

Illness and Injury Aboard Naval Ships

Target Grade Level: 4th - 8th

Time for Lesson: 45 minutes

Overview & Major Themes

The lesson will begin with a whole group activity in which the class takes on the role of a surgeon sailing on an early-19th century ship like USS *Constitution*. After that, students will work in small groups to read a scenario about life on a naval ship and then collaborate to either identify the possible illnesses described in their scenario or the injuries that could have resulted from the situation presented.

Objectives	Outcomes	Materials & Resources
To learn about the responsibilities of a ship's surgeon in the early 19th century.	Students will diagnose illness and injury scenarios based on evidence given.	<ul style="list-style-type: none">• Patient symptoms cards, cut out (Appendix 1)• Copies of "Major Diseases during the War of 1812" (Appendix 2)• Copies of each of the four scenarios, cut out ahead of time (Appendix 3)• Drawings that accompany each scenario (Appendix 4)
To get students thinking about illnesses and injuries associated with working on a sailing vessel.	Students will work collaboratively to use evidentiary-based thinking.	
To communicate clearly and collaborate with others.	Students will communicate clearly and collaborate with others.	

Time	Instructional Activity
5 min.	<ol style="list-style-type: none"> 1. Read the Introduction: Life aboard a naval ship at the time of the War of 1812 was extremely difficult. Sailors had to deal with the dangers posed by illness, accidents, and battle injuries. Knowledge about health, disease, and nutrition in the 1800s was still primitive and doctors lacked modern understanding about germs, hygiene, nutrition, and disease. Naval ships like the USS <i>Constitution</i> had a surgeon (doctor) on board who was responsible for the health of a crew of 450-500 sailors. The <i>Constitution</i>'s surgeon from 1812 to 1813 was named Amos Evans. He was only 26 years old. As the ship's surgeon, he had to make life and death decisions about how to deal with the illnesses, accidents, and injuries associated with living and working aboard a naval ship. 2. Tell the students that they will take on the role of the ship's surgeon and attempt to diagnose a disease based on the symptoms presented by a patient. 3. Pass out "Major Diseases during the War of 1812" sheets. (Alternatively, the teacher can use this sheet as an overhead.) Choose a patient symptoms card and read it aloud to the class, or select a student to do this. The class will then use the sheet to identify the corresponding disease. Repeat for the rest of the patient symptoms cards.
30 min.	<ol style="list-style-type: none"> 4. Divide the students into four groups; each group reads one of four scenarios that could have actually occurred on a naval ship in the early 19th century. Depending on the scenario, each group will have to think about either the possible illnesses described in its scenario or the injuries that could have resulted from the situation presented. To assist them, the groups will receive drawings that can provide further information and clues. This activity will help students learn more about some of the dangers associated with working on a naval sailing vessel like <i>Constitution</i>. Each group will then present its scenario and conclusions to the whole class. The "Major Diseases during the War of 1812" sheet may also be helpful for some of the groups. Below are the scenarios, along with possible conclusions that students may think of in their groups.
10 min.	<ol style="list-style-type: none"> 5. Each group presents their scenario and their conclusions to the whole class. Other groups can offer their own ideas, and the teacher can use the information above to encourage the class to think of other possible answers.

Scenario #1

USS *Constitution* has had several good days of sailing, but now is entering a storm. Heavy rain starts to fall and the wind, once steady and firm, grows powerful and violent. As waves crash over the decks, the ship pitches and rolls in the waters of the angry ocean. The ship's captain orders that sails be reefed, or hauled in, immediately in an effort to reduce the amount of sails exposed to the wind and help the ship ride out the storm. This means sailors must climb the masts, maneuver out onto the footrope that hangs below the yard (the horizontal poles from which sails hang) and haul in the sails together. The sails are made of a very heavy canvas. They weigh a lot when dry and are even heavier now that they are wet from the rain.

Think About It! What are some of the dangers the sailors in the situation above face?

Possible answers:

- Torn muscles and ligaments – hauling in heavy sails takes its toll on a sailor's body.
- There were no safety lines to protect sailors working high up on the masts. Sailors could easily fall onto the deck below, especially in slippery conditions caused by rain.
- Colds or fevers resulting from working in a storm.
- Broken bones – especially in a fierce wind, things on a sailing ship can whip around and cause injury, including loose ropes, loose ends of canvas, blocks and pulleys.
- Hernias – a bulging of the abdominal wall, frequently in the groin area, often caused by heavy lifting.

