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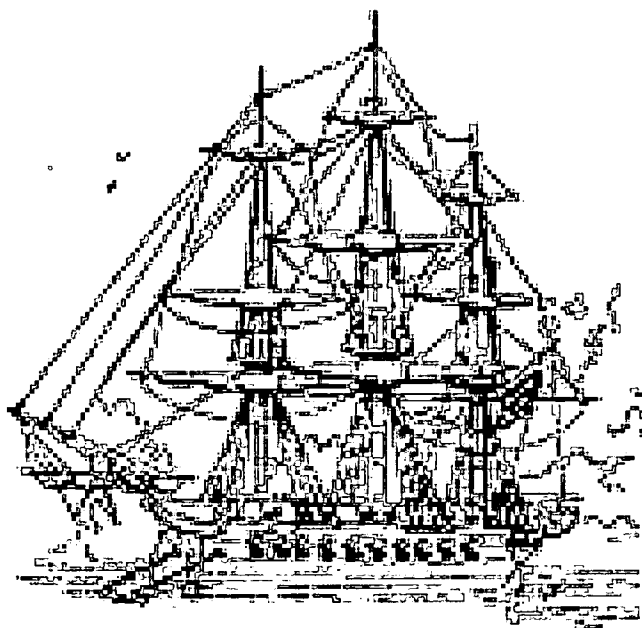
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ABSTRACT

This lesson contains materials for the U.S. Navy Museum's "Ships to the Sea" program. The program is appropriate for students in grades 2-4 and was designed in accordance with local and national social studies standards. The materials introduce students to the world of ship technology and naval terminology. The lesson is presented in five sections: (1) "Lesson Plan"; (2) "Ships to Sea Introduction"; (3) "Ship Descriptions and Drawings"; (4) "Nautical Vocabulary List"; and (5) "Activity Pages". Contains an answer sheet. (BT)



Ships to the Sea

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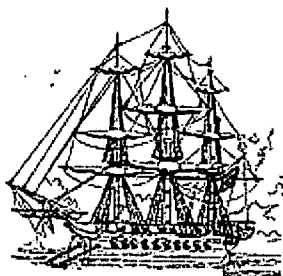
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Ships to the Sea

Teachers

In this section, you will find materials for The Navy Museum's program Ships to the Sea. The materials introduce your students to the world of ship technology and naval terminology. This program is appropriate for grades 2-4 and was designed in accordance with local and national social studies standards. All materials may be reproduced.

To schedule a Ships to the Sea tour, contact Sheila Brennan at 202-433-6826. We welcome all comments on our pre-visit materials.

Table of Contents

Lesson Plan	2
Ships to Sea Introduction	3
Ship Descriptions and Drawings	4
Nautical Vocabulary List	11
Activity Pages	
Sea Hunt	13
Crossword Puzzle	14
Ship Talk	17
Ship Match	18
Answer Sheet	19

Lesson Plan

Objectives:

1. Students trace the development of ship technology to understand the importance of maritime transportation.
2. Students study ship design and use nautical vocabulary to understand that ships are small communities.
3. Students build a wooden ship model at the Museum to link their knowledge of ship construction with objects they saw during their visit.

Materials:

1. Ships to Sea introduction
 2. Ship descriptions and drawings
 3. Nautical vocabulary list
 4. Activity pages: Sea Hunt, Crossword Puzzle, Ship Talk, Ship Match
 5. Answer sheet
-

Ships to the Sea Introduction

The waterways of the world make up more than 70% of the Earth's surface. Because there is so much water in the world, humans have used boats and ships for thousands of years to transport people and goods, discover new lands, and wage war against one other. The United States has a strong maritime tradition with a navy as old as the nation.

The roots of the American Navy go back to 1775, when a national navy was needed to fight the British during the Revolutionary War. Early American naval ships were sturdy and made of oak, elm, and pine wood. But, the ships needed wind to fill cloth sails to move it through water. The Navy, and many merchants, wanted ships they could sail at any time. Soon, a steam engine that burned coal powered wooden ships. Early steamers used sails in strong winds and steam-driven paddlewheels on calmer days. Iron and steel hulled ships developed because they resisted enemy attack better than wooden ships.

Early ironclad ships paved the way for advancements in modern ship design and construction. Larger engines were needed to power these heavy ships with thicker and stronger armor for protecting ships against new weapons. By the beginning of the 20th century, America's first modern steel battleships sailed around the world. They became the backbone of the Navy.

After the Wright brothers showed the world how to fly, the Navy began using planes from land bases. A new ship, the aircraft carrier, allowed pilots to take off into the air from the middle of the ocean. The first carriers were converted from existing ships. Later they were built with a full-length flight deck and a clear runway from stern to bow.

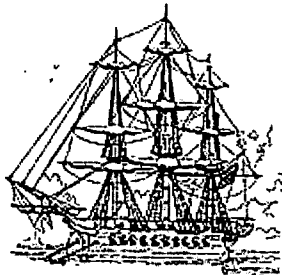
Today, there are many different types of ships in the Navy. The ships described on the following pages are examples of some of the Navy's historical warships. Technology has brought the Navy a long way from the early wooden sailing ships first authorized by Congress over 200 years ago. All of these ships, like those in today's Navy, protected U.S. borders and kept the sea lanes open and free for trade.



