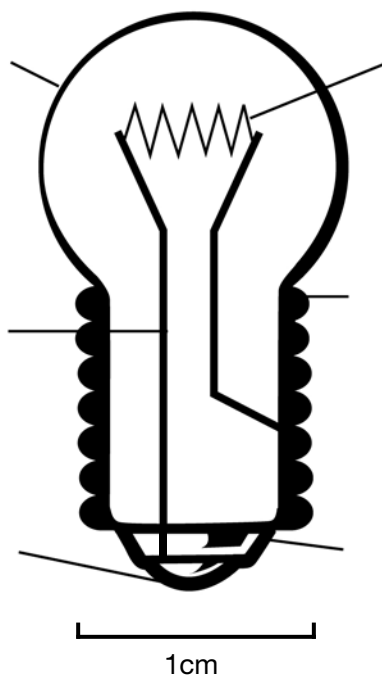


Inside a light bulb

Name: _____ Date: _____



A light bulb

Inside a light bulb, there is a wire filament, which is often made of the metal tungsten. The filament looks like a spring. It is attached to two metal rods.

One of these rods is connected to the threaded outer metal case. The other rod is connected to the shiny metal part on the base of the light bulb. A non-metal spacer, which does not conduct electricity, separates the two connection points.

When electrical energy flows through it, the filament heats up to more than 2,000 degrees Celsius— that's twice the temperature of a pottery kiln! The flow of electrical energy through the filament heats the wire and causes it to glow white-hot and give out a bright light. The heat from the filament warms the light bulb's glass, to temperatures that can burn a hand brought too close.

You'd think that being so hot the metal would burn up, however, fire needs oxygen—that's why you can smother some fires and they go out. The bulbs are filled with nitrogen or neon gas, which means there is no oxygen in the bulb. This allows the filament to glow, without burning, for hundreds of hours.



SAFETY NOTE: In this activity, the light bulbs are low-voltage bulbs that are safe to touch. Never touch household light bulbs when they are switched on as they are very hot.

Complete the labelled diagram of a light bulb with the following labels:

✂	glass enclosure	metal case	non-metal spacer
	metal base	tungsten filament	metal rods