Scenario #2

It is June 1812, and *Constitution* sits in the waters of the Potomac River awaiting orders. The summer weather has been unbearably hot and humid, and sailors are complaining about thirst and the swarms of mosquitoes that are everywhere. Officers tell them not to drink the water, but some sailors ignore these orders and drink the river water anyway. The ship receives a new supply of meat from shore. The ship's cook makes a comment about the shipment not smelling right, but serves it to the crew anyway. Over the next couple of days, some of the sailors begin to complain of stomach pains and cramps. A few can be seen rushing to the head (toilet) when they start experiencing diarrhea. Others are afflicted by nausea and vomiting.

Think About It! What medical problems might the sailors in the scenario above be suffering from?

Possible answers:

- Food poisoning – eating contaminated food or water can result in the ingestion of bacteria or viruses. Symptoms include abdominal cramps, diarrhea, fever, headache, and nausea and vomiting.
- Dysentery – a disease usually caused by a bacteria or parasite and often resulting from drinking contaminated water. Characterized by abdominal pain and cramps, diarrhea, and sometimes fever.
- Malaria – a disease spread by mosquitoes that often breed in shallow pools of freshwater. Characterized by high fever and sweating that comes and goes at intervals. Also can cause nausea and vomiting.

Scenario #3

USS *Constitution* has been at sea for weeks. Sailors wake up in the cramped, crowded berth deck after being off watch for 4 hours. As they stretch and put on their shoes to report for duty, one man's loud, hacking cough fills the air. He grumbles about not feeling well and having a headache. The sailors put away their hammocks on the spar deck and head off to holystone the decks. Kneeling beside the sick sailor as they scrub away at the wooden decks, the men can see him scratching all over his body. Later that day there is a "sick call" for people to go to the surgeon. The ailing sailor heads off to the sick bay to be treated by the surgeon. Later that night, lying in their hammocks, some of the crew complain about sweating and feeling feverish.

Think About It! What medical problems might the sailor in the scenario above be suffering from?

Possible answers:

- Catarrhal Fever (influenza, cold).
- Typhus - a disease spread by lice and fleas from animals, especially rats, and characterized by severe headaches, fever, cough, joint pain, and nausea.
- Consumption (Tuberculosis) - Often affects lungs, but can infect any part of the body. Symptoms include coughing (sometimes coughing up blood) and sweating. Also causes high fever and excessive weight loss.

Scenario #4

It is August 19, 1812. USS *Constitution* encounters the British ship HMS *Guerriere* about 600 miles east of Boston. The ships maneuver into position parallel to each other and engage in battle. Cannonballs shoot forth from their guns, striking the opposing vessels and sending pieces of wood flying. Smoke fills the air and the sounds of battle, including men screaming in pain, are all around. As the battle continues, the two ships collide. British marines (soldiers) from the *Guerriere*, armed with muskets and swords, seize this opportunity to attempt to board the *Constitution*. The Marines on the *Constitution* fight to repel the invading British before the ships are pulled apart.

Think About It! What are some possible ways that sailors in the scenario above could have been injured during the battle?

Possible answers:

- Many battle injuries were caused by flying splinters of wood as cannonballs crashed into the ships.
- Crushing injuries/broken bones – in naval battles, cannon fire often was aimed at the enemy ship's masts in an attempt to bring them down and disable the vessel. Large, heavy pieces of wood could fall to the decks below and hit sailors.
- Burns – during a battle, fires could result from gunpowder (used for cannons) igniting.
- Hit by cannon balls.
- Hit by musket fire or stabbed by swords during attempts to board the enemy ship or repel such an attack.
- Recoil of cannons could smash into sailors or run over their feet.

