Purpose

Find places heat where heat is being transferred into or out of a room.

Materials

Infrared thermometer Data Chart
Camera

Procedure

1. Use the IR thermometer to record the temperatures at each listed location. Take measurements at the same distance from the object each time.
2. Take photos of any areas where you see evidence of damage to a door seal or window frame.

Location or Room #	Door frame - Outside °C	Door frame - Inside °C	Front wall (center) °C	Back wall (center) °C	Window #1 °C	Window #2 °C	Comments and Observations

Analysis

Use your data to develop a list of ECMs (Energy Conservation Measures) that could be implemented by the district to slow down the loss of heat during the winter and prevent heat gain in the summer.

IR Thermometers

Sper Scientific IR Thermometer 800101

1. Hold the IR gun, press the trigger and aim the laser guide at the target.
2. Results immediately appear in ºC or ºF on the backlit LCD and are automatically held for 6 seconds after the trigger is released.

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Other ways infrared thermometers can be used to improve energy conservation:

- Detect hot spots or leaks by taking sample spot readings of refrigerators, freezers, refrigeration lines, compressor motors, electrical, and HVAC equipment.
- Locate where heat is being transferred into or out of a building during hot and cold weather so weather stripping or insulation can be added or repaired.

How do infrared thermometers work?

All matter- liquid, solid, or gas – will constantly exchange thermal energy in the form of electromagnetic radiation with its surroundings. If there is a temperature difference between the object in question and its surroundings, there will be a net energy transfer in the form of heat. This means that a colder object will be warmed at the expense of its surroundings, and a warmer object cooled. If the object in question is at the same temperature as its surrounding, the net radiation energy exchange will be zero.
An IR thermometer senses the infrared energy emitted by the surface under test. All materials emit infrared energy and the amount of energy emitted is proportional to the temperature of the material. The meter simply converts the infrared it collects into a temperature display.