



Bright Ideas

STEM Sims

Lesson 3: Compact Fluorescent Lamp (CFL) Light bulbs

Compact fluorescent light bulbs use a fluorescent powder coating (on the inside of the glass) that transfers ultraviolet light into visible light. Compact fluorescent lamps have a glass tube that is twisted into a spiral so that they take up approximately the same amount of space of an incandescent bulb. A drawback of fluorescent lights is that they take a few seconds to warm up before they can emit 100% of the light that they are capable of.

Doing the Science

1. Start the Bright Ideas Simulation by clicking on the “Sim” tab.
2. Click on the CFL light bulb. It will move to the base. Record the number of watts that the display reads on the base in Table 1 below.
3. Click on the timer in the lower right hand part of the screen. When the bulb burns out, the data will be filled in below. Repeat step 2 over and over again until your time is out. A table will appear with all of the data for the CFL row completed.
4. Record your findings in Table 1 below.

Table 1.

Bulb Type	Bulb Wattage (W)	Average bulb life (hours)	Cost of light bulbs	Electricity cost	Total cost
CFL					

Do You Understand?

1. Would CFL be the best technology for a) an effective flashlight? b) homes with children? c) cost efficiency?
2. What would the total cost be if the bulb wattage was 15W?