

The Scenario

Subject	Fluid Mechanics / Atmospheric pressure
Length	1:40
Main objectives	Air pressure caused by gravity, atmospheric pressure force, atmospheric pressure.
Detailed objectives	
Structure and description of experiments	
1. Introduction	Description: Demonstration of the existence and effect of the atmospheric pressure force on the water level in the tank and the direction of the atmospheric pressure force.
2. Main subject	Description: Understanding the concepts of atmospheric pressure, atmospheric pressure force.
Part 1	
Experiment 1 (0:52)	<p>(0:39) Utilities: Cup, measuring cylinder with water, sheet of paper.</p> <p>Description: Cut out a square or a circle from a sheet of paper, the diameter of which will be approximately 1 cm larger than the diameter of the opening of the glass .</p> <p>Fill a glass with a straight edge with water. Place the paper that we have prepared on top of the glass and press it gently with your fingers.</p> <p>Keep the paper still pressed against the glass and turn the glass with both hands by 180° to a vertical position with the bottom of the glass up. Then move the hand that was holding the paper away. We observe that the water does not flow out of the glass.</p> <p>Questions: Why water does not flow out of the glass, container?</p> <p>Conclusions: The water does not flow out of the glass, because the atmospheric pressure force of the surrounding air acts on it from the bottom up, perpendicular to the paper. This atmospheric pressure force is greater than the hydrostatic pressure force (weight of water) acting on the paper downwards.</p> <p>The result of the action of the Earth's gravity on all particles of the atmosphere is the atmospheric pressure force, which acts perpendicularly to the surface of bodies immersed in the air. The pressure caused by the atmospheric pressure force is called atmospheric pressure.</p>
3. Summary, evaluation and notes	Application: A body located in the air, in the Earth's atmosphere, is affected by the atmospheric pressure force (analogy to the hydrostatic pressure force).

	<p>Notes: We can carry out the experiment by changing, for example, the amount of water in the glass. Without paper or another "cap" of the glass, the attempt will not succeed. In accordance with the laws of physics, water will flow out of the glass when the game is turned.</p>
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