitor* and *Virginia*
    - Computer access

Background

During the Civil War, a naval battle between two ships, the *Monitor* and the *Virginia*, had great implications on ship design and subsequent naval battles. During this lesson, we will discuss the conversion of the Confederate *Merrimack* to an ironclad ship, the *Virginia*, and the following battle with a Union ship, the *Monitor*. We will also discuss how this battle affected the United States' thinking about naval battles and ship building.

Lesson: LAUNCH

1. Ask students to discuss naval battles they may have heard of (in book, film, or history). What was the outcome of those battles? What modifications might help a ship survive a naval battle?

2. Ask if students have ever heard of the battle between the *Monitor* and the *Merrimack* during the US Civil War. Explain that the battle was actually between the *Monitor* and a new ship, the *Virginia*, that was created from the burned-out shell of the *Merrimack*.

3. Use the map to point out where the battle took place, in what is now the modern Hampton Roads harbor between the Hampton Roads Bridge Tunnel and the Monitor/Merrimac Tunnel.

Lesson: INVESTIGATE

1. Break the students up into small groups. Assign each group either the information on building the *Monitor*, or the information on converting the *Merrimack* to the *Virginia* (see materials at the end of the lesson plan).
    a. Give the *Monitor* group a few pictures of the *Monitor* being built, and the *Virginia* group a few pictures of the *Virginia* being converted.

2. Students should read the information in their small groups, and then make a list of bullet-points on the important details about their ship.

3. Once the small groups are finished, make a large Venn diagram on the board, with the *Monitor* on one side and the *Virginia* on the other. Have students help you to fill out the diagram with important aspects of each ship, and any potential commonalities in the middle.

4. Discuss students' opinions: Which ship do they think would be most successful in a naval battle?

5. With the class, discuss the *Virginia*'s first cruise, and the battle at Hampton Roads Harbor. Pose the following questions to the class:
    a. Why did the Union ships sustain so much damage, and the *Virginia* so little?
    b. Were there any drawbacks to the *Virginia*? (inability to sail in shallow water)

6. Discuss the battle between the *Virginia* and the *Monitor*. When you reach the section about firing the guns, ask students to speculate on what the environment inside the *Monitor*'s turret would be like (smoky, hot, deafeningly loud, scary, etc.).

7. After the battle discussion, ask students to share their opinions on which ship *really* won the battle, since both sides declared victory. Ask them why they think that this naval battle was important for the future of shipbuilding.

Lesson: PRACTICE

1. What would life be like as a sailor on the *Virginia* or the *Monitor*? Tell students that, luckily, we have an account of that life by one of the *Monitor*'s sailors, George S. Geer, whose letters to his wife were donated to a museum.

2. Let the students read the snippets from Geer's letters and the "ship's menu" (see resources at the end of this lesson plan). Additionally, if computer access is available, students can go to http://www.marinersmuseum.org/sites/default/files/geer6.swf and listen to audio of longer portions of the letters.

3. Discuss with the class – what was life like for Geer as a sailor? What parts of that life do the students think they would enjoy? What would they dislike, and why?

4. Ask each student to imagine that they are a sailor onboard either the *Monitor* or the *Virginia.* The students will each write a letter – to a parent, friend, sibling, etc. – describing a day in their life aboard the ship. Some students may choose to write about the day of battle.

5. If time remains, ask students to share their letters with each other.

Special thanks to the Mariner's Museum, Newport News, VA

Instructor Notes (1 of 2)

