

## Using an Investigative Approach to Teach the Concepts of Fermentation\*

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Classically, the concepts of fermentation and respiration have been difficult to convey in a traditional laboratory setting. This is an investigative exercise which emphasizes hypothesis formation and experimental design; it requires incorporation of students' knowledge from both their lecture class and textbook. This lab can be completed in one 3-hour lab period or two 2-hour lab periods. Students are given the information that fermentation of wine ceases at a concentration of approximately 14% alcohol. Given a 2 hour lab scenario, students spend the first week of the lab exercise working in groups of 4–5 to form a hypothesis and to design an experiment for testing why this phenomenon occurs. Each group tests its hypothesis by carrying out the experiment the second week of lab. This lab provides an excellent opportunity for students to interpret real results obtained in the lab, to evaluate and refine experimental methods, and to communicate their findings either as a written lab report or an oral presentation.

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