

## AP Biology Lab 5: Cell Respiration

### Objectives

~~In this lab, s~~Students will use either oxygen gas consumption or carbon dioxide gas production as a measure of respiration rates in seeds.

- ◆ ~~Students C~~compare the rate of cell respiration in germinating versus dormant peas.
- ◆ ~~Determine the effect of temperature on respiration rate.~~

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### Procedural Overview

Students will gain experience conducting the following procedures:

- ◆ ~~Using the CO<sub>2</sub> gas sensor to D~~determine changes in atmospheric ~~carbon dioxide~~CO<sub>2</sub> levels using the carbon dioxide gas sensor.
- ◆ ~~Calculate-Calculating~~ the respiration rate of germinating versus non germinating peas.
- ◆ ~~Determine-Determining~~ the effects of temperature on respiration rate.

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### Time Requirement

- ◆ Preparation time 30 minutes
- ◆ Pre-lab discussion and activity 15 minutes
- ◆ Lab activity 45 minutes
- ◆ Preparation time 10 minutes (germinating peas require prep two days prior)
- ◆ Pre-lab discussion and activity 15 minutes
- ◆ Lab activity 45 minutes

Comment [JC1]: I changed this to 30 minutes because of all the steps required including the 2 days before preparation. It could very well be more.

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### Materials and Equipment

**For each group:**

◆ <del>Electronic data collection and display device</del> Data collection system	◆ Dry pea seeds, 25
◆ Carbon dioxide gas sensor <del>and sampling bottle</del>	◆ Germinating pea seeds at room temperature, 25
◆ Sensor Extension Cable	◆ Germinating peas <u>seeds</u> , chilled, 25
◆ <del>Glass beads, 25</del> Sampling bottle	◆ Germinating peas <u>seeds</u> , boiled, 25
◆ <del>Glass beads, 25</del>	◆