

The scenario

Subject	Pascal's Law, Fluid Mechanics
Length	1:40
Main objectives	Pascal's law, model of hydraulic equipment.
Detailed objectives	
Structure and description of experiments	
1. Introduction	Description: Experiment to demonstrate the principle of operation of hydraulic devices.
2. Main subject	Description: Demonstration and understanding of how pressure is created in a liquid by the action of an external force on the surface of the liquid in the container (liquid body). Show that the pressure in a liquid enclosed in a container due to an external force is the same at all points.
Part 1	
<div style="display: flex; justify-content: space-between;"> <div> (0:39) Experiment 1 (0:42) (1:21) </div> <div> <p>Utilities: Two syringes of different cross-sections connected by a tube, liquid (we used water, do not use sticky liquid so that the piston does not stick), stand, two holders.</p> <p>Description: We will prepare the experiment by first filling the syringes connected by a tube with water as follows. Move the piston of one syringe to the lower position, fill the syringe-beaker system with liquid (water) so that there are no air bubbles under the pistons. Then we place the syringes on the stand by fixing them in the holders.</p> <p>If we press the piston, which is in the upper position, towards the syringe, the other piston moves upwards. By pressing one of the pistons, we exert pressure on the surface of the liquid.</p> <p>Upon close observation, we see that the volume of liquid that we push out with the piston in one syringe is the same as the volume of liquid that pushes out the piston in the other syringe .</p> <p>Questions: Why does the piston move?</p> <p>Conclusions: By pressing the piston of one syringe, we induce a pressure on the surface of the liquid through the action of force in the liquid, which is the same in all places of the liquid. The liquid is almost incompressible .</p> </div> </div>	
3. Summary, evaluation and notes	<p>Application: The property of liquids expressed by Pascal's law is used in technical practice in hydraulic devices .</p> <p>Notes: The experiment can also be carried out without a stand. We let the model of the hydraulic device circulate among the children so that they can try out its functions.</p>



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	Level: elementary school (ISCED 2 / 6th, 8th grade)
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