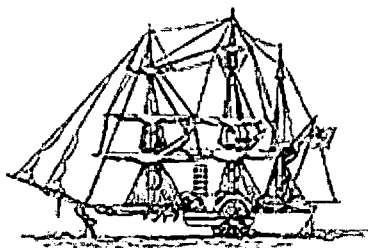
Ships to the Sea

Ship Descriptions and Drawings

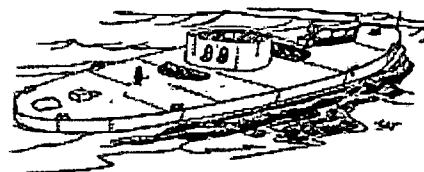
Frigate 1800



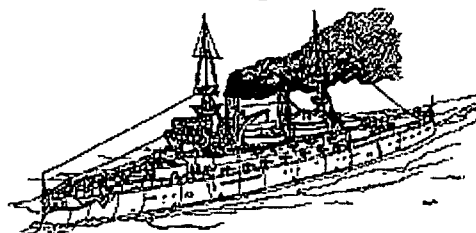
Sidewheel Steamer 1854



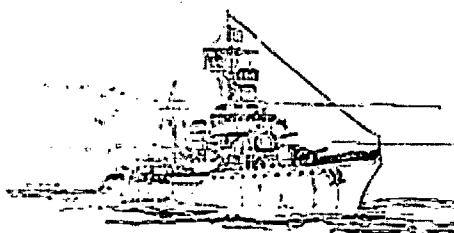
Monitor 1862



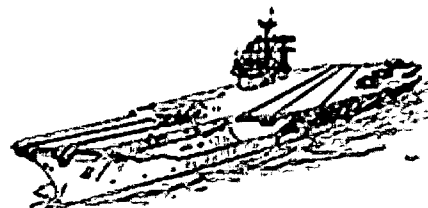
Battleship 1899



Destroyer 1942



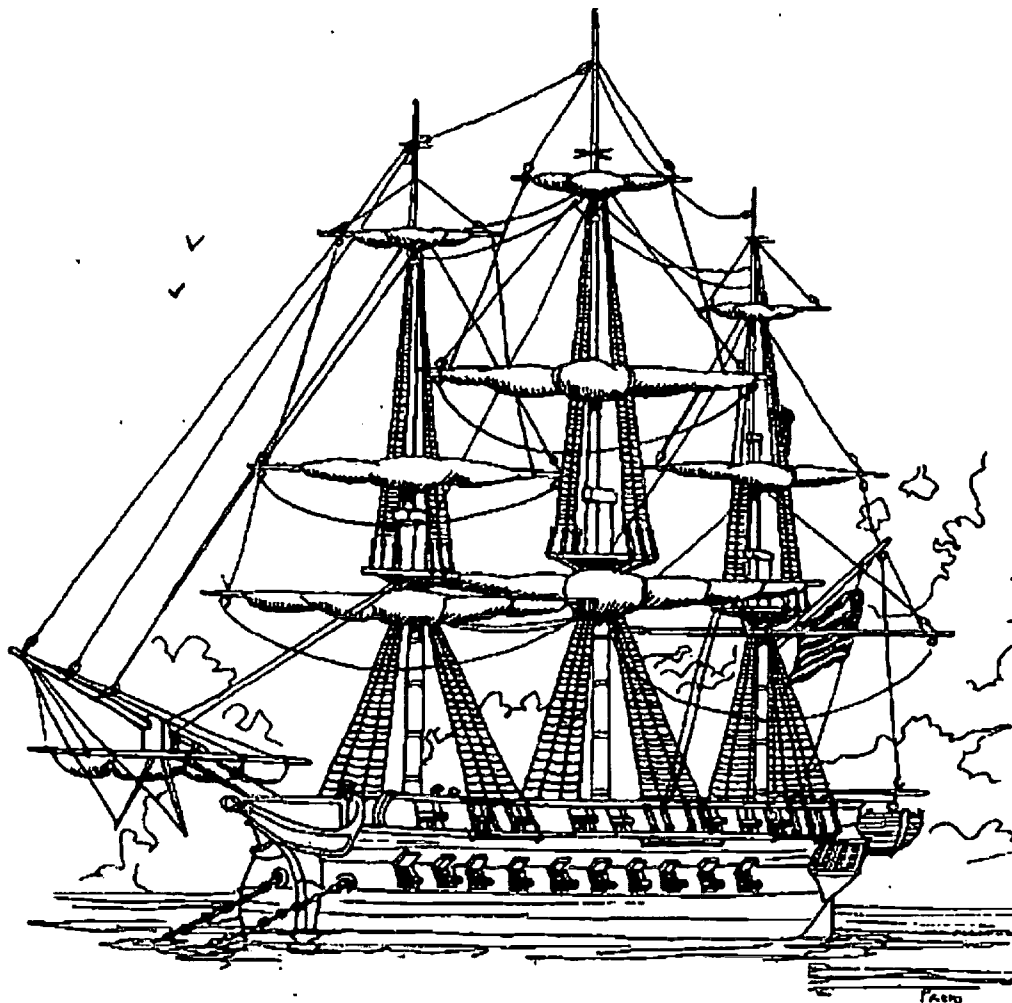
Aircraft Carrier 1960





Frigate 1800

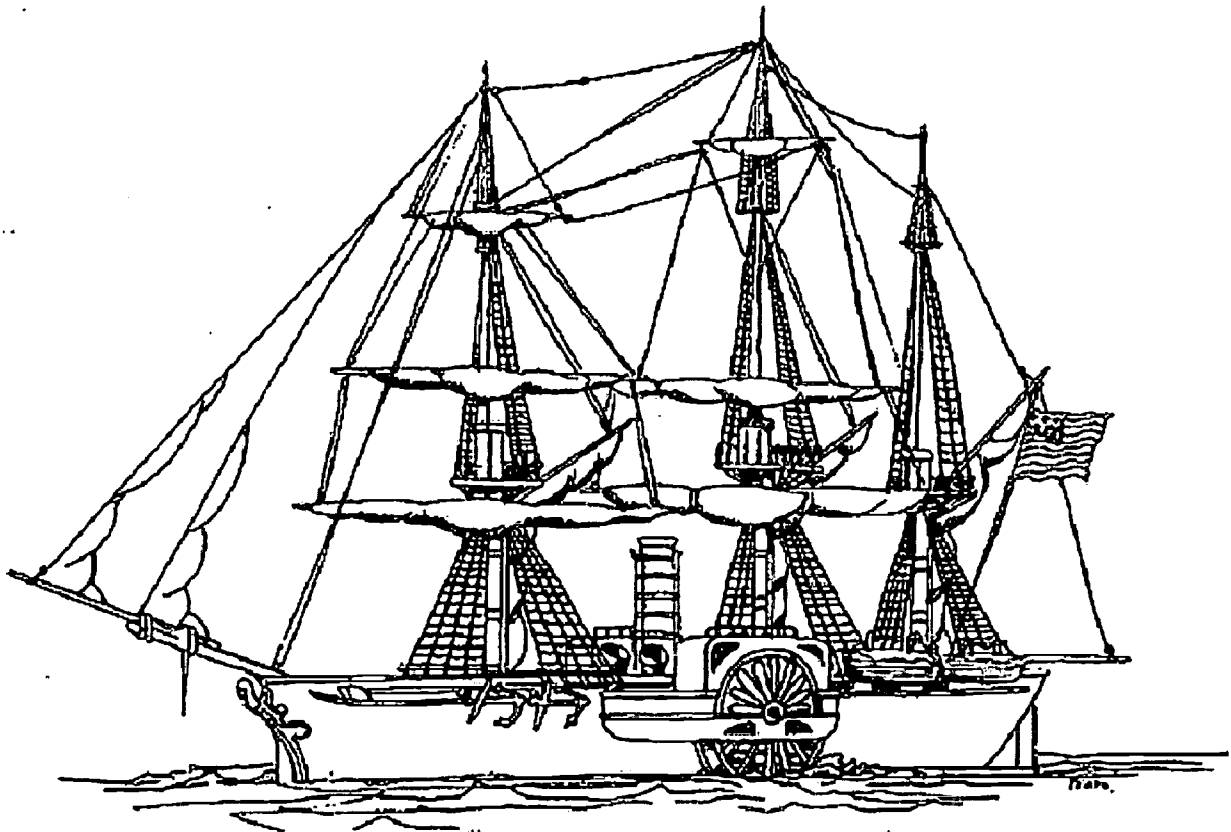
Frigates are the oldest ships you will read about in this packet. They formed the backbone of the early American Navy. These wooden warships sailed quickly across the seas to protect merchant shipping, capture enemy cargo, and fight battles with enemy ships. A typical American frigate was a square-rigged, three-masted ship. Frigates were built with oak, pine, and elm wood. A frigate had many levels, or decks, that were used for different reasons. The open upper deck, called the spar deck, carried short-barreled guns called carronades used at close range. The gun deck, the next one down, was lined with heavy guns on