PROOF OF AIR PRESSURE

MED 16.09

Material:

Item-no.	Qty.	Description
DM551-1M	1	Suction pad
DG200-1S	1	Cord, white, D=1.7 mm, L=5 m
		Weights on hook

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Purpose
Proving with simple methods that there is pressure in the air and showing that this pressure is significant.

Preparation
- clean the rubber surface of the suction pad so that its free of dust and dirt
- press the suction pad against the window (the handle has to be open) – the two handles are folded during this process

Experiment
As soon as the handle is sucked onto the window weights can be attached to the handlebars. If the hooks are too small a cord can be used instead.

Explanation
The handle is pressed onto a firm, smooth surface (window). As shown in the pictures the rubber plate of the handle is raised by folding the handlebars. Since no air can penetrate into the cavity, the air particles in it are divided into a larger space.

The density in the interior has thus been reduced and therefore fewer particles impact the interior surfaces - the outside space has remained unchanged.
Therefore, more air particles bounce there and exert great pressure.

Note
Two handles sucked against each other show the principle of the Magdeburg hemispheres. In this way two students can “pull against each other”.

Practical application
Suction handles for carrying glass panes (in this design there are "double suction cups" which are used to carry large glass panes. These have a load capacity of more than 100 kg.) Denting dents in metal sheets (e.g. in the case of car damage)