

Reading a Light Bulb Package

Hands-on Activity

Let's say that the light bulb in the table lamp on your desk has burned out, and you need to replace it. So, you look in the kitchen cupboard for a bulb that will give you good light to read and study by. In your cupboard you find the three light bulb packages shown below:



Notice that you have a choice of an incandescent bulb, a fluorescent bulb, and a halogen bulb. Which bulb is best for the job? When it comes to selecting the right light bulb for your table lamp, it might be good to know something about how efficient the different options are.

What you get out of something compared to what you put in is known as efficiency. When it comes to light bulbs, the efficiency of different bulbs can be compared by looking at how many lumens are produced for each watt of energy. You can also compare the number of hours the bulbs will last per watt of energy used.

What You Will Need:

Packages for incandescent, compact fluorescent, and halogen bulbs that might be used in a table lamp (see above)
A calculator

Lumens per Watt

For each of the light bulbs above, determine the Lumens per Watt by dividing the number of lumens produced by the number of watts of energy used. List the bulbs in order from least lumens per watt to greatest lumens per watt. Which bulb appears to be most efficient?

Hours per Watt

Does the wattage of a bulb affect how many hours it can remain lit before it burns out? Compare the information on the packages and find out. Fluorescent bulbs are said to last a lot longer than incandescent bulbs. Does your investigation support this claim? What about the longevity of halogen bulbs? How do they compare with incandescent and fluorescent? If you turn on a 60-watt light bulb for only 5 hours per day, how many days will pass before you can expect the bulb to burn out? If you started using the bulb on New Year's Day, will it make it to the 4th of July?

Can you think of some other differences between the three types of bulbs? For example, which do you think gets hotter when they are lit? Can they all work with a dimmer switch? do some research and present what you have found out about the three different types of bulbs to your classmates; compare your findings with theirs.