Hampton Roads Harbor Battle

- There were 14 ships blockading the entrance to Hampton Roads, from Fort Monroe to Newport News Point (show students these locations on the map)
- The North held Fort Monroe and the Lower Peninsula. The South held Norfolk and the Southside (again, show students the map).
- On March 8, 1862 the *Virginia* went on her first sea trial fully loaded with ammunition and supplies. (Show picture of Buchanan) Admiral Franklin Buchanan decided to take her immediately into action.
- Heading out of the Elizabeth River towards Newport News, the *Virginia* found the USS *Cumberland* and the USS *Congress* at anchor. This was wash-day for these wooden sailing ships, and when they realized the *Virginia* was coming out, the crews quickly cleared the decks and prepared for battle.
- The USS *Cumberland* shot cannon balls at the *Virginia*, but they just slid off. The *Virginia* returned fire and caused great damage to the *Cumberland's* wooden hull, killing many sailors. 121 sailors were lost on the *Cumberland.*
- Admiral Buchanan ordered the ram to be used. The *Virginia* built up steam and rammed into the side of the *Cumberland*. With the large hole in the side, the *Cumberland* began to sink, but the *Virginia's* ram was stuck, and she began to sink with the *Cumberland*. Luckily, the ram broke off and the *Virginia* decided to move to the *Congress*.
- The *Congress* fired in vain on the *Virginia*; the cannon balls just bounced off. The *Virginia* returned fire with cannon balls and shells of fire. The *Congress* began to burn. So she ran up the white flag and surrendered. The rest of the sailors were evacuated to Newport News Point.
- The *Virginia* then headed for the USS *Minnesota*. The *Minnesota* got caught in a sandbar, running aground in low tide. The *Virginia*, which needs deep water, couldn't follow the *Minnesota* and decided to head back to Portsmouth for the night. They would return at high tide the next day.
- In 4 hours the *Virginia* had sank two major ships in the US Navy and these ships lost 300 men. The *Virginia* only lost 2 men and no serious damage was done to the ship.
- NOTE: March 8th was considered the most disastrous day in US Navy history until December 7, 1941 with the attack on Pearl Harbor.

The Battle between the *Monitor* and the *Virginia*

- While the battle on March 8 was raging, the *Monitor* was sailing into the Chesapeake Bay (show on map). They could not get to Hampton Roads in time to help. When they arrived that night, Captain Worden was told to protect the *Minnesota* in the impending next day battle. (Show picture of Captain Worden)
- At dawn the next morning the *Virginia* headed toward the *Minnesota* to sink her. The *Monitor* then moved out from behind the *Minnesota* and the battle began.

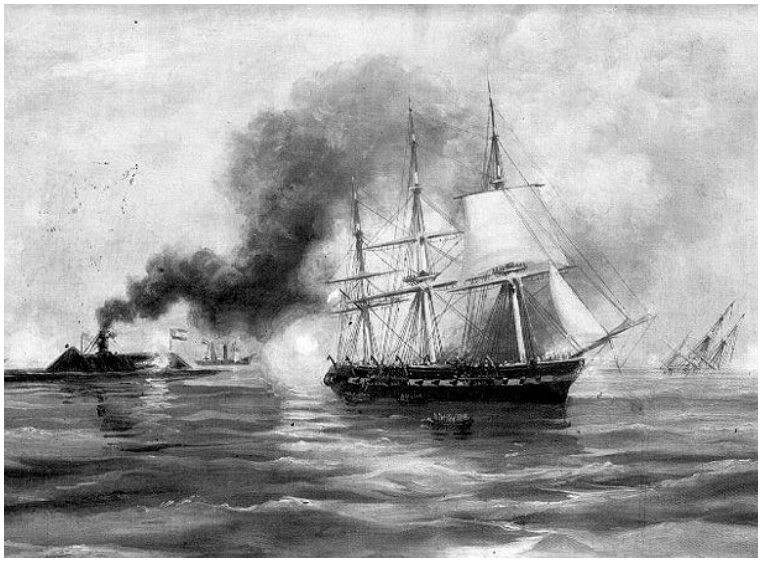
Instructor Notes (2 of 2)

