

Making Fresh Water: Distillation



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Special Thanks to National Museum of the United States Navy for writing content

Lesson Plan

This activity requires adult supervision.

OBJECTIVE: Students replicate the process by which submarines distill fresh water from salt water to understand one of the steps required for living underwater in a submarine.

MATERIALS:

- 1 heating device, stove or hot plate
- 1 old tea kettle
- 1 metal spoon or jar lid
- Water to fill kettle
- Salt
- Padded glove or pot holder
- 1 clear drinking container

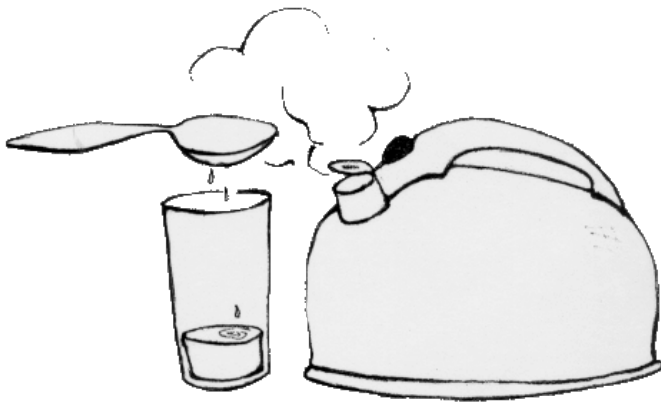
PROCEDURE: *See activity sheet*

Activity Sheet

Submarines do not have enough space to store the amount of fresh water its crew needs for drinking, cooking, bathing and laundry, so it must make its own. Distilling equipment on board the boat makes fresh water by boiling salty sea water and collecting the steam created as it condenses on cooled surfaces. The condensed steam is fresh water that later is used by the crew. How does this transformation from salt to fresh water occur? This activity will help you understand the process as you distill your own water.

PROCEDURE:

1. Fill kettle with water.
2. Add at least 5 tablespoons (approx.) of salt to the kettle.
3. Place the kettle on the heating device.
4. Turn device to high and boil water until steam begins to escape from the spout.
5. Place a cool metal spoon or lid in front of the escaping steam.
6. Collect the water condensing on the metal by dripping it into the drinking container.
7. Collect about 1 inch of water in the glass and taste it.



QUESTIONS:

1. Is the water still salty?
2. What makes the freshwater separate from the salt?
3. What happens to the salt?