



Our Beautiful Stinky Friends

Digital Lab Notebook



How to Use the Digital Lab Notebook

This document is to be used during each experimental day. It is designed to be a living log of what you want to do, what you did, and what you learned from the day. It should be filled out as you work and/or immediately after the lab. The information you collect here will help you write each of the four sections of a lab report.

Materials and Methods

What exact materials will you use to conduct your experiment?

What steps made up your procedure? You can choose to adapt the Fermented Vegetable Recipe Example.

Initial Results

Describe your jar before the fermentation begins.

This can include descriptions of:

- The appearance and smells of the liquid and the vegetables.
- What the vegetables felt like when you were mixing them with the salt.
- Anything you noticed happened in the first few minutes of the vegetables reacting in the jar.

Describe your fermentation here.

Include a picture of the fermentation here.

Method #1: Bubble Counting - Results

Since the fermentation naturally produces gases, you can assume that bubbles mean microbial activity. It's going to be impossible to count every bubble, but you can use a marker to count gas production in a small area. Draw a circle 2 inches in diameter on the jar where you see bubbles collecting. Check in every day or two to count the bubbles in the circle.

Date	Bubbles
Add more rows if needed	

Method #2: Water Level - Results

As we saw in the videos of fermentations, the water levels within the jar will change. This is due to both the dehydrating powers of salt and the production of water as a byproduct in one of the chemical reactions occurring in the jar. You can measure the water levels by putting a thin rubber band at the water level. Check every day or two to see how the water has dropped or increased by using a ruler to measure the changes.

Date	Changes In Water Level
Add more rows if needed	

Method #3: pH Changes - Results

There are several key chemical reactions that are occurring within the jar. One of them produces lactic acid, which can alter the pH of the salt water. While the fermentation proceeds, the pH will decrease as the microbes perform the reactions. To record the pH, use a sterile toothpick or clean utensil to dip into the fermentation vessel and transfer one or two drops of the liquid to a pH strip. Follow the color guide provided by the manufacturer to identify the acidity of the ferment.

Date	pH
Add more rows if needed	

Why Does Fermentation Happen?

Callout Question Answer Sheet

1. What chemical forms the bubbles in your fermentation?

2. What chemical reaction is producing the bubbles?

3. How does the amount of anaerobic or aerobic respiration affect the taste of fermented food?

What Does Your Fermentation Taste Like?

Date	Flavor Notes <i>Salty, Sour, Sweet, Bitter, Umami</i>
Add more rows if needed	