Appendix 1

Patient Symptoms Cards

<p>Several sailors come to you complaining of severe stomach pains and diarrhea.</p>	<p>One of the sailors has developed a high fever and is sweating. In addition, he has a terrible, hacking cough.</p>
<p>A sailor comes to the sick bay with high fever and the sweats. He seems to get better, but 2 days later he returns with the same symptoms.</p>	<p>A sailor comes to you with pale skin and sunken eyes. You take a look at his mouth and have to pull back because of his horrible breath. You notice blood along his gums.</p>
<p>You treat a sailor with a high fever. He is scratching all over his body and you notice little bites, probably caused by lice.</p>	

Appendix 2

Major Diseases during the War of 1812

Disease	Description
Bilious Fever	Fever, seating, weakness, and aches, sometimes chronic. Caused by contact with infected animals.
Catarrhal Fever (severe cold, mild influenza, mild pneumonia)	A catch-all term for anything that causes fever, congestion, and aches. By far the most common ailment at sea.
Consumption (Tuberculosis)	Often affects lungs, but can infect any part of the body. Symptoms include coughing (sometimes coughing up blood) and sweating. Also causes high fever and excessive weight loss.
Dysentery	Abdominal pain and cramps, diarrhea, and sometimes fever. Usually caused by a bacteria or parasite transmitted through feces or contaminated water.
Intermittent Fever (Malaria)	High fever and sweating that comes and goes at intervals. Also can cause nausea and vomiting. Spread by mosquitoes that often breed in shallow pools of freshwater.
Rheumatism	High fever, sweating, joint and muscle pain.
Scurvy	Pale skin, sunken eyes, loss of teeth, corkscrew hairs. Other symptoms included weariness; stinking breath; muscle pain; bleeding from the nose, gums, or other parts of the body. Caused by a lack of vitamin C.
Typhus	High fever, decreased mental and physical functioning, and severe rash. Spread by lice and fleas from animals, particularly rats.

Appendix 3

Illness and Injury Aboard Naval Ships Scenarios

Scenario #1

USS *Constitution* has had several good days of sailing, but now is entering a storm. A heavy rain starts to fall and the wind, once steady and firm, grows powerful and violent. As waves crash over the decks, the ship pitches and rolls in the waters of the angry ocean. The ship's captain orders that sails be reefed, or hauled in, immediately in an effort to reduce the amount of sails exposed to the wind and help the ship ride out the storm. This means sailors must climb the masts, maneuver out onto the foot rope that hangs below the yard (the horizontal poles from which sails hang) and reef the sails together. The sails are made of a very heavy canvas. They weigh a lot when dry and are even heavier now that they are wet from the rain.

Think About It! What are some of the dangers the sailors in the situation above faces?

Scenario #2

It is June 1812, and USS *Constitution* sits in the waters of the Potomac River awaiting orders. The summer weather has been unbearably hot and humid, and sailors are complaining about thirst and the swarms of mosquitoes that are everywhere. Officers tell them not to drink the water, but some sailors ignore these statements and drink the river water anyway. The ship receives a new supply of meat from ashore. The ship's cook makes a comment about the shipment not smelling right, but serves it to the crew anyway. Over the next couple of days, some of the sailors begin to complain of stomach pains and cramps. A few can be seen rushing to the head when they start experiencing diarrhea. Others show signs of nausea and vomiting.

Think About It! What medical problems might the sailors in the scenario above be suffering from?

Scenario #3

USS *Constitution* has been at sea for weeks. Sailors wake up in the cramped, crowded berth deck after being off watch for 4 hours. As they stretch and put on their shoes to report to duty, one man's loud, hacking cough fills the air. He grumbles about not feeling well and having a headache. The sailors put away their hammocks on the spar deck and head off to holystone the decks. Kneeling beside the sick sailor as they scrub away at the wooden decks using sand and holystones, the men can see him scratching all over his body. Later that day there is a "sick call" for people to go to the surgeon. The ailing sailor heads off to the sick bay to be treated by the surgeon. Later that night, laying in their hammocks, some of the crew complain about sweating and feeling feverish.

Think About It! What medical problems might the sailors in the scenario above be suffering from?

