

PACIFIC BATTLESHIP CENTER - USS IOWA MUSEUM

Virtual STEAM at SEA Program

The Pacific Battleship Center - USS IOWA Museum is taking our STEAM at Sea program online! This K-8 program offers engaging one hour sessions covering different forces acting on the ship, focusing on Newton's Laws of Motion and balanced/unbalanced forces. Each lesson includes a slideshow presentation and wraps up with an interactive STEAM activity using commonly found household items to support covered topics in a fun way.

Schedule a virtual session with the USS IOWA today.

Days available

Mondays, Wednesdays, and Fridays

Time slots

Morning - Start time of 10am or 11am.

Afternoon - Start time of 1pm or 2pm.

Pricing (max. 40 students)

One session - \$100

Series of four sessions - \$350

***Larger group rates available by request**

***Limited grant funding available for LAUSD, IUSD, and LBUSD on a first-come, first-served basis**



Contact us at:
groupsales@labattleship.com
Or call
877-446-9261



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Current Virtual STEAM at SEA Program lessons:

1. Buoyancy [K-8]: How does a massive battleship stay afloat? Students will be introduced to buoyancy and density and the various factors affecting each.

STEAM activity - Build a boat out of tinfoil while applying the engineering design process. Students will see how many pennies their boats can hold before sinking and will compare results, discussing why different designs produced varying load capacities. Required materials: tinfoil, and at least 20 pennies.

2. Projectile Motion [2-8]: The USS IOWA is a battleship and was considered a heavily armed gunship during her active days. Students will be able to identify and define the unbalanced forces acting on flying projectiles at the end of this lesson. Gravity, drag, and thrust will be discussed.

STEAM activity - Straw rocket construction and experimentation. Students will follow along with an IOWA educator to build a standard/control straw rocket, then fire their rockets and measure how far it travels. Next, students will be asked to build a rocket on their own, changing only one aspect of the design. Students can share their ideas with each other and educators as they build. Once completed, students will fire and measure the distance of their second rocket, discussing how their design change may have affected flight distance. Required materials: 1 straw, 2 pieces of paper, scissors, and tape.

3. Naval Aviation [2-8]: The USS IOWA launched observation floatplanes off the fantail in WWII using a catapult mechanism and carried helicopters later in her service years. This lesson can be considered an alternative to the Projectile Motion lesson if one wishes to avoid talking about weapons. Students will be introduced to all forces acting on a plane in flight. Lift, gravity, drag, and thrust will be discussed.



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Currently available Virtual STEAM at SEA Program lessons:

STEAM activity - Build paper airplanes and simple paper airplane launchers. Students will follow instructions to build a standard/control paper airplane and airplane launcher. Planes will be launched and flight distance measured. Students will then be challenged to adjust either the build of the paper airplane or the launcher. Modified prototype flight tests will be conducted and the class will discuss results together as a group. Required materials: 2 pieces of paper, 1 pencil, 1 rubber band, and tape or 1 paper clip.

*If both Projectile Motion and Naval Aviation lessons are booked in a series, the presentation for Naval aviation will be reduced and a second activity building a paper helicopter will be conducted alongside paper airplane activity.

4. Energy Conversion (3-8): The USS IOWA is powered by massive boilers and steam turbines. Energy conversion will be discussed in general, with a focus on converting thermal energy into mechanical work. A live demonstration of a mini steam engine will take place during the lesson.

STEAM activity - Make your own steam turbine! Students will follow instructions to make their own pinwheel and then will demonstrate how steam or, in this case, hot air from a blow dryer causes it to rotate. Required materials: 1 piece of paper, 1 straw, 1 thumb tack, and a hair dryer.

About Battleship USS Iowa Museum

Located in San Pedro, Calif., Battleship USS Iowa Museum is one of the top five museums and attractions in Los Angeles, bringing the ship's history to life through in-person and virtual tours and educational programs for youth. In addition to providing a natural platform for veterans and patriotic civilians to come together as a community, Battleship USS Iowa Museum provides a wide array of impactful programs and resources that support the critical needs of our military and veterans.

The museum is operated by Pacific Battleship Center, a 501c3 non-profit organization solely supported by admissions, donations, event space rentals, and gift shop. We do not receive government funding for our operations. Learn more at pacificbattleship.com



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