- As they shot cannon at each other, the cannonballs bounced off, but the noise inside the turret and the casemate was deafening.
- About noon, a shell from the *Virginia* hit the *Monitor's* pilot house. Capt. Worden was blinded by the exploding shell. The *Monitor* moved back toward Fort Monroe while Lt. Greene came from the turret to take command of the *Monitor* (Show picture of Greene). As the *Monitor* moved back, Admiral Buchanan and the *Virginia* thought the *Monitor* was retreating.
- Once Lt. Greene took command, the *Monitor* sailed back to the battle, but in that time the *Virginia* had moved back toward the Elizabeth River and home. Lt. Greene thought that *they* were retreating. Since the *Monitor's* orders were to protect the *Minnesota*, he did not go after them.
- The next day the both the Union and Confederate papers claimed victory. The only battle between the two Ironclads was a draw.
- The battle was important because immediately the US Navy realize that wooden ships were soon to be outdated. The legacy of iron and steel was in the future. The idea of Ericsson's revolving turret still exists in today's navy.

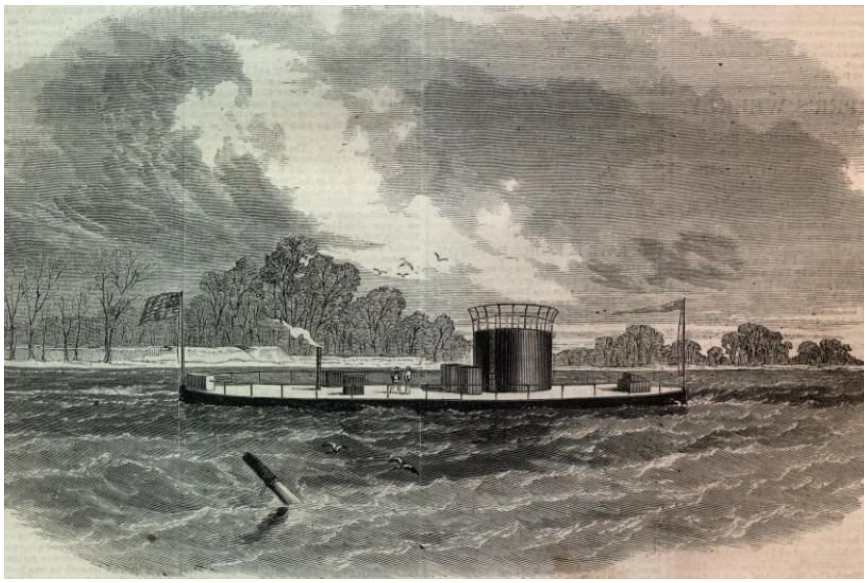
Map of Hampton Roads

Photographs and Images (1 of 3)

Admiral Franklin Buchanan of the *Virginia*
Image Credit: Civil War Trust



The *Virginia* (left) firing into the *Congress*
Painting by Xanthus Smith



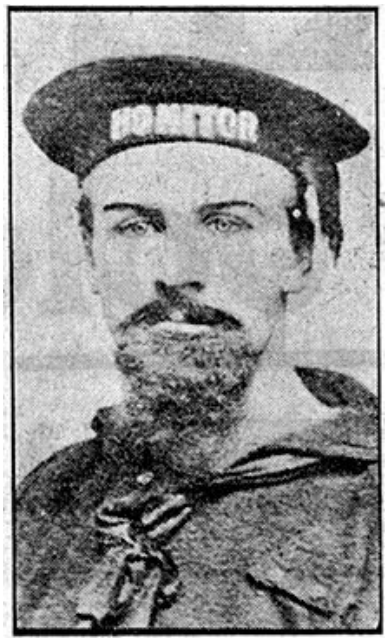
"The Ericsson Steel-Clad Battery 'Monitor'"
Image from Harper's Weekly Journal, 1862

Captain John L. Worden of the *Monitor*
Image Credit: Civil War Trust

Photographs and Images (2 of 3)

