



Pampanito Submarine School

Overnight Science Program

An overnight program aboard an authentic World War II submarine that gives middle school students the chance to explore the basic scientific principles that enable a submarine to work.

A submarine is a unique sort of vessel: designed to travel on long patrols, independent of support from other ships, while carrying a large crew to operate its complicated equipment in often hostile environments—and to do it submerged part of the time! To accomplish this, the submarine’s designers had to answer a variety of questions, such as: how to make the submarine dive; how to propel it; how to navigate; and how to communicate inside the boat and out. How could they make the submarine do all of these things and, at the same time, make it habitable and as comfortable as possible for its crew?

*The answers to these important questions lie in the realm of **SCIENCE**. Science was used to address virtually all of the design challenges submarine builders faced. USS Pampanito, therefore, provides a perfect platform for students to study scientific principles. The various onboard systems and their components are all examples of the application of science to daily life.*

Program Objectives:

Students will...

- Explore practical applications of scientific concepts using an interdisciplinary approach.
- Develop specific science skills.
- Utilize conceptual understanding and problem-solving strategies to solve mathematical problems in different contexts.
- Practice skills of teamwork, collaboration, decision-making, and communication.

Program Activities:

- **What’s Your Angle?** Learn about light and mirrors, and make your own periscope.
- **S.O.S. – Sink or Swim:** Learn about buoyancy by making (and testing) your own submarine.
- **Let’s Get Charged!** Make a chemical battery, then make it do work!
- **We Hear You Loud and Clear:** Learn how sound is used in water to measure distance or to find objects; then listen to, and identify, a series of recorded underwater sounds.
- **Where in the World is USS Pampanito?** Use the rail fence code to decode your operation orders and plot the sub’s position on a map.

Details

There is a **20-student minimum**. **Maximum group size is 30 students**. We require **one adult chaperone for every six students with a minimum of 5 adults and a maximum of 8 adults**.

The cost of the program is **\$58 per student** (\$31 per adult chaperone).

Financial aid is available; please inquire.

The program hours are **4 p.m. to 8:30 a.m.**, although we ask that the group **check in by 3:30 p.m.** to organize paperwork and gear.

Each participant must bring a **sleeping bag and pillow**. The school must provide **dinner and breakfast** for students and chaperones, to be eaten in the crew’s mess aboard the sub.

Some **in-class preparation is required** prior to the program (suggested activities will be provided).

For reservations contact:

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