

612-0025 (15-095) Thermostat Model

Description:

A thermostat is a switch that is sensitive to temperature. It may be used to open or close an electric circuit at a certain temperature. You can find several similar non-electric thermostats in the home on the furnace, stove, hot water heater, air conditioner etc.

There are two or more thermostats on a heating system. One thermostat turns the heat on and off if the house requires it. The other turns the furnace off if it becomes overheated, or turns on a fan or pump to transfer the heat from the furnace to a room.

The usual thermostat for home use employs a strip of **bimetal**. It is called bimetal since it is made of two different metals welded together to form a strip. For example, one side of the bimetal is a nickel iron alloy which expands very little when heated, while the other side is stainless steel which expands much more.

If the bimetal is cooled, it will bend toward the stainless steel side; if warmed, it will bend toward the nickel alloy side.

The bimetal in this device is part of the electrical circuit. It may be turned to either close the circuit on warming or to open the circuit when heated.

How To Use:

1. **Connect in series to battery and lamp.** Clip one end of one clip lead to terminal on Thermostat Model and the other end to one battery terminal.

2. Take the second clip lead and connect from the terminal on the Thermostat Model to the terminal on the light bulb socket.

3. Connect third clip lead from other terminal of light socket to other terminal of battery.

4. **Heat bimetal strip** with hair dryer to **turn on the circuit.** Depending upon which way the bimetal strip bends, you can turn on or off the circuit.

5. Remove lower retaining nut and reverse bimetal strip to reverse the function of the switch.

How To Teach with Thermostat Model

Concepts: Open/closed circuits. Principle of thermostat. Thermostat switch.

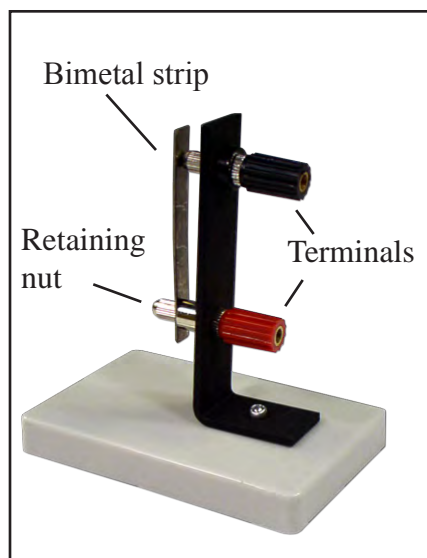
Curriculum Fit: PS/Electricity & Magnetism. *Unit: Electric Circuits. Grades 9-10.*



Materials Needed:

- Light bulb in socket
We recommend 3-6 v bulb
- Battery to 6 volts
We recommend 10-171 Battery Kit
- 3 alligator clip leads
Available from Science First
- Source of heat
We recommend hair dryer

We replace all defective or missing parts free of charge. Additional replacement parts may be ordered toll-free. We accept MasterCard, Visa, checks and School P.O.s. All products warranted to be free from defect for 90 days. Does not apply to accident, misuse or normal wear and tear. Intended for children 13 years of age and up. This item is not a toy. It may contain small parts that can be choking hazards. Adult supervision is required.



E-mail us: info@sciencefirst.com

P/N 24-5095

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