each side of the ship. Below that was the berthing deck where the ship's crew slept in hammocks and ate their meals. The orlop was a small storage deck that doubled as the ship's hospital during battle. All supplies were stowed in the hold, the lowest deck on any ship. The oldest American frigate is USS *Constitution*, which you may visit in Boston, Massachusetts or at their web site: www.usconstitution.navy.mil.





Sidewheel Steamer 1854

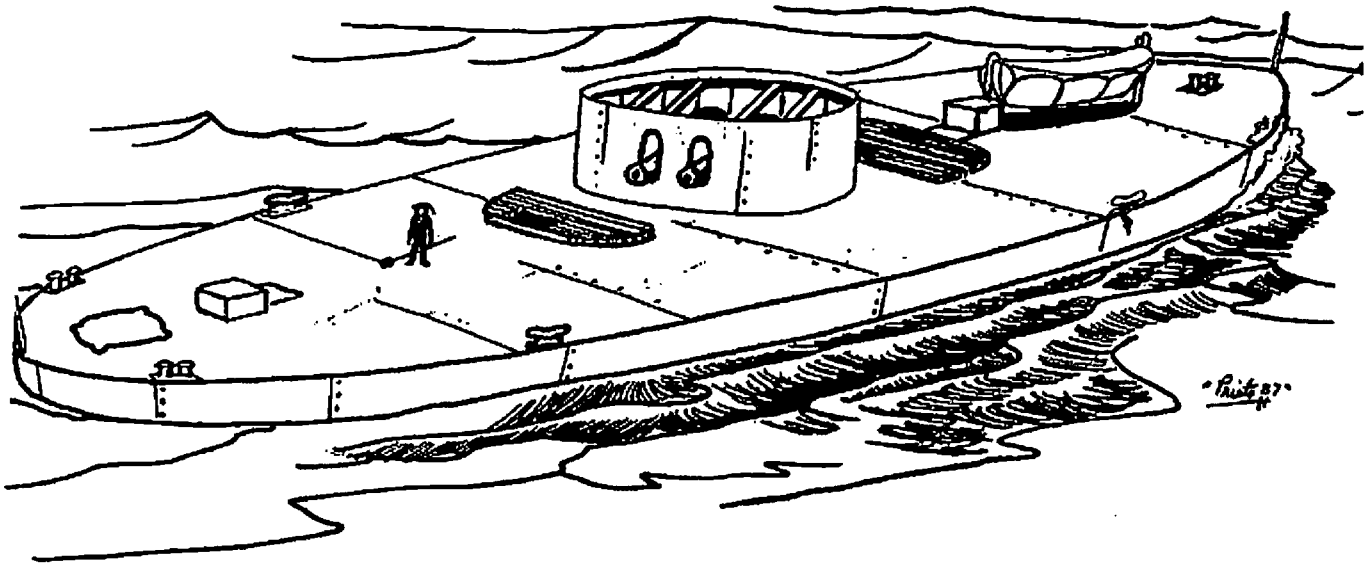
The sidewheel steamer was a transition ship between wooden sailing ships and steam-driven ironclads. Sidewheelers had wooden masts and hulls, but the hull frames, boilers, and engines were made of iron. To move through the water, sidewheelers used sails in strong wind and steam engines on calm days. The engines turned paddlewheels on the port and starboard sides. Steam power allowed these vessels to move without depending on the wind, like frigates. Unfortunately, the paddlewheels were easy targets for enemies. Paddlewheels were soon replaced by underwater propellers which were harder to damage.





