

T E A C H E R S G U I D E



**SPIRIT LAMP
(STAINLESS STEEL)**
ITEM # 5456-00

LABORATORY - EQUIPMENT AND ACCESSORIES

Students can observe whether an element reacts thermally with this safe, all-metal burner. Wide, round shape is tip-resistant and safer than other burners; it can also be used on a burner. Holds 100 cc of fuel and burns for approximately 1 ½ hours. Comes with aluminum snuffer cap. Tank chrome-plated and has screw-type top and a rubber gasket for a strong, no-leak seal. Copper tube makes a single coil into alcohol. Start with a wooden match. Caution: flame can be invisible.



Materials

- 2 Burners
- 2 wooden matches
- 2 stands
- 2 beakers
- distilled water
- salt water solution (both at room temperature)
- 2 thermometers

Goals & Objectives

Students will:

- define density.
- explain thermal reaction.

ACTIVITIES

- 1 Ask students if they think swimming in the ocean would be warmer than swimming in a lake or pond.
- 2 Remind students that the former is salt water and the other is fresh water.
- 3 Discuss what other variables might be. (They should consider size of the body of water, surface area, location of water, amount of sun available.)
- 4 Tell them they will test one variable, salt/fresh water.
- 5 Place one burner under a stand with a beaker of fresh water on it. Do the same with the other beaker and stand, but with salt water in it. (Make sure beakers are identical, and filled to the same level.)
- 6 Have two students light the burners with the matches.
- 7 As the students wait for a measurable reaction, they should write a hypothesis regarding which beaker will get hotter and why? They can also look up information on-line about density differences.
- 8 At the same time, the burners should be extinguished, and two students should use the thermometers to measure the water temperature.
- 9 Collect correct hypothesis papers and post to reward.
- 10 Use this as an introduction to discuss solutions, and that the more complex the liquid, the more it takes to reach the boiling point.

SET UP

	All pieces in box
	Fill container with denatured alcohol
	Take out rubber holder, put on protection ring
	Light flame
	Place cap to extinguish flames.