Chimney Effect

Apparatus

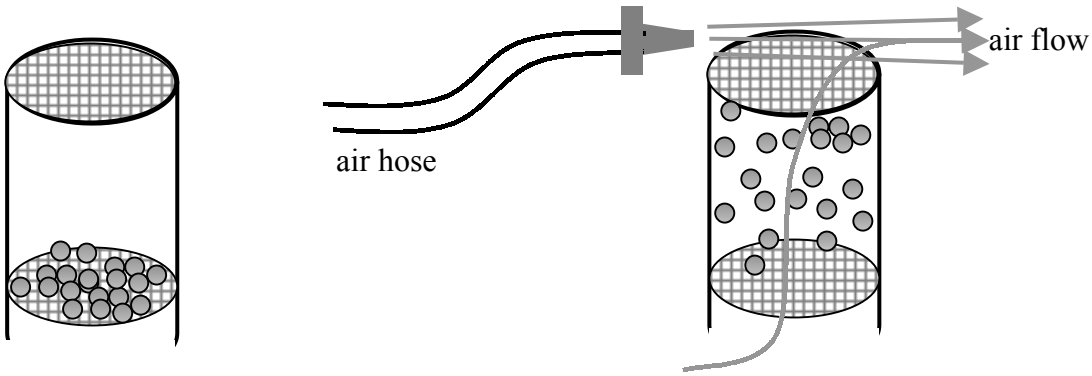
clear glass or Perspex tube, with mesh at top and bottom, and gap at bottom, or held with stand, polystyrene beads in the tube (larger than gaps in mesh), air blower
The mesh prevents the polystyrene balls from flying out and being lost or making a mess.

Action

The students blow the air across the top of the chimney.

The Physics

The air blowing across the top of the chimney is at a high velocity and hence lower pressure than the air in and below the chimney. If the pressure gradient is great enough there will be a flow of air up the chimney, which will carry the polystyrene beads with it. This an application of the Bernoulli effect.



Accompanying sheet

Chimney Effect

Aim the air flow across the top of the chimney.
What happens to the little balls?
Explain your observations.

Why is this such a useful effect?