

A TALE OF TWO LIGHT BULBS: Efficiency Demonstration

Equipment:

Extension cord

Light bulb "Y" socket (holds two bulbs)

Light bulb*

Compact Fluorescent Bulb (Use a 75-watt light bulb and the equivalent (measures in lumens) compact fluorescent bulb.)

Lessons:

- Ways to find energy savings through better technology.
- The need to examine life costs to find the best deal.

Do The Math!

The amount of energy wasted by the basic incandescent light bulb is amazing. Only 10% of the energy used by the bulb is needed to produce light. The remaining 90% of the energy consumed produces wasted heat energy. This is obvious only moments after the bulb has been turned on. It is too hot to hold in your hand.

The compact fluorescent bulb uses smarter technology to turn most of the energy consumed into light with little energy wasted. The fluorescent bulb in contrast is only slightly warm to touch.

When shopping for a new light bulb, most consumers would not consider the fluorescent bulb because of initial cost. The standard bulb may cost \$0.75 or less where the equivalent fluorescent bulb may retail for \$5.

BUT - Do The Math!

On a chalkboard or using an overhead projector, make two columns, one for each bulb. Remember that each bulb produces the same amount of light.

	75 Watt Bulb	Fluorescent Bulb
Cost:	\$0.75	\$5.00
Energy Used:	75 Watts	18 Watts
Average Life	750 hours	10,000 hours

Add the cost of regular bulbs necessary to last 10,000 hours. $10,000/750= 13$

Cost to purchase 12 additional bulbs: $12 \times \$0.75 = \9 .

Comparison costs are now \$ 9. versus \$5. - if this savings alone does not convince you, check out the energy savings below!

Do The Math!

Energy: For 10,000 hours, the standard bulb consumes 75 watts. The compact fluorescent bulb consumes 18 watts. OR 750,000 Watt hours versus 180,000 Watt hours

1,000 watts = 1 kilowatt hour (kWh) and your electric company bases its charges on the number of kilowatt-hours used. If your costs are \$0.10 per kilowatt-hour, then figure:

750 kilowatt hours \times \$0.10 = \$75 and 180 kilowatt hours \times \$0.10 = \$18

Energy dollars saved = \$57.

Not to mention that the less electricity that is generated, the less pollution we have. In commercial buildings, (schools) there are additional savings since bulbs are changed less frequently, labor costs are saved.

Watt Watchers: 1-888 US WATTS

Texas: <http://wattwatchers.utep.edu>

America: <http://p2.utep.edu/watts>