Monitor 1862

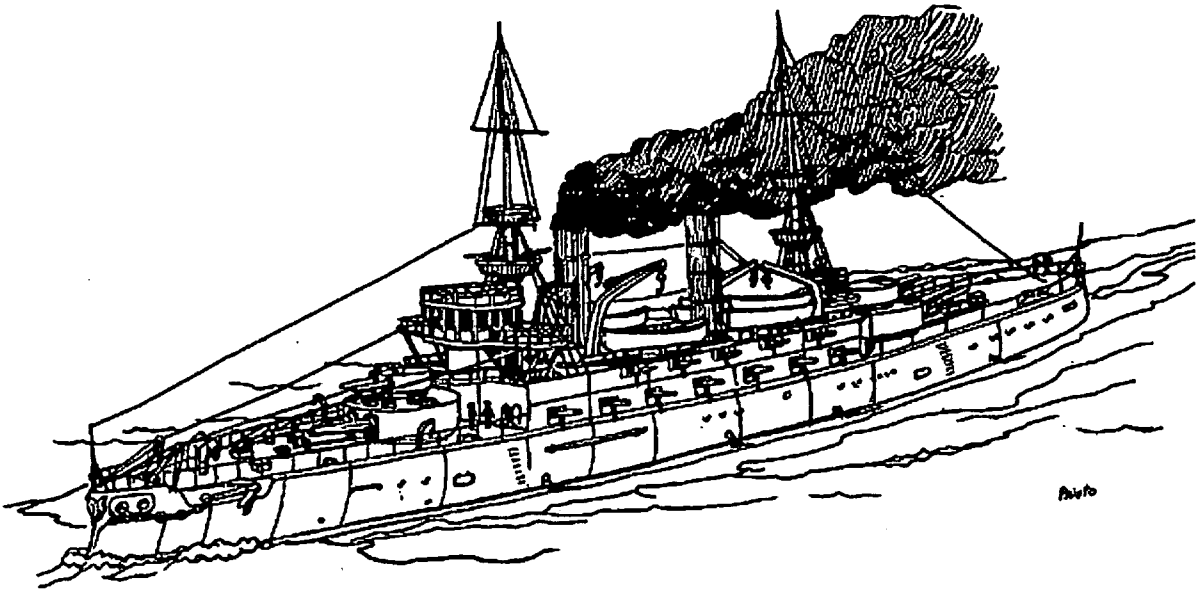
USS *Monitor* was one of the Navy's first ships protected by plates of iron armor. *Monitor* was designed to fight in shallow coastal waters and in rivers, so she sat low in the water and needed no sails. The ship was powered by a steam engine. To fight the enemy, *Monitor* had an iron turret containing two heavy guns that turned in any direction. This eliminated the need for separate rows of guns on the decks of frigates and sidewheelers. While ironclads proved to be good warships, sailors found them hot, stuffy, and uncomfortable to live in. "Monitor" now refers to any ironclad ship.





