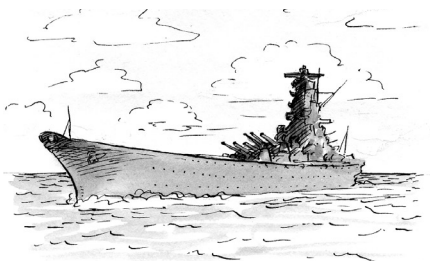


Sinking the Supership

PROGRAM OVERVIEW

NOVA investigates the sinking of Japan's Battleship *Yamato* through historical records, archeological evidence, and eyewitness accounts.



The program:

- follows an international crew of deep-sea divers and naval historians searching for the remains of the *Yamato*.
- reviews the history of the battleship and the role it played as a weapon of war.
- describes Japan's intent to build a supership twice the size of her competitors and with extreme firepower.
- notes how the *Yamato*, which was put into service in 1941, was designed with a bulbous bow intended to reduce the drag of the ship's enormous hull.
- points out the secrecy under which the *Yamato* was built.
- chronicles how the battleship became obsolete when aircraft proved more effective in combat at sea.
- relates how the Battle of Midway—in which the U.S. Navy defeated Japan in an air assault—sealed the fate of the gunboat as an effective wartime weapon.
- explains how, until its final fateful engagement, Japan never fully committed the Battleship *Yamato* to battle for fear of losing a national treasure.
- recounts Japan's use of kamikaze pilots as a desperate means to destroy American aircraft carriers.
- details how Japanese commanders sent the *Yamato*—in what was known to be a suicide mission—to attack American forces.
- chronicles the *Yamato*'s final battle.
- recreates how naval historians believe the ship was sunk.

Taping Rights: Can be used up to one year after the program is taped off the air.

BEFORE WATCHING

- 1 Ask students what they know about World War II. Use a map and have students locate specific countries as they describe what they know about each country's involvement in the war. Ask students to also locate Japan and Okinawa, as well as the Panama Canal, on a map.
- 2 As students watch, have them collect information using the viewing guide provided in the "Battleship *Yamato*" activity on page 2 (see activity for instructions).

AFTER WATCHING

- 1 Crew members of the Battleship *Yamato* were told to settle their affairs prior to departing for what they knew would be their final mission. Ask students why they think crew members accepted the order from their superiors to go along on a suicide mission. What may have motivated the battleship's crew to leave their homes and families behind?
- 2 Discuss the end of the battleship era and the emergence of the aircraft carrier as the primary weapon of war at sea. What were the reasons for this change in strategy? Since World War II, battle groups have replaced battleships. Have students research the components in a battle group and explain the role of each. Find the feature at www.pbs.org/nova/battlegroup/elements.html

CLASSROOM ACTIVITY

Activity Summary

Students will use a viewing guide while watching a program about the Battleship *Yamato* and discuss answers to their questions after watching.

Materials for Each Team

- copy of the “Battleship *Yamato*” student handout

Background

When launched in 1941, the *Yamato* was the world’s largest and most powerful warship ever built. It was a symbol of Japanese military power and a response to attempts by world powers to place limitations on fleet sizes in order to de-escalate the naval arms race.

The *Yamato* was built in absolute secrecy. Designed to be twice the size of any other battleship, it included three large gun turrets—each weighing more than an American destroyer—that could send a shell 40 kilometers. Its bulbous bow aided the large vessel’s hydrodynamics.

The *Yamato* saw limited action during World War II. Although the ship was struck a number of times by torpedoes and bombs, it suffered little damage. Initial successes of Japanese air forces led to the emergence of the aircraft carrier as the primary weapon at sea, a development that diminished the *Yamato*’s role in the Japanese fleet.

As American forces prepared for the invasion of Okinawa, the *Yamato* was ordered to do everything possible to stop this attack. A decision was made to sacrifice the ship in a suicide mission. But the Americans intercepted the *Yamato* while she was still 320 kilometers away from the closest American warship. A coordinated attack by more than 400 planes from a dozen U.S. aircraft carriers sunk the *Yamato*. The result was the largest naval disaster in history—only 269 of 3,016 crew members survived.

LEARNING OBJECTIVES

Students will be able to:

- relate the history of the Battleship *Yamato*.
- describe the Battleship *Yamato*’s design, capabilities, and significance.

KEY TERMS

battleship: A large, heavily armored warship.

bulbous bow: A type of protuberant bow that produces its own wake to interfere with the ship’s main wake in such a way as to reduce drag on the vessel.

destroyer: A warship with smaller guns designed for speed.

gun turret: A revolving platform on a warship that contains guns and an area of protection for the operators.

kamikaze: World War II Japanese pilots flying ritual suicide missions against Allied ships, crashing planes loaded with explosives.

Video is required
for this activity.

