

## THE DEMONSTRATION CORNER

### Keeping Alive the Sense of Wonder ... Counter-Intuition

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*"... The whole art of teaching is only the art  
of awakening the natural curiosity of young  
minds ..."*

*Anatole France*  
1921 Nobel Prize, Literature

I have always been interested in finding demonstrations that provoke and awaken the natural curiosity of students. Demonstrations that provide unexpected results, or appear on the surface to violate common sense, are particularly effective vehicles for motivation. These demonstrations or experiments are known as counter-intuitive.

One such clever demonstration makes use of air pressure and gravity acting on water in the simple apparatus shown. The demonstration shows coloured water flowing uphill and producing a fountain effect in an inverted florence flask ... the uphill motion of the water appears to proceed without any visible impetus. Water flowing uphill by itself!

The apparatus is primed by having the florence flask initially 2/3 filled with the coloured water and reservoir #1 is filled with the same coloured water. The water's motion is started by opening the pinch clamp leading to reservoir #2 and it will continue until reservoir #1 is empty. The counter-intuition effect is enhanced if the students are shown the fountain only after it has been started.

The demonstration is useful for Intermediate Grades when talking about air pressure ... and provides an interesting starting point for brain storming with Senior Physics students regarding counter-intuition, conservation of energy, and perpetual motion machines. I recommend it.

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Submissions describing demonstrations will be gladly received by the column editor.

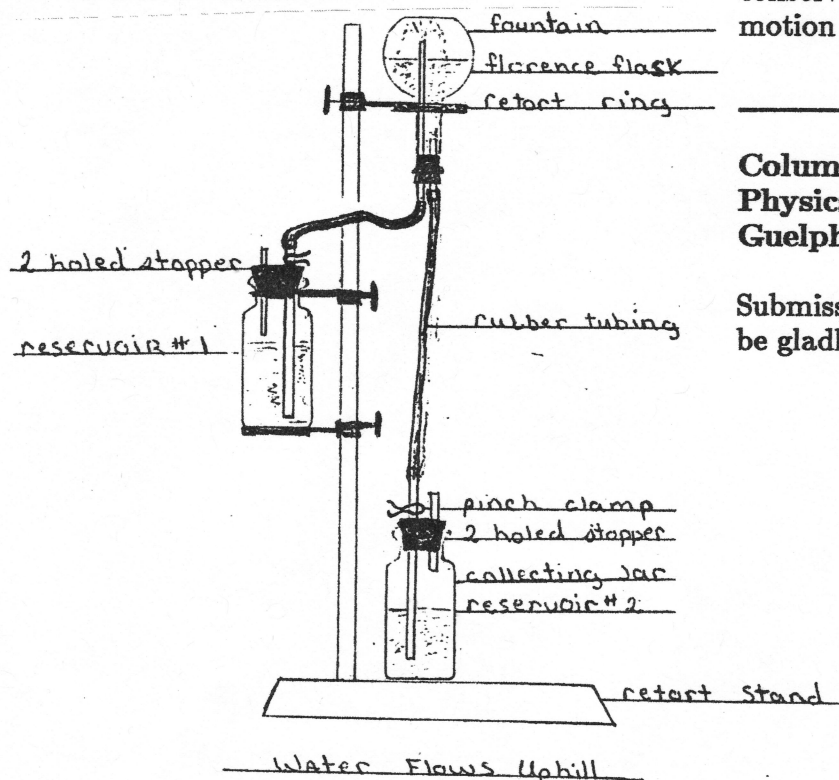


diagram by Clifton  
Pecorinquette