



# Light Bulb Investigation 3

## Objective

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

## Materials

- 3 Lamps
- 1 Incandescent light bulb
- 1 Compact fluorescent light bulb (CFL)
- 1 Light emitting diode bulb (LED)
- 1 Light meter
- Books, all the same thickness

## Question

How does the light output vary in different types of light bulbs?

## Hypothesis

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## 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 on identical stacks of books, as shown in the diagram above.
3. Plug the lamps into an outlet and turn them on.
4. Use the light meter to measure the light output of the lamps.
5. Record your measurements and calculations in the data table.
6. Compare the output measured by the light meter to the stated output of the bulbs found on their packaging, or printed on the bulbs themselves.

## Data

BULBS	FOOT-CANDLES FROM LIGHT METER	STATED LUMEN OUTPUT
Incandescent		
CFL		
LED		

## Conclusion

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