CLASSROOM ACTIVITY (CONT.)

Procedure

- 1 Organize students into five teams. Assign each team a set of four questions. Distribute a copy of the student handout to each team.
- 2 Review key terms with students, and discuss appropriate background information.
- 3 As students watch the program, have each student take notes on the questions that her or his team has been assigned.
- 4 After watching the program, have students meet in their teams to discuss their notes. Beginning with the first question assigned, ask teams to come to consensus on an answer. The team response should be written down as the answer to this question. Continue until all questions are answered.
- 5 Have teams share the questions and answers that came out of their group work. *(See Activity Answer on page 4 for possible answers. Accept all reasonable answers.)* Ask students in the rest of the class if they agree with what the team has presented. If student don't agree, ask them to explain why and provide evidence from the program that will support their opinion. When possible, expand upon a question or provide additional historical background for students.
- 6 To conclude, discuss with students how war tactics have changed over time. Have students consider the Revolutionary War, the Civil War, World War II, and the war in Iraq. What equipment, artillery, and tactics were used in each conflict? How did each war differ from the one before it? How have changes in technology influenced changes in warfare?
- 7 As an extension, have students list any places or monuments that represent national symbols. What do they have in common? Why are national symbols important? Ask students what national symbols they know of that have been destroyed. *(Some examples include the Berlin wall, New York's Twin Towers, and the statue of Saddam Hussein.)* What impact does the destruction of a national symbol have on a nation?

STANDARDS CONNECTION

The "Battleship *Yamato*" activity aligns with the following National Science Education Standards (see books.nap.edu/html/nses).

GRADES 5–8

Science Standard F

Science in Personal and Social Perspectives

Science and technology in society

GRADES 9–12

Science Standard F

Science in Personal and Social Perspectives

Science and technology in local, national, and global challenges

Classroom Activity Author

A former director of the National Science Teachers Association and President of the Science Teachers Association of Manitoba, Dan Forbes has been active in teaching and curriculum development in both Canada and the United States for 20 years.

ACTIVITY ANSWER

Suggested answers to the questions listed on the student handout:

- 1 Who took part in the search for the *Yamato*? **an international team of deep-sea divers and naval historians** What was the significance of locating the Imperial Crest? **only the largest of the Japanese ships had Imperial Crests to indicate they belonged to the Emperor**
- 2 When did the American fleet learn the location of the *Yamato*? **dawn of April 7, 1945** How was it able to determine the *Yamato*'s exact location? **through reconnaissance planes**
- 3 How did American forces coordinate an air assault on the *Yamato*? **more than 400 planes from a dozen aircraft carriers took part in a coordinated attack; the first wave of dive bombers dropped bombs on the deck and launched torpedoes at the ship's hull; the second wave of fighter planes strafed the ship with gunfire; the third wave of low-altitude bombers launched 12 final torpedoes that sank the ship**
- 4 Why did thousands of men drown on the *Yamato*? **the ship's water tight compartments had been sealed shut to prevent further flooding**
- 5 Why were battleships important components of any fleet? **they could provide devastating firepower across great distances**
- 6 What steps did the Japanese take to ensure secrecy when building the *Yamato*? **the dry dock was covered in fish netting and no one person ever saw a complete design plan; even the *Yamato*'s commanding officers were not provided with details about the ship's true size**
- 7 What was unique about the *Yamato* compared to other battleships? **it was about twice the size of other battleships; each of the three gun turrets weighed more than an American destroyer; the guns had a range of 40 kilometers (spotter planes were needed to target over the horizon); the *Yamato* was built around the guns; extra width allowed the ship to be fitted with the thickest armor**
- 8 Why were American battleships limited in width? **since America had a two-ocean Navy, its ships' widths were limited by the width of the locks of the Panama Canal, which were 33 meters wide**
- 9 Why were hydrodynamics an issue for the *Yamato*? **the extra width needed to support the gun turrets increased the resistance from waves; the *Yamato* could not be hydrodynamically efficient with a standard bow design**
- 10 What is a bulbous bow? **as a ship moves through water the bow produces a wave; the bulbous bow produces a wave in front of the ship that reduces the wave action and the drag effect of the water** What benefits does this shape provide? **the bow reduces resistance, which allows the ship to travel faster**

ACTIVITY ANSWER (CONT.)

