

THE LIGHTBULB BASH

Concepts Illustrated:

(1) The Bernoulli Effect

Time Requirements: 5 minutes

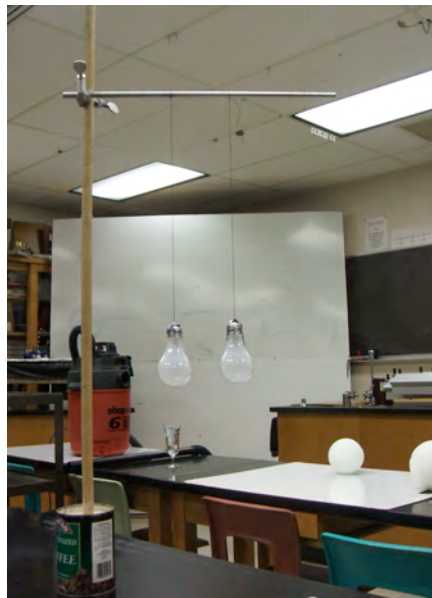
Grade Level of Audience: This qualitative demonstration is suitable (and enjoyed) by students at all age levels.

I. Materials and Equipment Utilized

1. Some type of vertical support stand at least 3 ft tall with a horizontal support rod or stick at least 2 ft long.
2. Two identical, standard base, light bulbs.
3. String and scissors.

II. Description of Set-up and/or Construction of Apparatus

1. Cut two, 12 inch, pieces of string.
2. Attach one end of each string to the base of the light bulb.
3. Attach the other end of each string to the horizontal support rod. The bulbs will be hanging upside down. Adjust the position of the strings on the horizontal support rod, such that the light bulbs are about an inch apart.



III. Details of Student Implementation

1. Either by blowing or using a forced air source, such as a vacuum, direct a moving air between the light bulbs. The two light bulbs will move together, instead of apart, and touch.



1. The general idea being demonstrated is that the faster air moves across a surface, the lower the pressure exerted by the air. The moving column of air represents a column of lower pressure relative to the static air mass surrounding the moving air. In this case the moving air will be between the light bulbs and the static air mass will be on the outside of the light bulbs. As a result, when the air is blown between the bulbs, they will move together and touch, much to the surprise of many students (and adults)

2. Be careful of the clean up in the event one of the light bulbs happen to break.