

The scenario

Subject	Mechanics / Frictional Forces
Length	2:42
Main objectives	To analyse the properties of frictional forces, what they depend on and what they do not depend on
Detailed objectives	
Structure and description of experiments:	
1. Introduction	Description: The motivation for the experiment will be the investigation of acting forces and frictional forces.
2. Main subject	Description: Understand that the frictional force depends only on the magnitude of the compressive force perpendicular to the pad, it does not depend on the size of the surface.
Part 1	
<p style="text-align: right;">(0:40)</p> <p>Experiment 1 (1:30),</p> <p>Experiment 2 (1:48),</p> <p>Experiment 3 (2:04),</p> <p style="text-align: right;">(2:23).</p>	<p>Tools: Scales, force meter, block, weights</p> <p>Description: The body - the block can be placed on the floor so that it touches the surface S, $2S$, $\frac{1}{2}S$.</p> <p>Body with base $\frac{1}{2}S$ we place it on the mat, load it with a weight and pull on the mat with a force meter in a uniform movement. We subtract the magnitude of the applied force.</p> <p>We place the body with the base $2S$ on the mat, load it with a weight and pull on the mat with a force meter in a uniform movement. We subtract the magnitude of the applied force.</p> <p>We place the body with the base S on the mat, load it with a weight and pull on the mat with a force meter in a uniform movement. We subtract the magnitude of the applied force.</p> <p>We will then compare the magnitudes of the acting forces in all three cases. The force meter in the given three cases shows roughly the same amount of applied force.</p> <p>Questions: The size of the friction force depends on the size of the friction surface ? ($2x$, $\frac{1}{2}x$)?</p> <p>Conclusions: The size of the friction force does not depend on the friction surface, but only on the size of the pressure force perpendicular to the pad .</p>
3. Summary, evaluation and notes	<p>The system needs to be set in motion, for the system to start, a greater force must be overcome than when the system moves in a uniform motion.</p> <p>Level: primary school (ISCED 2 / 8th grade)</p>

