

Black Body Demonstrations

We're going to use an infrared thermometer to explore Black Body Radiation. The thermometer measures Infrared radiation and uses it to estimate the surface temperature of the object. A higher temperature object creates more infrared radiation, which the thermometer detects and estimates a higher temperature.

Part 1:

Use the thermometer to measure the temperature of the desk, then measure the temperature of the ice water in the cooler. What is the camera detecting to be able to measure the temperature without touching anything?

Part 2:

Plug in a hot plate, and then turn it on. As it runs, the thermometer should react and read different temperatures. How does the temperature read out change as you let it run? What must the hot plate be producing in order for the thermometer to read different measurements?

Make sure to unplug your hotplate when you are done.

Part 3:

Turn on the toaster and let it heat up. Go ahead and use the thermometer to measure the temperature of the heating element inside the toaster. Why does the toaster's heating element begin to glow red? The data from the activity might help you explain.

Make sure to unplug the toaster when you are done.