

The scenario

Subject	Properties of fluids/ Fluid displacement by capillarity
Length	3:53
Main objectives	To show how a fluid can move through a solid by capillarity
Detailed objectives	
Structure and description of experiments:	
1. Introduction	Description: The objective of this experiment is to observe and understand the phenomenon of capillarity of a liquid through a porous material.
2. Main subject	Description: Why can a liquid be transported through a porous material? What phenomenon occurs? Investigate the capillarity of a water paints through kitchen paper
Part 1	
(0:40), Experiment 1 (0:41)	<p>Tools: Water paints, three glasses and kitchen paper</p> <p>Description: Mix water paints with water in 3 glasses using primary colors: yellow, blue and red. Then, connect the glasses with some kitchen paper and wait to observe how the liquids move through the kitchen paper.</p> <p>A few seconds later, we can observe how the liquids move through the paper, that phenomenon is call capillarity, which is the result of surface, or interfacial, forces. So, capillarity is defined as the movement of water within the spaces of a porous material due to the forces of adhesion, cohesion, and surface tension. That is why we can observe how the water paints "rises" through the paper.</p> <p>Questions: Does density affect capillarity action? – Capillarity rise is inversely proportional to the density of the liquid</p> <p>Conclusions: Capillary action is a scientific phenomenon in which a liquid seemingly defies gravity to flow upward within a solid and depends on the attraction between water molecules and the material (glass walls of a tube or a porous material like paper), called adhesion, as well as on the interactions between water molecules (cohesion).</p>
3. Summary, evaluation and notes	<p>Application: Plants and trees couldn't thrive without capillary action. Plants put down roots into the soil which can carry water from the soil up into the plant. Water, which contains dissolved nutrients, gets inside the roots, and starts climbing up the plant tissue.</p> <p>The ink in pen and the oil in wicks rises due to capillarity.</p>



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