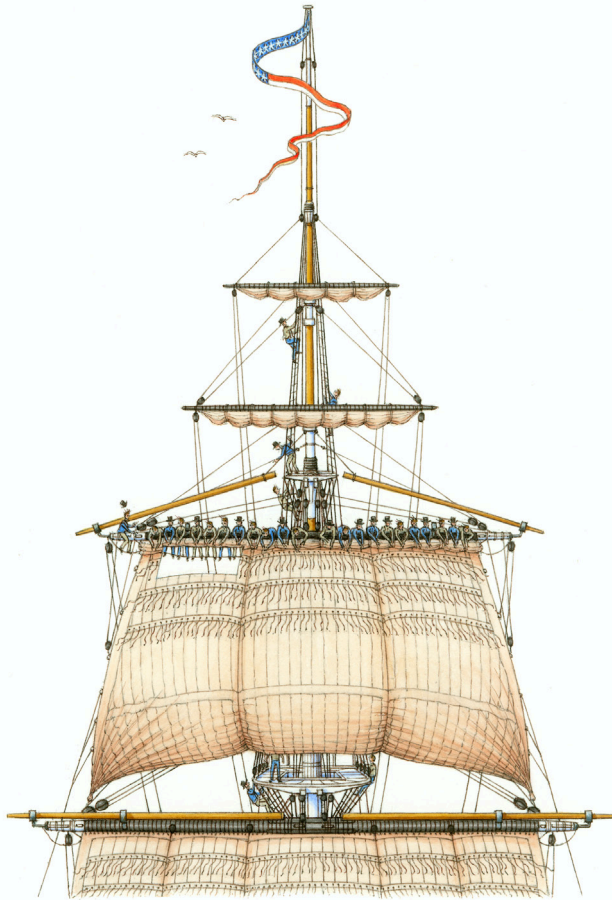
Scenario #4

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Think About It! What are some possible ways that sailors in the scenario above could have been injured during the battle?