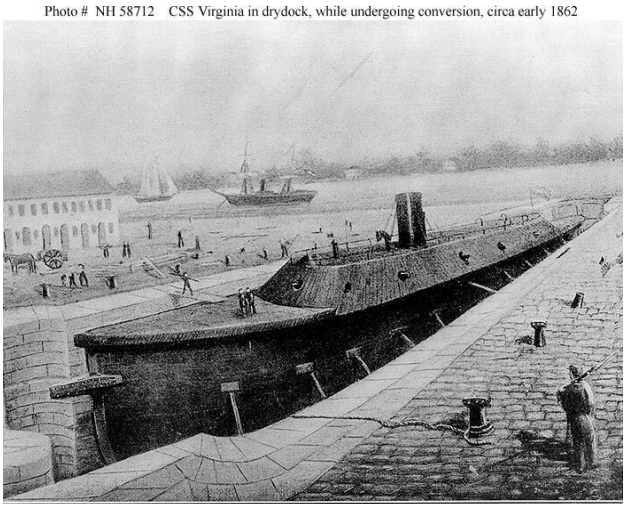
Lieutenant Greene of the *Monitor*
Image Credit: The Mariners' Museum

John Ericsson, Ship Designer
Image Credit: Wikipedia



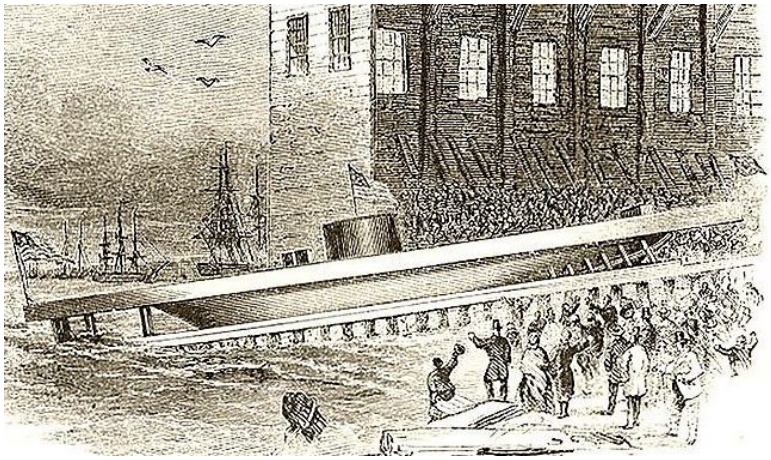
George Geer, *Monitor* crewmember
Image Credit: NOAA

USS *Monitor* Officers
Image Credit: Naval Historical Foundation

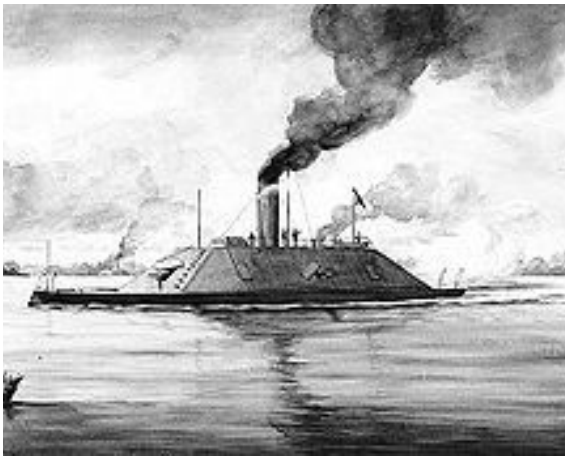


The *Merrimack* in dry dock, being converted
Image Credit: Unknown

Photographs and Images (3 of 3)



Launch of the USS *Monitor*
Image Credit: American Civil War Story



The CSS *Virginia*
Image Credit: 290 Foundation

The *Monitor* and the *Virginia* - painting by Bob Holland
Image Credit: Skipjack Nautical Wares

The Building of the *Monitor*

The Union knew that the Confederate States needed goods from overseas to survive. The Union's General-in-Chief of the Army, **Winfield Scott**, who was from Virginia, developed the **Anaconda Plan**. The idea was to cut off the supply of goods to southern ports – to "strangle" them like an anaconda snake strangles its prey. Union ships were placed in blockade at southern ports, including the Hampton Roads port, to stop Confederate ships from coming in or out of the port.

