

Name _____

Date _____

Submarines

Unafraid of the dark? Not bothered by tight spaces? Okay with being deep underwater? If so, life aboard a submarine might be for you. A submarine (or "sub" for short) is a boat that can dive deep into the ocean. Once there, it can stay submerged for days, weeks—even months at a time. Pretty incredible, huh? Subs have several key components that enable them to accomplish this amazing feat.



Hull

A sub's hull contains everything (crew, engine, supplies, equipment) inside the sub. The hull is shaped like a tube,

which allows the sub to glide through the water. Made of steel or titanium, sub hulls are super strong. They need to be. That's because there's a lot of pressure underwater. The deeper the sub goes, the higher the pressure becomes.

Planes

Birds have wings. Subs have planes. The planes look and act like wings. The sub's planes can be tilted to change the direction the sub moves through the water. By tilting the planes down, the pilot can make the sub point up. By tilting the planes up, the pilot can make the sub point down.

Tanks

While the planes help the sub point up or down, it's the tanks that control how *buoyant* the sub is. The tanks can be filled with air or water. If the sub wants to float at the surface, the tanks are filled with air. If the sub wants to dive deep underwater, the tanks are filled with water.

Engine

Subs don't use gas engines. That's because gas engines need air to work. Instead of gas engines, subs use electric motors. In more advanced subs, nuclear power is used.

Tower

Subs are shaped like tubes. But they *do* have a single tower that pokes up from the top. This tower is very important, as it contains the sub's navigation system. This gives information to the sub pilot about the sub's precise location, as well as the location of the objects around