Battleship 1899

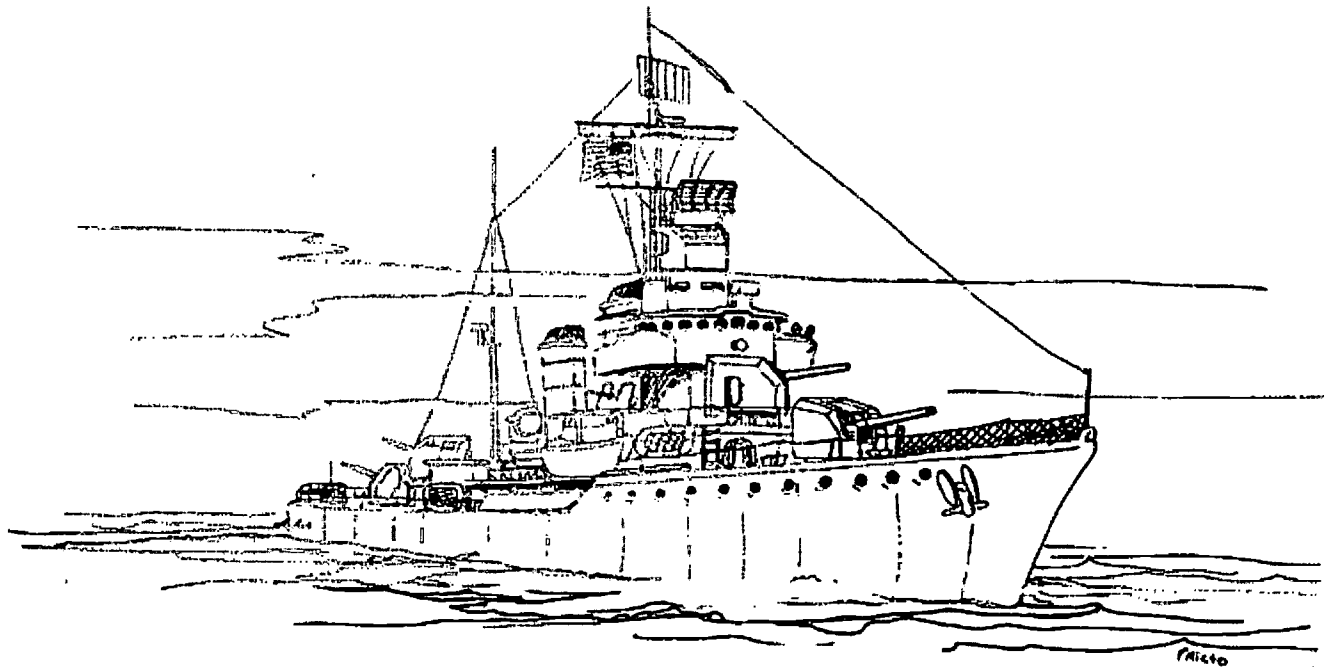
At the beginning of the 20th century, battleships were the largest ships in the Navy's fleet. Covered with steel armor, battleships carried the Navy's heaviest guns and were designed to fight other ships. With crews of approximately 1,000 sailors and marines, battleships were the largest ship-board communities. President Theodore Roosevelt sent a fleet of battleships around the world in 1907 to show off the great strength and size of these vessels.





Destroyer 1942

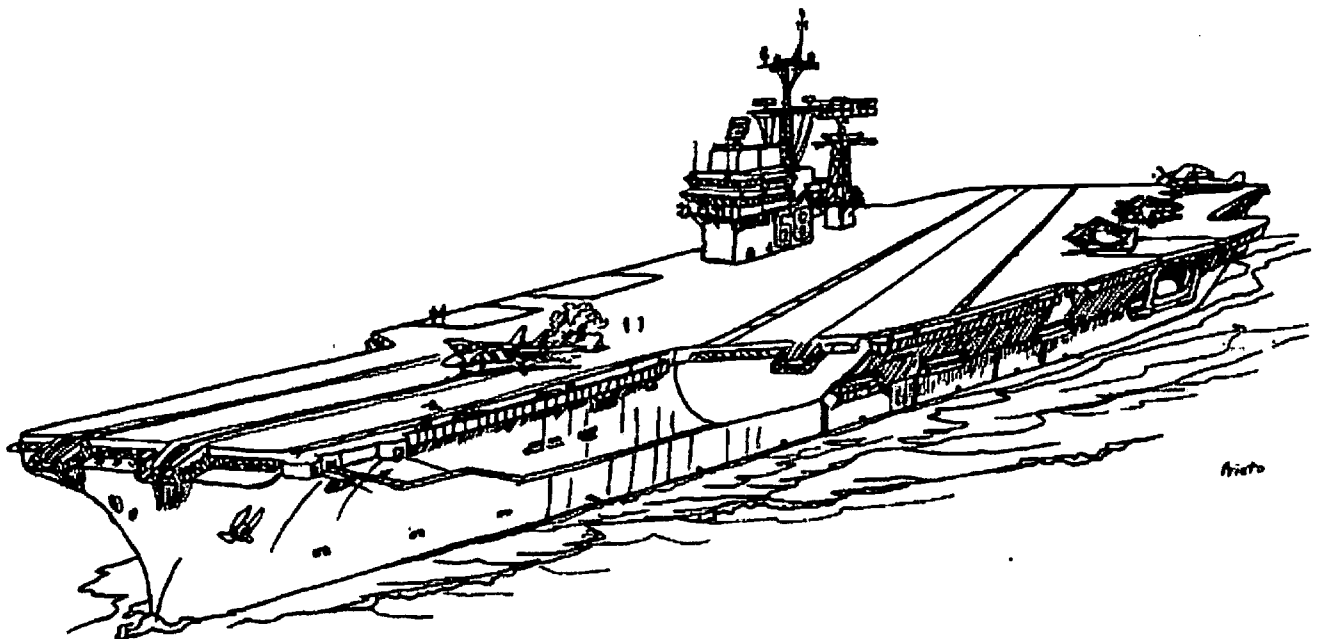
Destroyers are smaller, versatile warships that the Navy started using in World War I. These ships have guns and torpedoes to protect convoys from enemy submarines, surface ships, and aircraft. Nicknamed "tin cans," destroyers have thinner steel hulls than battleships, but are much faster in the water. A destroyer is smaller than a battleship or aircraft carrier, but still an important part of any fleet.





