



# Student Observation Sheet

## SOURDOUGH BREAD LESSON

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Team Name

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Sourdough Name

**DIRECTIONS:** During your sourdough unit, your team will be filling this out together. Make sure you record any changes that occur in your starter.

# Introduction

Welcome to sourdough baking! Over the next two weeks, your team will cultivate and grow a sourdough culture, which combines live yeast and bacteria.



## TOOLS AND EQUIPMENT

- container with a lid to store your sourdough starter
- small bowl to mix the starter with flour and water
- spoon
- scale to measure
- water
- whole wheat flour
- all-purpose flour

**IMPORTANT:** You will need to visit your starter each day, ideally in the morning. The first thing you will do is open the container and note what your sourdough looks and smells like on your Observation sheet. Day 1 is mixing flour and water to begin your starter. The following days (Days 2 to 10) will be either Stir Only days or Discard and Feed days. The directions for those days are below.

## Directions for Day 1

1. Place the bowl on the scale, then turn it on. Your scale should read 0g.
2. Add 75g of room-temperature water. Be as precise as possible (within 2g is OK). Then, “tare” your scale.
3. Add 57g of whole grain flour.
4. Mix vigorously until there is no dry flour. It should be a homogeneous mass that resembles wet concrete. (about 30 seconds)
5. Get a separate container with a lid. Place the flour and water mixture into your storage container, ensure there are no starter bits on the sides, and put the lid on.
6. Clean up.

## Feeding Instructions

1. Open the container, observe your starter, and make notes on your sheet.
2. Inspect your starter for mold, and gently scoop out any infected starter.
3. Place all of your starter in a clean bowl.
4. Vigorously stir your starter for about 30 seconds. Set aside.
5. Before returning your stirred starter to the storage container, thoroughly wash the container with warm water (no soap) and dry with a clean cloth or paper towel.
6. Gently spoon the starter back into a cleaned, dried storage container. You want to avoid having small bits or streaks of starter on the side of your container. Those small bits can mold very easily and ruin your starter.
7. Clean up.



## Discard and feed days

Your Timeline will tell you how much water and flour (and what kind of flour) to add on a specific day.

1. Open the container, observe your starter, and make notes on your sheet.
2. Stir your starter to break down any bubbles.
3. Take out the required amount of starter and put it in a clean bowl.
4. Add the water and flour to the bowl and mix well.
5. Before returning your fed starter to the storage container, empty the unused starter into the trash or compost (not the sink!), thoroughly wash the container with warm water (no soap), and dry with a clean cloth or paper towel.
6. Gently spoon the starter back into the clean, dried storage container. You want to avoid having small bits or streaks of starter on the side of your container. Those small bits can mold very easily and ruin your starter.
7. Clean up.

Your teacher will take care of storing your starters overnight.

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## To help with your Observations

Here are terms bakers often use to describe the smell of sourdough starter. Your starter may smell like: vinegar, buttermilk, yogurt, lemon, green apple, hay, pineapple, fishy, sour, sweat, yeast, mold. You may also observe other characteristics of fermentation byproducts such as ethanol alcohol (liquid) and Carbon Dioxide (gas).

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## Bringing your starter home

Once your starter is up and going, you'll need to store it and maintain it by storing starters in the refrigerator and feeding them weekly. Stick to a consistent feeding schedule, maintaining a 1:1:1 ratio (57g starter: 57g flour: 57g water) as used previously. When you are ready to bake, use Day 11 as a divide and feed day to give starters a chance to perk up. Use Tuesday to bulk up your starter and begin making your dough on Wednesday.



# Vocabulary



**BUILD OR BULKING** — is adding flour and water without discarding to increase the amount of starter so you have enough for a recipe, and some left over to keep for another time.

**DISCARD** — the portion of starter disposed of when feeding a starter as part of its routine maintenance. Use sourdough discard in pancakes, muffins, and other recipes as specified.

**FEEDING** — adding flour and water to a portion of the starter to maintain its balance of yeast and bacteria.

**FERMENTATION** — giving the dough time and space to rise for the first rise to develop flavor and texture.

**HOOCH** — the liquid that collects on the stop of your starter when it hasn't been fed in a while. This liquid is the alcohol given off as wild yeast ferments, and smells like it, too. Hooch doesn't mean your starter is bad, just that it's hungry and needs to be fed. The longer it has been since a feeding, the darker the hooch.

