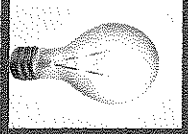
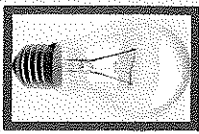


Bulk Types

Incandescent

Incandescent light bulbs work by heating a tungsten filament or wire, until it glows. This is what produces the light you see. Unfortunately, 90% of the energy used to generate that light is wasted as heat, making incandescent bulbs a very inefficient way to light your home.



CFLs

Compact fluorescent lamps (CFLs) create a chemical reaction among gasses (argon and mercury vapor) inside the glass tube. The electric current is driven through this tube generating invisible ultraviolet light that excites a fluorescent coating (called a phosphor) on the inside of the tube, which then emits visible light. ENERGY STAR CFLs provide bright, warm light and use 75% less energy, produce 75% less heat, and lasts up to 10 times longer.



How Does the Energy Go?

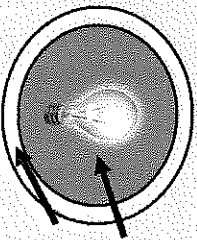
Incandescent Bulbs

Create light by passing electricity through a metal filament until it becomes so hot that it glows.

Energy Output = 100%

Of the 100%, 90-95% electricity is converted to heat vs. 3-5% converted to light.

Lifespan is 1,000 hours which is about 6 months.



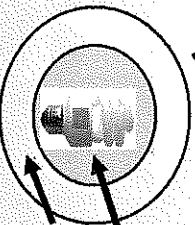
Heat
Light

CFLs

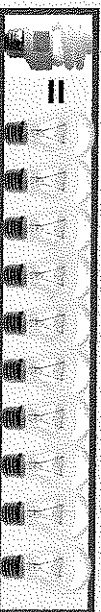
Energy Output = 100%

Of the 100%, 60-65% electricity is converted to heat vs. 35-40% converted to light.

Lifespan is 10,000 hours which is about 5 years.



Heat
Light



QUESTIONS YOU MAY HAVE

What is the lifespan of a bulb?

A bulb's lifespan is the length of time the light bulb stays lit.

What is the formula for calculating costs of a light bulb over its lifespan?

Lifespan cost calculation for one light bulb = (Energy Cost in kWh) x (Lifespan of light bulb in hours) x (Bulb wattage in kW) + purchase price of the light bulb.

How do you calculate the cost of different bulb types over their lifespan?

60W incandescent:

$(\$ 0.14/\text{kWh}) \times (1000 \text{ hr lifespan of bulb}) \times (10 \text{ bulbs}) \times (\$0.060 \text{ kW}) + \$0.75 \text{ bulb purchase price} = \$84.75 = \text{lifespan cost of one 60W incandescent light bulb.}$

15W CFL:

$(\$0.14/\text{kWh}) \times (10,000 \text{ hr lifespan of CFL}) \times (1 \text{ bulb}) \times (\$0.015 \text{ kW}) + \$6.00 \text{ bulb purchase price} = \$27.00 = \text{lifespan cost of one 15W CFL.}$

Power Equivalency Between Incandescent and CFL Bulbs

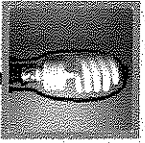
Incandescent	CFLs
10 watts	2.5 watts
30 watts	7.5 watts
60 watts	15 watts
100 watts	25 watts
300 watts	75 watts
600 watts	150 watts

How You Can Be Part of the Solution!

Please go to:

www.mountviewmiddleschool.org

and click on the Energy Star Pledge link. Pledging to change even one light bulb can save about \$30 over the lifetime of the bulb and pay for itself in about 6 months.



Pass It On!

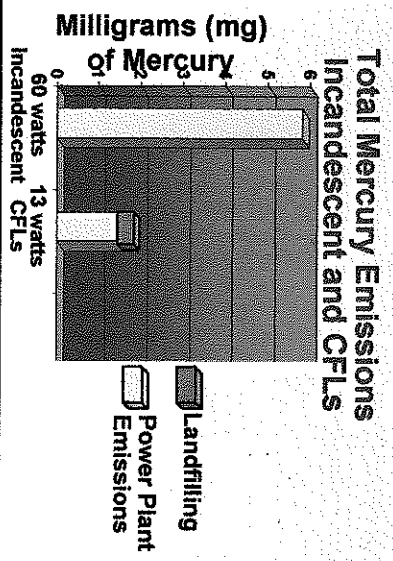


Please send this pamphlet to a friend, coworker or family member and ask that they consider reducing the CO₂ emissions by changing one small light bulb.

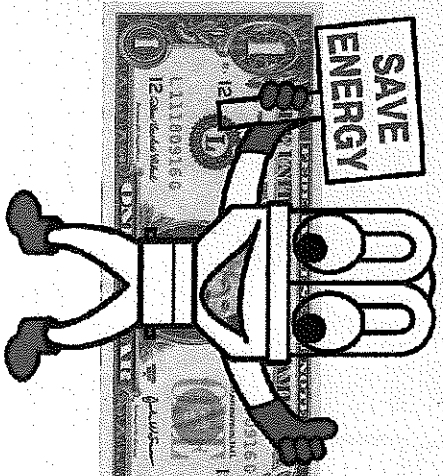


Fun Facts About Mercury!

- Mercury is an element found naturally in the environment.
- The U.S. is responsible for the release of 104 metric tons of mercury emissions each year.
- Mercury released into the air is the main way that mercury gets into water and accumulates in fish which is the main way for humans to be exposed. Exposure at high levels can harm the brain, heart, kidney and lungs.
- CFLs contain a small amount of mercury sealed within the glass tubing (4 mg in each bulb).
- No mercury is released when lit or in use.
- Mercury is an essential element used to create light in a fluorescent bulb.



Kisses Sweetest
Guess What? You Can
All you have to do is turn off the lights!



CHANGE ALL LIGHT
CHANGE THE WORLD
ENERGY STAR

Period 6
Student ID: 001004634
December 15, 2009