Aircraft Carrier 1960

The Navy's largest ships are aircraft carriers. Today's carriers are about 1,000 feet long and carry hundreds of plane and helicopters. Airplanes take off and land on large, flat flight decks where many sailors work together to control the traffic. These ships are airports at sea. Each carrier is a floating community where about 5,000 sailors work, eat, and sleep together for months at a time. Aircraft carriers launch, recover, and repair airplanes and helicopters. Carriers protect the fleet and are used as an offensive force against an enemy.





Nautical Vocabulary

bow: the front of a ship.

bulkhead: the walls of a ship.

bunk: a bed on a ship.

convoy: a group of ships traveling together for protection.

fleet: a group of ships.

galley: the kitchen on a ship.

hull: the frame of a ship.

keel: the backbone of a ship.

landlubber: a person who prefers the land to the sea.

line: rope used on a ship.

mast: a long pole rising from the keel through the deck, which generally holds sails.

mess: the area where meals are served and eaten.

navy: a nation's entire military organization for sea warfare and defense, including vessels, personnel, and shore establishments.

overhead: the ceiling of a ship.

port: the left side of a ship when facing the bow.

rigging: the ropes and other equipment used to raise the sails.

rudder: a moveable flat piece of wood or metal attached to the back of the ship that turns to steer the vessel.

starboard: the right side of the ship when facing the bow.

stern: the back of a ship.

turret: a revolving structure on a warship with guns mounted inside.

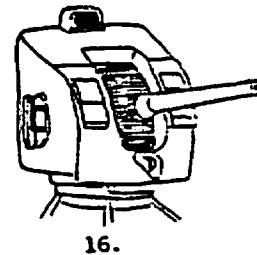
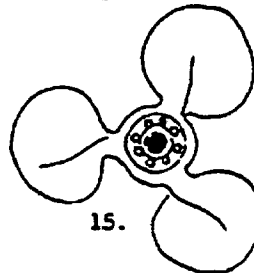
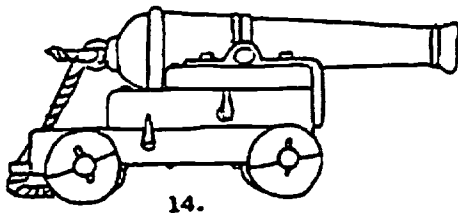
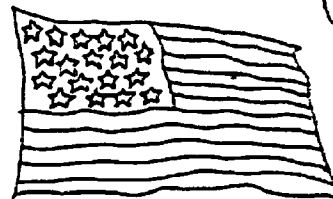
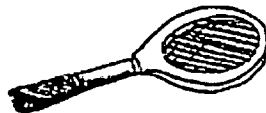
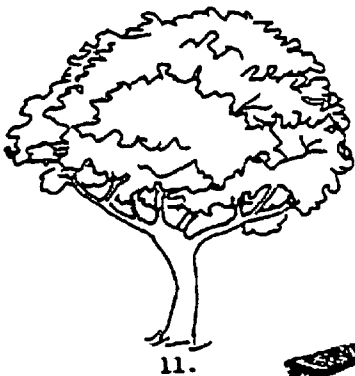
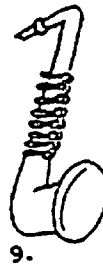
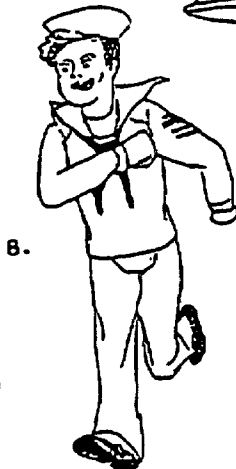
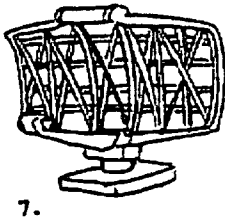
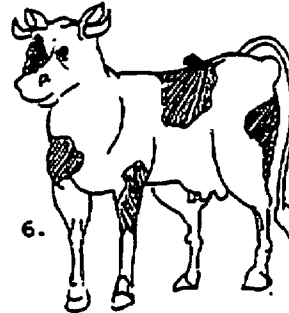
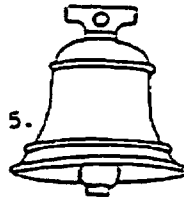
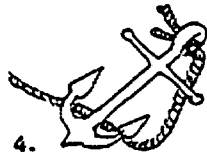
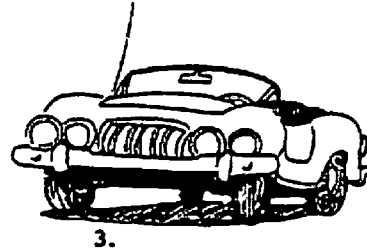
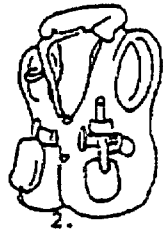
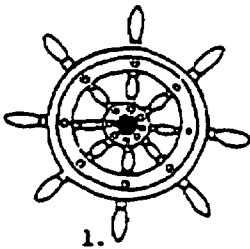
vessel: a hollow structure used on water, such as a boat or ship.