Through spies, and Southern newspapers, the Union heard about the ironclad *Virginia* being built. An ironclad ship has a covering of strong iron – just like you are "clad" in clothes, the ship is "clad" in metal. The Union knew it would be difficult for the wooden fleet of ships at Hampton Roads to repel such a strong, metal-covered ship.

The Union placed an ad in the Northern newspapers looking for building plans for an ironclad ship. The plans of **John Ericsson**, a Swedish inventor and ship designer, were chosen. The contract called for building the ship in 100 days, so Ericsson sent different parts of the ship to 8 different iron foundries to be built. He could do this because the North had greater manufacturing factories and abilities than the South did.

The *Monitor* was called a cheese box on a raft. A cheese box is a round wooden box that holds cheese such as Brie. The *Monitor* had this nickname because it had a low, flat deck – like a raft – with a revolving turret (the "cheese box"). The turret went 360° around and was able to fire her two guns from any direction. Its rival, the *Virginia*, had more guns, but they could only fire in a limited direction. No other ship had a revolving turret. The turret was constructed of 8 one-inch plates of iron, so the whole thing was 8 inches thick.

The *Monitor* was able to maneuver in the shallow water of bays and rivers. It had a pilothouse on the bow so the Captain and pilot could see to steer the ship. The Captain used a speaking tube to talk with the helm and the turret.

The *Monitor* was completed 18 days late, but no one minded because she was such a strong ship. The *Virginia* was started 6 months before the *Monitor*, but the *Monitor* was finished first. This gives you an idea how industrialism helped the North and slowed the South. The *Monitor* was launched on **January 30, 1862**, and stayed in New York until **March 6, 1862** when she headed for Hampton Roads to fight the *Virginia*.

The *Merrimack* Becomes The *Virginia*

The Union had a navy yard called **Gosport Navy Yard** in Portsmouth, Virginia – in what is now downtown Portsmouth. At the navy yard, they repaired ships, stored ammunition, guns, and other naval supplies. It was the largest US navy yard in the United States.

A ship called the **U.S.S. *Merrimack***, built in 1857, was in need of repairs. She had sailed to Europe, the West Indies and the Pacific Ocean, and was now in bad shape. In 1860, the *Merrimack* was taken to Gosport Navy Yard to be fixed, or refitted as a new ship. But before she could be repaired, on April 17, 1861, Virginia seceded from the Union.

Since the Confederate States did not have a real navy, they needed ships, and all the supplies they could get. So since the Gosport Navy Yard was right in their backyard, Virginia troops moved to capture it and all of its supplies and facilities. The Union knew that the Confederates would be able to take over the navy yard. So to prevent them from getting the supplies and ships they needed, the Union burned the buildings, the supplies, and the ships docked for repairs. Included in the burning was the U.S.S. *Merrimack*.

The Secretary of the Navy for the Confederates was a man named **Steven Mallory**. He had read about British and French attempts at building ironclad ships, and he believed that a small fleet of these strong ships could be built for the struggling Confederate Navy. Ironclad ships are covered in iron, just like you are "clad" or covered in your clothing. This covering of strong iron plating helps to protect ships when they are in battle.

Since the Confederate Navy did not have much money, time, or resources they decided not to build a brand new ship. Instead, they chose to build their first ironclad using the burnt hulk of the *Merrimack*. Although the ship was burnt to the water line (the line where the water hits the sides of the ship) her new engines were still in place and working. The Confederates raised her and began work on the iron covering, which was called a **casemate**. The casemate had a wooden frame and had 4-inch-thick railroad iron laid on top. Since the South did not have many factories, most of the iron came from a single place – **Tredegar Iron Works**, which was in Richmond, VA.

