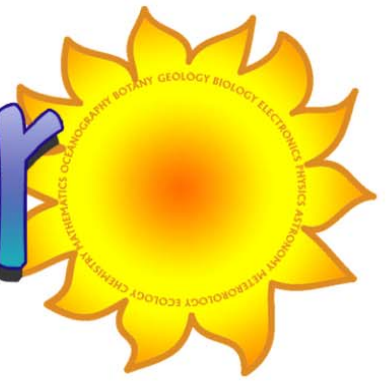


# Science in the Summer



## MAGDEBURG HEMISPHERES

This demonstration is a small copy of an experiment done about 300 years ago by Otto Von Guericke in Magdeburg Germany.

It shows that air exerts a force on all surfaces which may be quite large. The force may not be apparent on a surface if there is air on both sides and the pressure forces are balanced. If however air is removed on one side, the unbalanced force of the air on the other will push the surface strongly.

This experiment uses a hollow sphere which has been divided in half. When the two halves are put together and air between them is pumped out, the air pressure on the outside will not be balanced by any force from inside and the halves will be held together strongly.

The cross section area of the sphere is 12.6 square inches. Air pressure at the surface of the earth is about 14.7 pounds per square inch. The force needed to separate the hemi spheres is 185 pounds.