

Biology Lab



Overview:

Unleash your curiosity and delve into the captivating realm of pH and Cells with our immersive laboratory experience. Traverse the intricate landscapes of cellular environments as you unravel the profound impact of acids on pH. Engage in hands-on experiments using test tubes, pH paper, and a range of solutions, including water, pH 7 buffer, and simulated cytoplasm. Witness the transformative effects of acid addition and discover the vital role of buffering capacity. Unearth the secrets of pH's intricate dance with cellular function, fostering a profound understanding of this fundamental aspect of life.

How to Find the Experience

Once logged in on the VXRLabs homepage, navigate to the "Subjects" tab, select the "Biology" option from the left-side menu, then select the "General Biology" option, then select the "pH and Cell Structure" option

Next Generation Science Standards (NGSS)

Visit the link below or scan the provided QR code to see specific standards and acknowledgments.



HS-LS1 From Molecules to Organisms: Structures and Processes

<http://www.nextgenscience.org/dci-arrangement/hs-ls1-molecules-organisms-structures-and-processes>





Gameplay Instructions

Experimental Procedure: Effect of Concentration on Enzyme Activity

The student will label three test tubes and fill them to the halfway mark as follows:

Tube 1: water

Tube 2: pH 7 buffer (inorganic) solution

Tube 3: simulated cytoplasm (a buffered protein solution) ex: albumin solution

The student will use pH paper to determine the pH of each tube by dipping the end of a glass stirring rod into the solution and then touching the stirring rod to a 5 cm strip of pH paper. The student will read the current pH by matching the color observed with the color code on the pH paper package.

The student will then add 5 drops of 0.1 N hydrochloric acid (HCl)-shaking or swirling after each drop.

Student will use pH paper as in Step 2 to determine the new pH of each solution.