**HUNGRY** — starter that has fallen back to the original size in the container after a rise and is ready to be fed again.

**LACTOBACILLI/LACTIC ACID BACTERIA** — One of the most common probiotics found in the world, this bacterium works with the yeast in the starter to maintain an acidic pH and give sourdough bread that trademark sour flavor.

**MAINTENANCE** — the regimen used to sustain a sourdough starter for use in baking.

**NATURALLY LEAVENED** — a term for sourdough bread that uses no commercial yeast.

**PROOF** — the act of allowing the dough to rise in the final shape of the bread

**REGENERATIVE AGRICULTURE** — Farming practices that seek to improve and renew our natural resources, like soil and ecosystems. It's more than just keeping things the same; it's about healing the planet. This type of farming can help solve climate problems by using practices like planting cover crops, rotating crops, reducing chemicals, and limiting soil disturbance.

**RIPE** — starter that has been fed at room temperature and allowed to rise to its highest point or is just beginning to fall.

**SOURDOUGH STARTER** — a culture of wild yeast and bacteria that, when properly maintained, leavens and flavors sourdough bread.

**WHOLE GRAIN** — flour that uses all parts of the wheat berry (the germ, endosperm, and bran). This flour has a higher level of nutritional value and provides a better environment for yeast and bacteria to grow than white flour.

**YEAST** — Single cell living organism in the Fungus Kingdom that absorbs sugar and gives off CO<sub>2</sub> Gas and help the dough rise.



# Day 1

Date \_\_\_\_\_

Time \_\_\_\_\_

**Starter**

**N/A**

**Flour**

**57g**

Whole grain flour

**Water**

**75g**

**Observations (sight, stickiness, smell, color, viscosity, etc.)**

Carefully measure out your flour and water using a scale. Follow instructions on direction sheet for Day 1. Cleanliness is very important when beginning your starter, so make sure you don't get any starter on the sides of your storage container, and put the lid back on. Name and label your starter, making sure to include your entire team's names.

**What can you infer about the health of your starter?**

# Day 2

Date \_\_\_\_\_

Time \_\_\_\_\_

**Starter**

**0g**

**Flour**

**0g**

**Water**

**0g**

**Observations (sight, stickiness, smell, color, viscosity, etc.)**

Open your container, observe your starter, and write your observations. Check for any signs of mold. Today is a **stir only** day.

**What can you infer about the health of your starter?**

Team Name \_\_\_\_\_

Name of Starter \_\_\_\_\_

# Day 3

Date \_\_\_\_\_

Time \_\_\_\_\_

**Starter**

**0g**

**Flour**

**0g**

**Water**

**0g**

Open your containers, observe your starter, and write your observations. Check for any signs of mold. Today is a **stir only** day.

Observations (sight, stickiness, smell, color, viscosity, etc.)

What can you infer about the health of your starter?

# Day 4

Date \_\_\_\_\_

Time \_\_\_\_\_

**Starter**

**114g**

**Flour**

**57g**

Whole grain flour

**Water**

**57g**

Open your container, observe your starter, and write your observations. Check for any signs of mold. Today is the first **discard and feed** day, so follow all instructions carefully. Make sure your discard gets thrown away in the trash or compost, not down the drain.

Observations (sight, stickiness, smell, color, viscosity, etc.)

What can you infer about the health of your starter?

Team Name \_\_\_\_\_

Name of Starter \_\_\_\_\_

# Day 5

Date \_\_\_\_\_

Time \_\_\_\_\_

**Starter**

**57g**

**Flour**

**57g**

Whole grain flour

**Water**

**57g**

Open your container, observe your starter, and write your observations. Check for any signs of mold. Today is a **discard and feed** day. Note the different ratio of flour to water compared to yesterday.

Observations (sight, stickiness, smell, color, viscosity, etc.)

What can you infer about the health of your starter?

# Weekend

Store in refrigerator

# Day 6

Date \_\_\_\_\_

Time \_\_\_\_\_

**Starter**

**57g**

**Flour**

**29g**

Whole grain flour

**Water**

**57g**

**28g**

All-Purpose flour

Open your container, observe your starter, and write your observations. Check for any signs of mold. Today is **discard and feed** day. Note that we are using two different flours today.

