

Waste Heat



Grade Levels:
4-6

Question:

Does a high watt bulb produce more heat than a low watt bulb?
Does an incandescent bulb produce more heat than a fluorescent bulb?

Possible Hypotheses:

A high watt bulb does/does not produce more heat than a low watt bulb.
An incandescent bulb does/does not produce more heat than a fluorescent bulb.

Materials:

Lamp
Thermometer
25-watt incandescent bulb
100-watt incandescent bulb
Two fluorescent bulbs that produce lumens comparable to the incandescent bulbs

Procedure:

1. Put a 25-watt incandescent bulb in the lamp and turn it on.
2. Hold the thermometer six inches above the bulb for one minute and record the temperature. Turn off the lamp.
3. Let the bulb cool, remove it, put in the 100-watt lightbulb, and turn it on. Repeat Step 2.
4. Repeat the procedure with the fluorescent bulbs.

Analysis and Conclusion:

Is more heat produced when more light is produced?
Which lightbulbs are more energy efficient – incandescent or fluorescent?