Resources were so limited to the South, it took about 9 months to build the *Virginia*. The new ship was fitted with 10 guns – 4 on each side, and one **fore** (at the front) and **aft** (at the back). The *Virginia* could not swivel her guns around, so she had to be pointing them directly at another ship in order to hit it. The *Virginia* also had a ram attached to the bow, which was made of iron and weighed 1500 pounds. The builders of the *Virginia* also covered the iron casemate with pork fat. This was so that the cannon balls would slide down the side and do even less damage.

The *Virginia* was launched on **February 17, 1862**. She was a large ocean-going ship and took twenty-two feet of water to float, so she was not able to maneuver in small bays or rivers, but she was an ironclad terror on the high seas.

Letters Home: The Life of a *Monitor* Sailor

These excerpts are taken from the letters of **George S. Geer**, a Union sailor on the U.S.S. *Monitor*, written to his wife in 1862. More information on the letters can be found at the Mariners' Museum website.

On the "modern" conveniences aboard ship:
March 2, 1862: "I will commence by telling you what I am writing on. My desk… [is made of] a pail turned upside down, so you see we have not all the improvements of the age."

March 4, 1862: "I generally take the evenings to do my writing. Whenever I write, day or night in my state room, I have to use a candle, it is so dark. My little deck light lets in light enough for all purposes except reading and writing."

On the summer heat:
June 13, 1862: "We took the temperature of several parts of the ship, or rather I did, as I have charge of the Thermometer, and found in my Store Room… it stood at 110; in the Engine Room 127; in the Galley, where they cook… 155; on the Berth Deck where we sleep, 85. I think the hottest day I ever saw in New York was up to 102 in the shade, so you can see what a hell we have. I spend most of my time in pleasant weather under an awning on deck, and sleep there these hot nights."

August 7, 1862: "Hot, hotter, hottest! Could stand it no longer, so last night I wrapped my blanket 'round me and took to our iron deck. If the bed was not soft, it was not so insufferably hot as my pen. What with heat, mosquitoes, and a gouty Captain, I have nearly gone distracted."

On mosquitoes:
August 3, 1862: "I thought I had seen mosquitoes and flies that were a nuisance in NY, but I give in to Virginia. There is no use fighting. You may as well keep still and let them have their fill, because one will only tire himself out and have at last to give in to them."

August 5, 1862: "I had the forethought when at Old Point to buy me a mosquito bar (the only one on board) so that I can sleep at night undisturbed by the pestiferous vermin – that is, when the heat will allow of it. Tonight we will have a scorcher!"

On the food onboard ship:
May 24, 1862: "On Mondays, Wednesdays, and Saturdays we have bean soup, or perhaps a better name would be to call it 'bean water.' I am often tempted to strip off my shirt and make a dive, and see if there really are beans in the bottom that give it the flavor. I think there must be, but I seldom see them. But the Government says beans are very wholesome and strengthening."

July 30, 1862: "A piece of salt beef regularly makes its appearance with the call for dinner. It reappears in the form of hash for supper, and is re-hashed for breakfast the next morning. If vegetables exist in any portions of the civilized world, they are intangible to us."

Ship's Menu

Breakfast

-Grog-

An alcoholic drink made of water, weak beer, and rum

-Coffee-

-Sea Biscuits-

Hard crackers cooked with pork fat, salt, and pepper until soft

Sunday Dinner

-Grog-

-Canned Roast Beef-

-Preserved Potatoes and Onions-

These vegetables were bought because they would not spoil quickly

Weekly Dinner

-Grog-

-Bean Soup-

Or, as Geer says, should we call it "Bean Water"…?

Supper

-Tea with Sugar-

-Hard Crackers-

On Special Occasions

-Pickles-

Pickles are a preserved food, so they will keep for a long time

-Butter-

Butter must be eaten quickly, as it spoils in the heat

-Fresh Fish, Oysters, and Crabs-

If a sailor could fish, these fresh items might be available