

The scenario

Subject	Chemical reactions /Factors that affect the pH of an acid solution
Length	4:49
Main objectives	To study acid strength
Detailed objectives	
Structure and description of experiments:	
1. Introduction	Description: The objective of this practice is to determine the acidity of different compounds and observe how the pH value changes when changing the concentration.
2. Main subject	Description: Why are some substances more acidic than others? What does this acidity depend on? The pH of three compounds will be measured and the pH value of one of these will be compared by changing the concentration by adding water.
Part 1	
(0:40), Experiment 1 (0:41)	<p>Tools: HCl, CH₃COOH, vinegar, pH paper</p> <p>Description: Add vinegar to a beaker and measure the pH, which has a value of 6. Add acid acetic to a beaker and measure the pH, which has a value of 2. Add HCl to a beaker and measure the pH, which has a value of 1. As you can see, the HCl is more acidic than vinegar and acid acetic.</p> <p>Then, add 20 mL of water and then add a few drops of HCl. The pH value is like that of acetic acid (2). Changing the concentration of HCl by adding water, caused its acidity to decrease.</p> <p>Questions: Does the concentration of the solution change its acidity? – Yes, the overall concentration of hydrogen ions is inversely related to its pH.</p> <p>Conclusions: The strength of an acid is determined by the concentration of hydrogen ions in the solution, and the more hydrogen ions present, the stronger the acid. You can change the presence of hydrogen ions by changing the concentration of the solution, and consequently, changing its acidity.</p>
3. Summary, evaluation and notes	<p>Application: Acid/base chemistry is a pervasive scientific concept used across many engineering disciplines. Engineers use their knowledge of acids and bases to design non-corrosive material combinations, car batteries, chemical fertilizers, and food preservation techniques. Knowing this information helps to design non-corrosive substances or modify those that are.</p>



	Level: secondary school
--	--------------------------------