

# Let's Compare Light Bulbs!



CFL



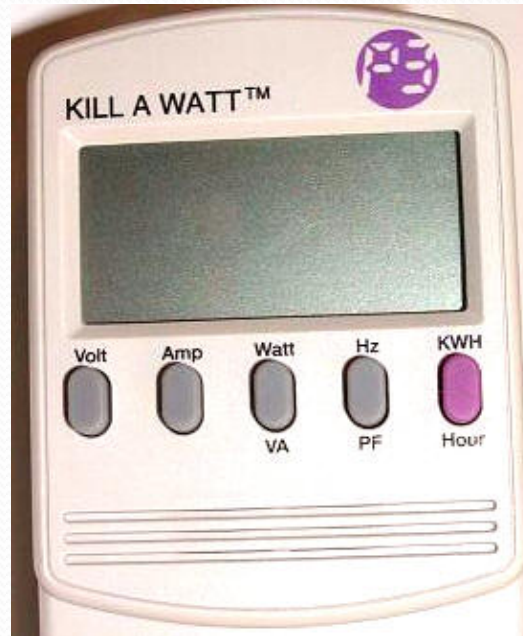
Incandescent



# What makes a “good” light bulb?

- Doesn't use a lot of energy.
- Doesn't cost too much.
- Is bright.
- Anything else??

# How much power does a light bulb use?



Power consumption reflects how quickly energy is used, and is measured in **WATTS**.



# Let's Measure!!!

- How many WATTS did your light bulb use??????

POWER EXPERIMENT

What did you notice about the difference between the amount of power an incandescent light bulb uses compared to a CFL??



# CFLs use **less power** (and energy) than incandescent light bulbs!



### LIGHT OUTPUT EQUIVALENCY

To determine which ENERGY STAR qualified light bulbs will provide the same amount of light as your current incandescent light bulbs, consult the following chart:

INCANDESCENT LIGHT BULBS	MINIMUM LIGHT OUTPUT	COMMON ENERGY STAR QUALIFIED LIGHT BULBS
WATTS	LUMENS	WATTS
40	450	9-13
60	800	13-15
75	1,100	18-25
100	1,600	23-30
150	2,600	30-52

LEARN MORE AT [energystar.gov](http://energystar.gov)



# But are CFLs as bright as incandescents?

## BRIGHTNESS EXPERIMENT



LIGHT OUTPUT 600 LUMENS, EN



Light Output | En  
**830 Lumens** | 13



## Brightness (or light output) is measured in lumens.


- As you can see, the CFL emits **830** lumens of light and the incandescent emits **600** lumens of light.
- That means that even though the CFL uses less energy, it puts out more light than the incandescent!!!!



So far, we found that the CFL was brighter than the incandescent and used less energy. Let's find out why the incandescent used more energy.....

Let's compare the temperature of both bulbs!!!







Which do you think will be  
hotter? And why?

TEMPERATURE EXPERIMENT

What did you find out?

- 
- Both bulbs generate light and heat.
  - The CFL generates more light and less heat.
  - The incandescent is wasting energy because it is creating too much heat.
  - So, the CFL is more **EFFICIENT** because it uses less energy to generate more useful light.



For that reason, the CFL is  
better than the incandescent!



# One big problem

- Most Fluorescent light bulbs contain **Mercury**, a poisonous metal.
- So CFLs must be thrown away carefully.

# LED: Another new bulb

- LED bulbs last just as long and are just as efficient as CFLs.
- LED bulbs contain no mercury.
- LED bulbs are a little more expensive.
- Lots of families used LED holiday lights this year.



[jonhotchkiss.com](http://jonhotchkiss.com)



[bluelight.ru](http://bluelight.ru)



The End

**Thank you!**