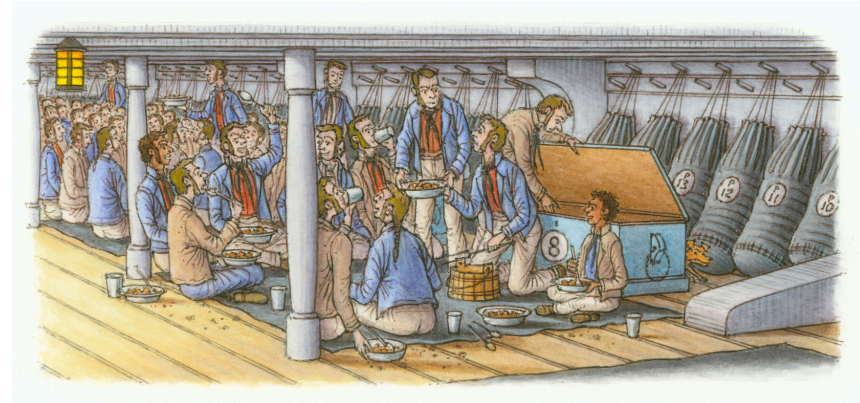
Appendix 4

Scenario #1

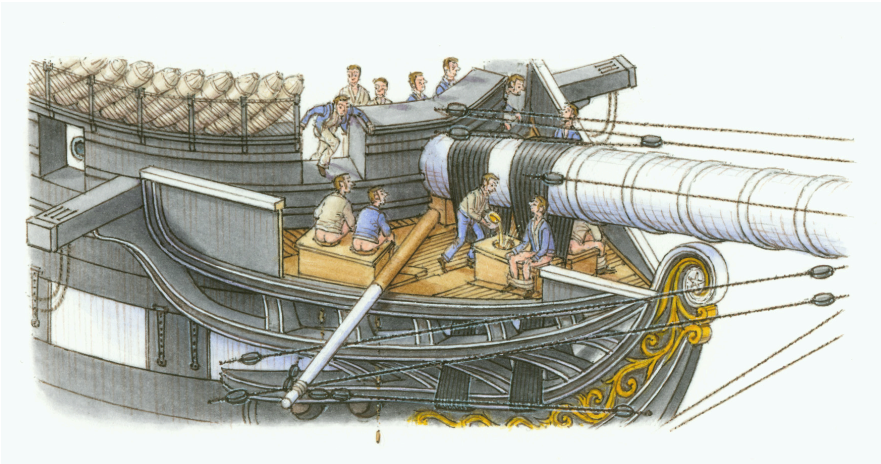


Reefing Sails

Scenario #2



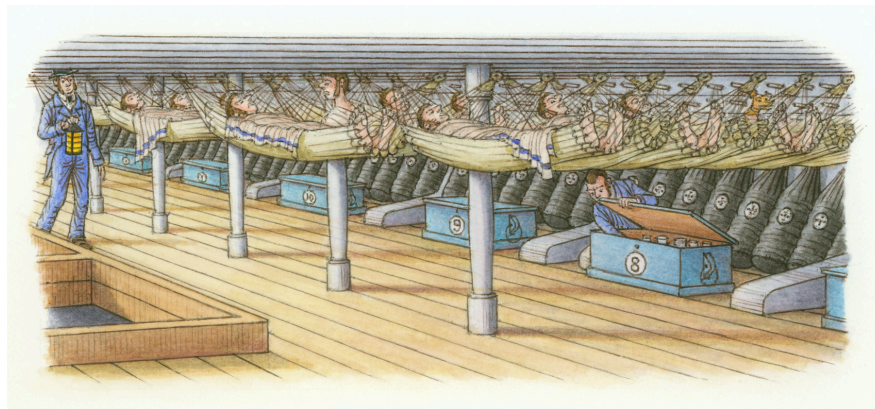
Eating a Meal



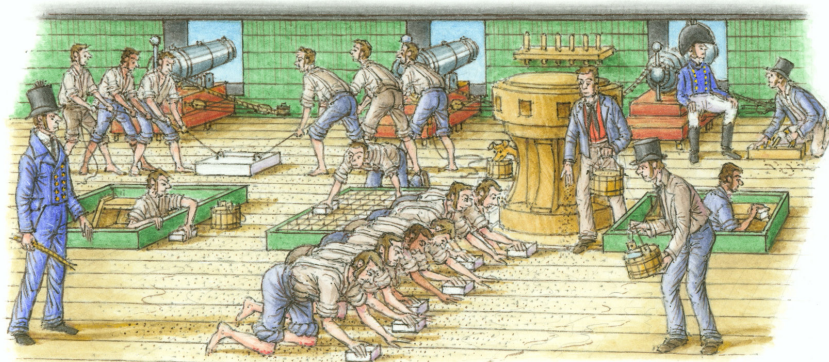
The Head

Appendix 4

Scenario #3

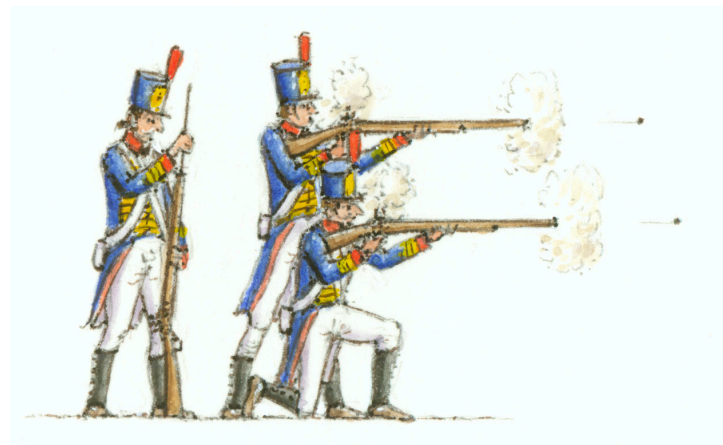


Sleeping on the Berth Deck

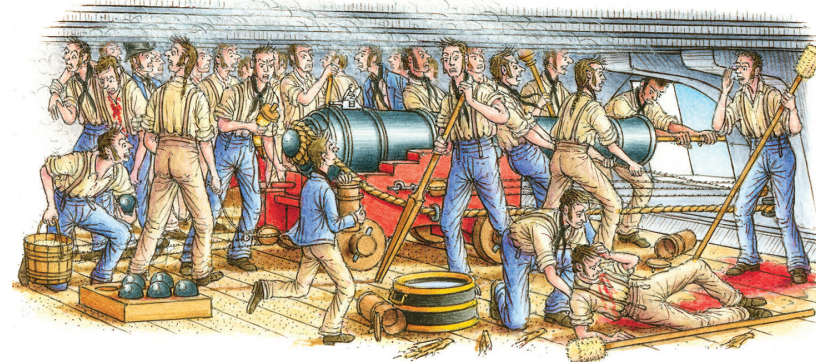


Holystoning the Deck

Scenario #4



Marines firing muskets



Sailors firing the cannons during battle