Air expands when heated
To show that air expands when heated, fit an electric light bulb flask or a bottle with a one-hole stopper or cork which has a 30cm length of glass tubing or a soda straw through it. Place the end of the tube in a small bottle of water. Heat the flask and observe what happens. Heat the flask until a considerable amount of air has been removed and then cool the flask by pouring cold water over it or by rubbing it with a piece of ice.

Another way to show that air expands when heated
Snap a toy balloon over the neck of a small bottle and place the bottle in a pan of warm water.