Ships to the Sea

Sea Hunt

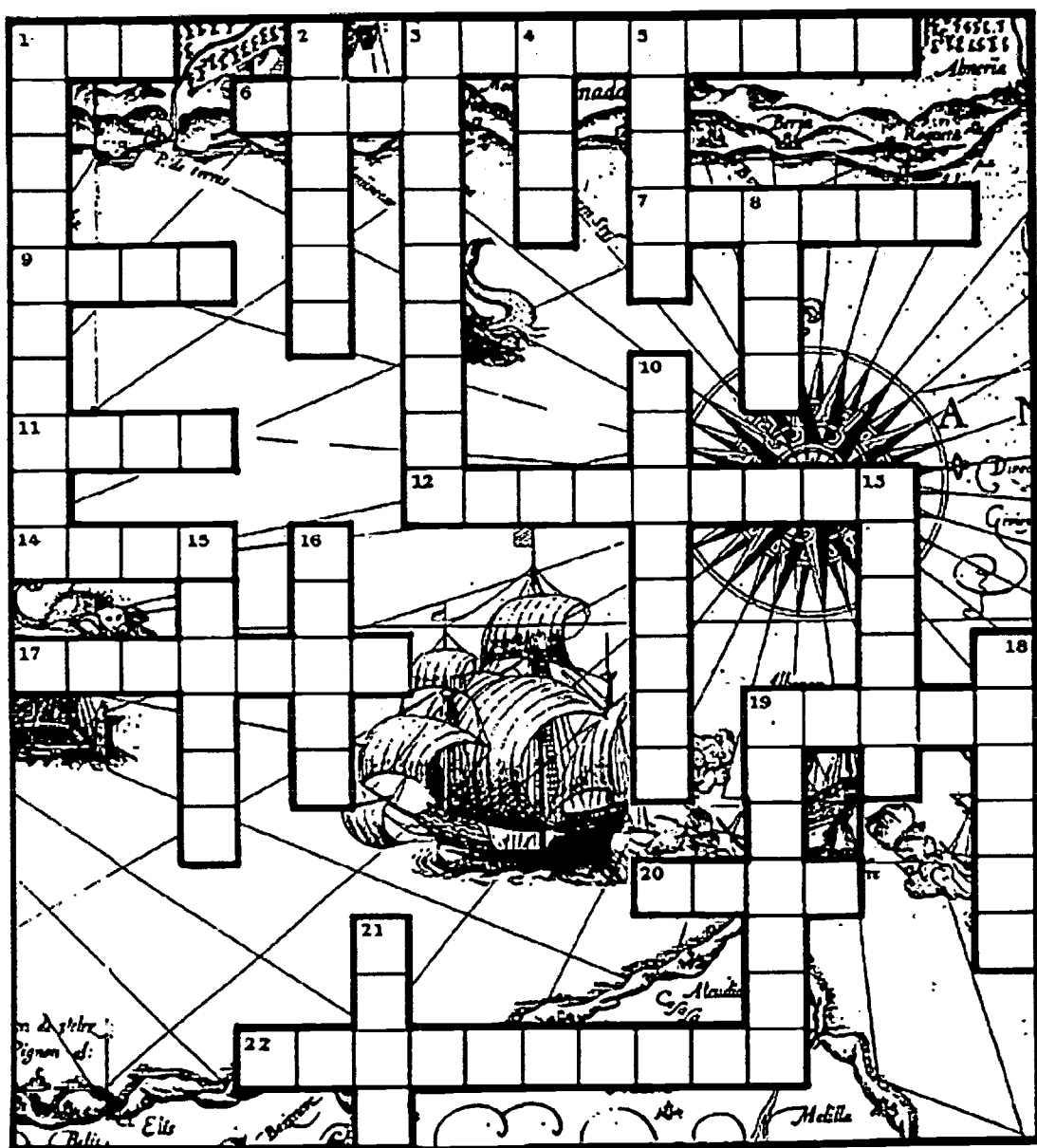
Circle the things that you would find on a ship.





Ships to the Sea
CROSSWORD PUZZLE

Anchors Aweigh



CROSSWORD CLUES

ACROSS

1. The front of a ship.
3. A paddlewheel ship that uses sail or steam power.
6. The long pole rising from the keel through the deck of a ship.
7. A group of ships traveling together for protection is called a _ _ _ _ _.
9. Rope on a ship.
11. The frame of a ship.
12. A fast ship that has many uses.
14. The left side of a ship.
17. See 10 down.
19. The back of a ship.
20. The bathroom on a ship.
22. A person who prefers the land to the sea.

DOWN

1. A modern ship with the heaviest guns and armor.
2. Stairs on a ship.
3. The right side of a ship.
4. "Swab the _ _ _ _," the floor of a ship.
5. The lookout, or what you wear on your wrist to tell time.
8. You will learn about ships on your visit to The _ _ _ _ Museum.
10. A ship that launches planes.
13. When the _ _ _ _ _ is turned, the bow of a ship moves in the same direction.

15. The revolving structure on a warship that holds guns mounted inside.

16. A group of ships.

18. Drop the _ _ _ _ _ to hold the ship in place.

19. See 3 across.

21. A sailor sleeps in a _ _ _ _ on board a ship.



Ships to the Sea

Ship Talk

Draw a line to match the nautical term with the everyday word.

