

INSTRUCTIONAL GUIDE

Contents

- Atmospheric mat
- Instructional Guide

Required for activity:

- Flat-top lab stool or similar item

**Background**

Place the mat down on a smooth, flat surface. Pick it up by its edge. Easy, right? Put it down again and lift it by the hook. Can't do it, can you? It's like the mat is glued down! Release the hook, and lift it by the edge again to show that it is not stuck at all.

How it works:

The mat is held down by atmospheric pressure, which is approximately 15 pounds per square inch. A quick calculation leads to a total pressure of over 1500 lbs. on the mat (assuming no air at all is under the mat). Now, you probably don't have to pull with 1500 lbs. of force to lift the mat. Imperfections in the rubber can lead to bumps and leaks, breaking the seal.

Set-Up

Place the mat flat on a table with the screw heads facing up. Screw the hook into the center of the mat. Be sure that the end of the hook does not protrude beyond the opposite side of the metal washer.

Store flat. Folds and curves in the rubber will cause the mat to buckle and not hold tight. The hook may be easily removed for convenient storage.

Related Products

Atmospheric Pressure Cups (P1-2010) In this economical version of the classic Magdeburg Hemisphere demonstration, students push two rubber cups together and find that it takes tremendous force to pull them apart.

Gas Laws and Pressure Discovery Pack (P1-2070) Don't just teach the gas laws. Let students deduce them with these exploratory activities!