

Cellular Respiration Lab Set-up and Procedure

- I. Each lab group will have the equipment to set up 2 respirometers.
- II. To assemble and use the respirometers:
 1. Obtain 2 vials.
 2. Place a piece of absorbent cotton ball at the bottom of each vial.
 3. Using a dropper, moisten each cotton ball with 15 drops of 15% KOH. Do not get KOH on the sides of the vial.
 4. Place a small wad of nonabsorbent cotton on top of the KOH-moistened cotton ball.
 5. In Vial #1 put 15 germinating beans.
 6. In Vial #2 put 15 dry, non-germinating beans.
 7. Place glass pipettes with attached stoppers *securely* on top of the vials.
 8. Add 2 washer weights to each pipette.
 9. Make a sling of masking tape attached to each side of the water bath to hold the pipettes out of the water during a 5 minute equilibration period. (See figure below)
 10. Record the temperature of the water bath, and continue to record and monitor the temperature of the water bath throughout the experiment.
 11. After the equilibration period, immerse both respirometers in the water bath. Water will enter the pipettes for a short distance and then stop.
 12. Let the respirometers equilibrate for another 3 minutes in the water and then record, to the nearest 0.01 mL, the initial position of the colored indicator drop in each pipette (time 0). [Let's all read the respirometers uniformly in the .90 to .80 to .70 etc. direction.]
 13. Every 5 minutes for the next 30 minutes, take readings of the position of the water in each pipette and record the data.

Figure 5.2: Respirometers Equilibrating in the Water Bath