- 11 How did Japanese victories in 1941 lead to the demise of the *Yamato*?
Pearl Harbor and the sinking on the British Battleship *Prince of Wales* demonstrated the effective use of airpower and the rising importance of the aircraft carrier as the primary weapon at sea
- 12 Why was the *Yamato* not committed to the Battle of Midway?
the Battle of Midway was a contest between aircraft carriers; the *Yamato* stayed 300 miles away out of range of American planes, and served as a command center; Japan did not want to risk losing its irreplaceable treasure
- 13 What were kamikaze attacks? **Japanese pilots who performed ritualistic suicide missions; pilots attacked 300 ships and sunk 34; to die with honor was a unique, 800-year-old tradition**
- 14 Why was the kamikaze strategy used during the final stages of the war?
American forces were approaching the Japanese home islands and this was the last attempt to halt the advance
- 15 What indicated that the *Yamato*'s final mission was a kamikaze operation? **sailors were told to sort everything out, pay off all debts, and take care of things before boarding the ship; the mission was organized by the same commanders who organized the kamikaze air attacks; the *Yamato* only had enough fuel for a one-way trip; sailor sent last letters home and alcohol was distributed to crew the night before the attack**
- 16 Why did the *Yamato* finally go into battle? **air attacks on Tokyo left 1 million homeless; 5,000 kamikaze pilots were trying to stop an American advance; in the name of honor the Japanese navy decided to sacrifice its biggest battleship**
- 17 Why did American bombers attack only on one side of the *Yamato*?
the torpedoes would penetrate below the waterline between the bow and the stern where the armor was thinnest; flooding on one side would ensure the ship would capsize
- 18 How do naval historians believe the *Yamato* sank? **flooded on one side by torpedoes, the *Yamato* listed to port until it became unstable and then capsized; the gun turrets were ripped from their mounts by their own weight; tons of ammunition slammed together causing three massive explosions which severed the *Yamato* into two pieces**
- 19 How many crew members survived? about **200** How were they rescued? **by a Japanese destroyer**
- 20 Why did the Japanese navy refuse to announce the sinking of the *Yamato*? **the *Yamato* was a symbol of national prestige**

LINKS AND BOOKS

Links

NOVA—Sinking the Supership
www.pbs.org/nova/supership
*Learn what it took to tell the story of the *Yamato*, read eyewitness accounts of the ship's fatal last conflict, use an interactive map to explore the ship's features, and view dramatic archival photographs from the ship's final battle.*

Ships of the World: An Historical Encyclopedia—*Yamato*
college.hmco.com/history/readerscomp/ships/html/sh_101300_yamato.htm
*Examines the history of the *Yamato* from construction to sinking.*

Yamato (Battleship 1941–1945)
www.history.navy.mil/photos/sh-fornv/japan/japsh-xz/yamato.htm
Provides historical information and photographs.

Books

A Glorious Way to Die: The Kamikaze Mission of the Battleship *Yamato*, April 1945
by Russell Spur.
Newmarket Press, 1981.
*Analyzes the *Yamato*'s last days from Japanese and American perspectives.*

Kamikaze: Japan's Suicide Gods
by Albert Axell.
Longman Publishers, 2002.
Examines the motivation, strategy, and impact of the kamikaze attacks in the final days of World War II.

Requiem for Battleship *Yamato*
by Yoshida Mitsuru.
Naval Institute Press, 1999.
*Focuses on the human side of the *Yamato* mission from a surviving junior officer.*

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Battleship *Yamato*

The *Yamato* was the largest battleship ever built. Its sinking marked the end of gunboat diplomacy and the emergence of the aircraft carrier as the primary weapon at sea. From national symbol to the vehicle for the largest kamikaze attack, the *Yamato* has held great meaning for Japanese ever since its sinking in 1945, even as its history has remained shrouded in mystery. Learn more about this mighty ship in this activity.

Questions

Write your answers on a separate sheet of paper.

- 1 Who took part in the search for the *Yamato*? What was the significance of locating the Imperial Crest?
- 2 When did the American fleet learn the location of the *Yamato*? How was it able to determine the *Yamato*'s exact location?
- 3 How did American forces coordinate an air assault on the *Yamato*?
- 4 Why did thousands of men drown on the *Yamato*?
- 5 Why were battleships important components of any fleet?
- 6 What steps did the Japanese take to ensure secrecy when building the *Yamato*?
- 7 What was unique about the *Yamato* compared to other battleships?
- 8 Why were U.S. battleships limited in width?
- 9 Why were hydrodynamics an issue for the *Yamato*?
- 10 What is a bulbous bow? What benefits does this shape provide?

Procedure

- 1 Read your question set. As you watch the video, take notes on the questions you have been assigned.
- 2 After watching the program, meet with your team members who have been assigned the same questions. Together, come up with an answer for each question that you all agree on. Write these answers down on a new sheet of paper. Work with your team members to answer all your questions.
- 3 Work together as a team to divide the questions so that each team member is assigned at least one question to present to the class.
- 4 Share answers to your team's questions with the class.

- 11 How did Japanese victories in 1941 lead to the demise of the *Yamato*?
- 12 Why was the *Yamato* not committed to the Battle of Midway?
- 13 What were kamikaze attacks?
- 14 Why was the kamikaze strategy used during the final stages of the war?
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