

# All About Light Bulbs

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# History of Light Bulbs



Humphry Davy invented the first electric light in 1800. The name of it was the electric arc. In 1860, a long-lasting functional electric light was developed by Joseph Swan. The filament operated well, but burned fast. Thomas Edison tested numerous different filaments to find a suitable material that will be good for glowing and be long lasting. At last, in 1879 Thomas Edison found a carbon filament glowing but not burning for 40 hours in a bulb free of oxygen. Later, Edison created a light that could shine for more than 1500 hours! In 1882, Lewis Latimer invented a way for making the carbon filaments. Willis Whitney made a filament treatment in 1903, so that the bulb's inside wouldn't be darkened while it shone. Finally, William Coolidge invented, in 1910, a tungsten filament that lasted much longer than other filaments. The world was changed by the *incandescent light*.

# WONDER QUESTIONS

1. What good impact would it make if more people used energy efficient light bulbs?
1. What is the negative effect of energy efficient light bulbs?
1. How much energy does each type of light bulb save?
1. What do you do if a CFL breaks?
1. How should people properly dispose of different types of light bulbs?

# What good impact would it make if more people used energy efficient light bulbs?

If more people used energy efficient light bulbs, then it would save energy, money and help the global warming problem. An average American household has 50 to 80 light bulbs, imagine how much energy can be saved if most bulbs were replaced with energy efficient bulbs. In other words, the more people use efficient lights in their homes, the better. Energy efficient bulbs conserve energy which helps nature (and the planet you live on) and it saves you money.



# What is the negative effect of energy efficient light bulbs?

CFLs contain mercury, a dangerous substance and produce ultraviolet radiation leakage. They also don't light up in the cold or with dimmer switches. LEDs might affect your health, specifically sleep, because they emit quick-wave, heavy-energy blue and violet light. A lot of people also complain about itchiness, redness in the eyes and light headaches after lots of exposure to LEDs.



# How much energy does each type of light bulb save?

Let's say that traditional incandescents use 100% energy. That means they conserve electricity by 0%. The energy-saving incandescents save 25%. The CFL halogen saves 65% of the electricity compared to incandescents, but the standard CFL saves 75%! Lastly, the Halogen LED saves 72% power and the regular LED saves 75% to 80% power. The regular LED is the most energy-efficient of all the other light bulbs.



# What do you do if a CFL breaks?

Instead of vacuuming it all up, carefully sweep up the glass pieces and parts and put them in a plastic bag. Then use a wet paper towel to fully clean out the space where the bulb broke. Put that towel in the plastic bag too. Then, open all the windows in the room to air it out from the mercury. Then dispose of the bag.



# How should people properly dispose from different types of light bulbs?

CFLs and LEDs, because of their dangerous chemicals, should get recycled at Home Depot, Ikea or Lowe's. That way, some of their parts get reused and the dangerous chemicals won't get into a place they should not be in. And the incandescent and Halogen should simply be thrown away into the trash, since they don't contain chemicals that are dangerous.





# Fun Facts

- Livermore, California's Centennial Light is the longest lasting light bulb. It has been lit since 1901, with some power outage pauses.
- LEDs are very efficient because they emit just visible light, unlike incandescents.
- Just 10% energy in an incandescent light bulb turns into light. The other 90% creates heat.
- CFLs use about 80% less electricity and work 12 times as long as incandescents

**DID YOU  
KNOW?**

# Vocabulary

- **CFL, LED, incandescent, halogen:** Types of light bulbs
- **Light bulb efficiency:** Producing more light with less energy consumption
- **Energy:** Power/electricity
- **Mercury:** A dangerous radioactive substance
- **Environment:** Nature