Compound Bar

P6-7070

INSTRUCTIONAL GUIDE

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- Compound Bar
- Instructional Guide

Required for activity:

- Bunsen Burner (14-5820)
  or
- Portable Mirco Burner (C5-1005)

Background

The Compound Bar, also known as a Bimetallic Strip, is made of two different metals (brass and Iron) laminated together. When heated, the metals expand. But one metal expands more than the other, and that causes the strip to bend.

Try cooling the strip by dipping it in ice or liquid nitrogen. Do you think it will bend the same way?

Bimetallic strips can be used in thermostats. The strip is curled into a loop and, as the temperature changes, the loop curls and uncurls. When the temperature goes down, the uncurling loop makes an electrical contact that turns the heater on.

Activity

Hold the insulating handle. Put the metal strip in the flame of a burner. Observe as the strip curves to one side.

Take care not to touch the bar until it is completely cool.

Related Products

Ball and Ring Apparatus (33-0630) Explore thermal expansion with this classic demonstration.

Compound Bar Set (P6-7080) Now take your thermal expansion labs a step further with our set of four different compound bars or bimetallic strips.

Thermal Conductivity Bars (P6-7090) Study heat conductivity in different metals. Observe the temperature gradients along the metal bars, and watch them evolve. Rate of conduction of heat can be measured by the mounted strip thermometers.