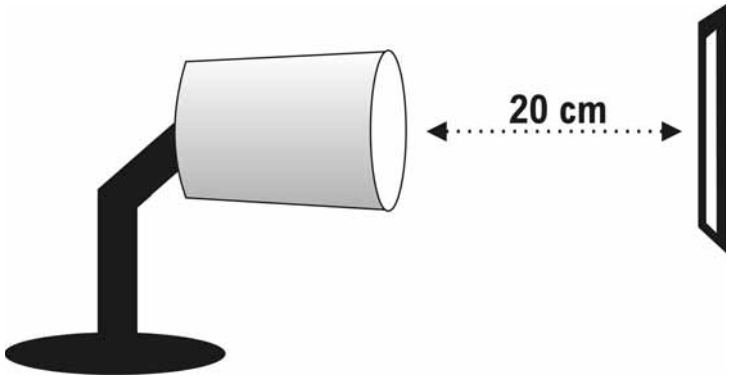
Light Bulb Investigation 1

Objective

Students will be able to compare the heat output of incandescent, compact flourescent, and light emitting diode bulbs.



Materials

- 3 Lamps
- 1 Incandescent light bulb
- 1 Compact fluorescent light bulb (CFL)
- 1 Light emitting diode bulb (LED)
- 3 Thermometers
- Tape

Question

How does the heat output differ between an incandescent, compact flourescent, and light emitting diode bulb?

Hypothesis

Procedure

1. Place the incandescent bulb in one lamp the CFL in another lamp, and the LED bulb in the third lamp. (If you do not have three lamps, conduct three trials, one for each bulb.)
2. Place the lamps on a table about 20 cm away from a blank wall. The light should face the wall.
3. Tape the thermometers to the wall so the lamps shine directly on them, as shown in the diagram above.
4. Record the thermometer readings in the chart below.
5. Turn on the lamps. Record the thermometer readings at 2-minute intervals for 10 minutes.
6. Calculate and record the change in temperature (ΔT) for each bulb. Compare.

Data

BULBS	TEMPERATURE (CELSIUS)						
	0 MIN	2 MIN	4 MIN	6 MIN	8 MIN	10 MIN	ΔT
Incandescent							
CFL							
LED							

Conclusion

What did you learn about the heat output of the three bulbs? Use data to support your answer.

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