



LAB 5 AP BIO

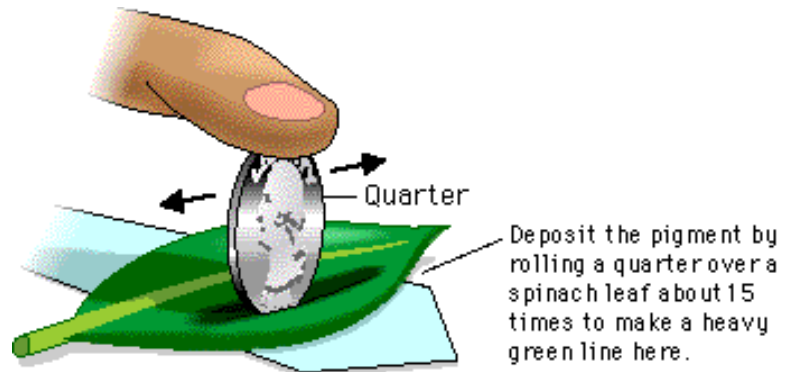
Inquiry into
Photosynthesis

Wednesday,
January 21st

Please be prepared to complete paper chromatography today! Please watch the following clip for bellwork today: [BOZEMAN](#) 2:34 min

Today I will:

1. **Separate** plant pigments using chromatography.
2. **Calculate** R_f values for various pigments.



In your groups you will:

1. Grab your necessary materials.

- ruler chromatography paper
- spinach (1) chromatography solvent
- coin/quarter glass jar parafilm
- dropper scissors

2. Complete the chromatography portion of this investigation, following the procedures I give you this morning.

3. Upon completion, please review the procedure required for Thursday's portion of this lab.

Introduction

Remember, use your **GOLD** packets, your lab manual and a scoring guide if need be to assist you in developing a sound pre-lab.

- Title: **Inquiry into Photosynthesis**
- Purpose: Why you are performing this lab in your own words.
Include the objectives included in the lab manual.
- Biology breakdown: Include background information that will be necessary to understand about photosynthesis.

Include the BALANCED equation for Ps.

- Hypothesis: “If...then...because...”

Use the information on pg. S64 to generate a hypothesis. ***We can brainstorm as a group.***



Materials & Methods

Equipment list: Include materials provided; pg. S64

Procedure: Include steps #1-9.

**Step 5 is lengthy. Use the following statement:

Draw the gases out of the spongy mesophyll tissue and infiltrate the leaves with sodium bicarbonate solution.

The following video is a great way to summarize the **FLOATING DISC METHOD** that we will be using.



Figure 6a. Creating a Vacuum in the Plunger



Figure 6b. Sinking Leaf Disks

Friday, January 30th

Please use today's class period to complete your lab report over photosynthesis.

We will discuss some "pointers" here shortly.

- **DUE DATE: THURSDAY, February 5th**
- Typed, as usual
- Follow the guidelines outlined in your GOLD packets.
- Scoring guides are available, so pick one up and attach it to your lab report when you turn it in!

Conclusion & Evaluation

Upon completion of the lab, please follow the requirements in your **GOLD** packet and on the scoring guide to draw conclusions and evaluate your experiment.

For now, please avoid pg. S68. We will discuss this portion of the lab manual as a collective group in the future.

There are **NO** post-lab questions with regard to this experiment.

Inquiry into Photosynthesis Lab

Please take out your photosynthesis lab manual.

Today I will:

- Connect the relationship between cell structure and function (chloroplasts).
- Understand how plants capture energy.
- Explain how gas exchange contributes to the overall rate of photosynthesis.

The following video is a great way to summarize the **FLOATING DISC METHOD** that we will be using.

How do I...

- **Prepare sodium bicarbonate solution?**

Mix **300 mL** distilled water + **1 tsp.** baking soda
- 1 person should do this at the back of the room

- **Prepare soap solution?**

Mix **5 mL** dish soap + **250 mL** distilled water
****THIS HAS ALREADY BEEN DONE FOR YOU!!!**

- **Create a vacuum using a syringe?**

Refer to page S66, Step 5d.

- **Time floating discs?**

When you place the cups under the light source today, begin timing. Record the number of discs that float each minute until ALL discs are floating in each cup. Use your phone timer.

**** A DATA TABLE is required.**