Observations (sight, stickiness, smell, color, viscosity, etc.)

What can you infer about the health of your starter?

Team Name \_\_\_\_\_

Name of Starter \_\_\_\_\_

# Day 7

Date \_\_\_\_\_

Time \_\_\_\_\_

**Starter**

**57g**

**Flour**

**57g**

All-Purpose flour

**Water**

**57g**

Open your container, observe your starter, and write your observations. Check for any signs of mold. Today is **discard and feed** day. Note that we are now using only All Purpose flour.

Observations (sight, stickiness, smell, color, viscosity, etc.)

What can you infer about the health of your starter?

# Day 8

Date \_\_\_\_\_

Time \_\_\_\_\_

**Starter**

**57g**

**Flour**

**57g**

All-Purpose flour

**Water**

**57g**

Open your container, observe your starter, and write your observations. Check for any signs of mold. Today is a **discard and feed** day.

Observations (sight, stickiness, smell, color, viscosity, etc.)

What can you infer about the health of your starter?

Team Name \_\_\_\_\_

Name of Starter \_\_\_\_\_



# Day 9

Date \_\_\_\_\_

Time \_\_\_\_\_

**Starter**

**57g**

**Flour**

**57g**

All-Purpose flour

**Water**

**57g**

Open your container, observe your starter, and write your observations. Check for any signs of mold. Today is a **discard and feed** day.

My observations (sight, stickiness, smell, color, viscosity, etc.)

What can you infer about the health of your starter?

# Day 10

Date \_\_\_\_\_

Time \_\_\_\_\_

**Starter**

**57g**

**Flour**

**57g**

All-Purpose flour

**Water**

**57g**

Open your container, observe your starter, and write your observations. Check for any signs of mold. Today is a **discard and feed** day.

My observations (sight, stickiness, smell, color, viscosity, etc.)

What can you infer about the health of your starter?

# Weekend

Store in refrigerator and prep the starter to bake bread

Team Name \_\_\_\_\_

Name of Starter \_\_\_\_\_

# Day 11

Date \_\_\_\_\_

Time \_\_\_\_\_

**Starter**

**57g**

**Flour**

**57g**

All-Purpose flour

**Water**

**57g**

Open your container, observe your starter, and write your observations. Check for any signs of mold. Today is a **discard and feed** day. After you've finished and returned your starter to the designated area in your classroom, clean and disinfect your area.

My observations (sight, stickiness, smell, color, viscosity, etc.)

What can you infer about the health of your starter?

# Day 12

Date \_\_\_\_\_

Time \_\_\_\_\_

**Starter**

**114g**

**Flour**

**114g**

All-Purpose flour

**Water**

**114g**

Open your container, observe your starter, and write your observations. Check for signs of mold. Today is another **discard and feed** day, but you are keeping more of the starter so you can bulk, or increase the amount of starter so you have enough for your recipe. Note the larger amount of starter, water, and flour needed as compared to the previous days.

My observations (sight, stickiness, smell, color, viscosity, etc.)

What can you infer about the health of your starter?

Team Name \_\_\_\_\_

Name of Starter \_\_\_\_\_

# Day 13

Date \_\_\_\_\_

Time \_\_\_\_\_

**Starter**

**N/A**

**Flour**

**N/A**

**Water**

**N/A**

Open your container, observe your starter, and write your observations. Today is baking day, so remove what you need for your recipe and place in your mixing bowl. See your teacher's instructions for what to do with remaining starter.

**My observations (sight, stickiness, smell, color, viscosity, etc.)**

**What can you infer about the health of your starter?**

# Day 14

Date \_\_\_\_\_

Time \_\_\_\_\_

**Starter**

**N/A**

**Flour**

**N/A**

**Water**

**N/A**

Baking Day!

Follow the instructions in your recipe booklet to bake the delicious Rustic Sourdough Bread.

**My observations (sight, stickiness, smell, color, viscosity, etc.)**

**What can you infer about the health of your starter?**

Team Name \_\_\_\_\_

Name of Starter \_\_\_\_\_