STAIRS

FLOOR

ROPE

WALL

BATHROOM

FRONT

BACK

LEFT

KITCHEN

DINING ROOM

BED

MOP

CEILING

BUNK

BULKHEAD

MESS

STARBOARD

PORT

GALLEY

LADDER

DECK

HEAD

BOW

STERN

OVERHEAD

SWAB

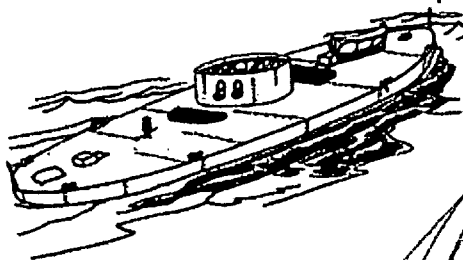


Ships to the Sea

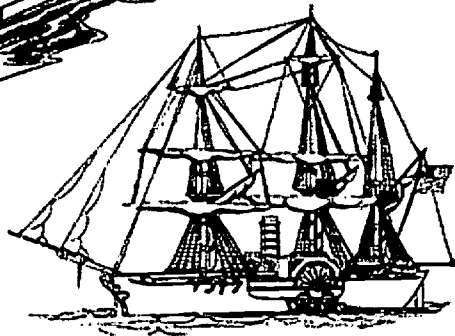
Ship Match

Match the ship's picture to the type of ship.

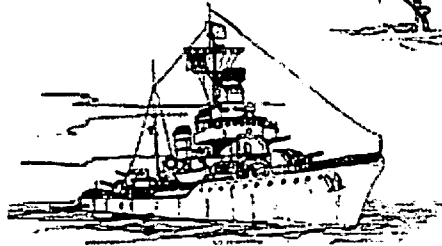
BATTLESHIP



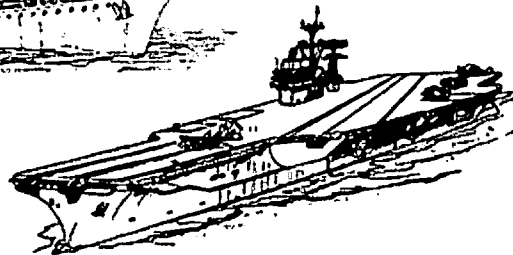
MONITOR



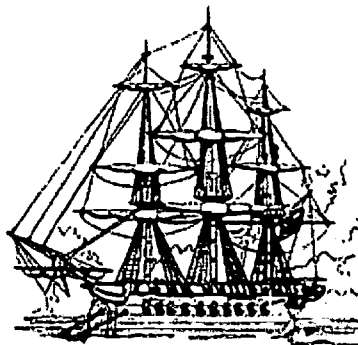
FRIGATE



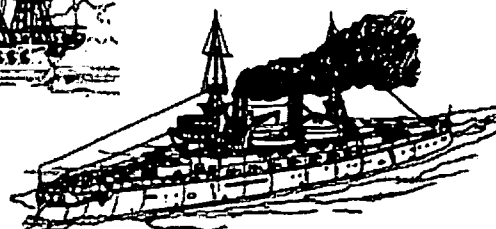
SIDEWHEEL STEAMER



DESTROYER



AIRCRAFT CARRIER



Ships to the Sea

ADDITIONAL ACTIVITIES

Ship Drawings:

Find the following parts of a ship on the ship drawings and label them. (Please note that not all ship parts go with all ships.)

hull	mast	line
bow	stern	rudder
turret	rigging	cannon
sail	sidewheel	flight deck

Essay or Creative Writing Assignment:

Have the students write a story about an experience on a boat or a ship.

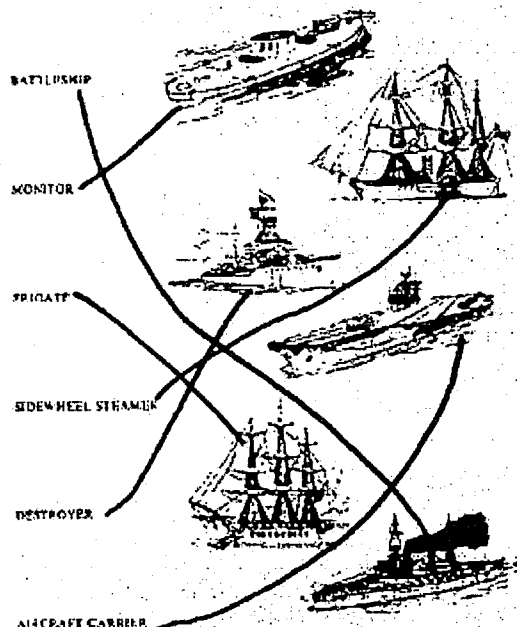
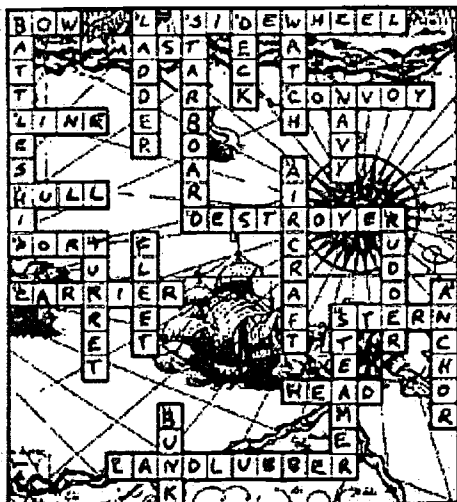
ANSWERS

SHIP TALK

Steps-Ladder; Floor-Deck; Rope-Line; Bathroom-Head; Front-Bow;
Back-Stern; Left-Port; Starboard-Right; Kitchen-Galley;
Dining Room-Mess; Bed-Bunk

THINGS YOU WOULD FIND ON A SHIP

1, 2, 4, 5, 7, 8, 10, 13, 14, 15, 16,





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