

## STARTING FROM SCRATCH:

### FLOUR MILL OR PEANUT BUTTER DEMONSTRATION

**Objective:** Students will observe the ease of producing flour or peanut butter from local ingredients. They will then explore ingredients for the use of these base ingredients.

#### Option One: Whole Wheat Flour Milling

**Prep Time:** 1 hour

**Lesson Time:** 30 minutes

1. Check for food allergies prior to using a recipe.
2. Select and purchase the ingredients for a whole wheat flour recipe. (A recipe for Soda Bread is provided with this lesson. Read more about soda bread here: <http://www.breadexperience.com/irish-breads.html>). Adjust the recipe quantities based on the number of serving sizes and purchase the accurate number of ingredients. Ensure that most or all ingredients for the recipe were grown as locally as possible. Speak with your local Extension Office, especially the Family and Consumer Science Agent; they should be able to direct you to a local grain source.
3. Prepare all necessary ingredients and cooking utensils to bring to class.
4. Ensure that you have a method to display the recipe to students (projector and computer, chalkboard or whiteboard, or smart camera display system.)
5. Find an electric or manual flour mill to use for the lesson. See a how-to demonstration at this link: <http://www.breadexperience.com/grain-mill.html>
6. Read this article on the Types of Flour for Bread and be ready to discuss it with your students: <http://www.breadexperience.com/types-of-wheat.html>
7. Remember these tips when preparing the recipe and demonstration:
  - a. Only grind as much flour as you plan to use. Freshly ground whole grains get rancid very quickly.
  - b. Whole grain kernels will keep at room temperature indefinitely.
  - c. One cup of wheat grains produces approximately 1  $\frac{3}{4}$  cups flour.
  - d. One pound of wheat grains equals approximately 4  $\frac{1}{2}$  cups flour. (You will need approximately 1  $\frac{1}{2}$  pounds of grains to make the recipe provided for Soda Bread.)

#### Materials Needed:

- Plates, Napkins, and Eating Utensils for each student
- Butter for serving
- Measuring cups and spoons
- Knife
- Mixing spoon/ Spatula
- 2 Large Bowls
- Electric or Manual Flour Mill to grind flour
- Gloves for food prep
- Recipe Ingredients:
  - Grains for grinding flour
  - Buttermilk
  - Baking soda
  - Salt

**Opening Interest Approach for the Activity:**

1. Discuss the part of a wheat plant contains the grain that we eat (seed head).
2. Discuss the different types of wheat found in the US (reference link from above).
3. Ask students what is the difference between white and wheat breads. Tell them that we will be using the whole grain today to make a wheat bread (or list the recipe that you choose).

**Activity Outline:**

1. Show students the mill and grains. Tell them that only about ½-1 cup of grains should be poured in to the mill at one time. Begin milling the flour ½ cup at a time. Use one large bowl to collect the flour.
2. Allow volunteers to come forward and mills a ½ cup of grains.
3. Display the soda bread recipe for the students. Appoint several students to read components of the recipe out loud.
4. Share with students where you found or purchased the ingredients for the recipe. Don't be afraid to share if there were a few ingredients that you could not source locally. If you could not find all ingredients from a local, state, or national source, then explain why.
5. Demonstrate the measurement and mixing of ingredients. Make sure to ask for questions about each process of the recipe. Bake the bread and if there is not enough time, save it to sample in class the next day.
6. (Possibly the next day) Ensure that all students wash and dry their hands thoroughly. Provide samples of the recipe to each student.
7. Reflect on the taste of the recipe. Discuss with students the possibility of different ingredients. Ask for their suggestions. Encourage students to search for local recipes to make at home.

**Basic Brown Soda Bread Recipe**

Makes: 1 large loaf

Adapted from *The Best of Irish Breads and Baking* by Georgina Campbell.

**Ingredients:**

6 cups coarse wholemeal (whole-wheat) flour

4 teaspoons bread (baking) soda

2 teaspoons salt

2 cups buttermilk (approx.)

**Directions:**

Preheat a hot oven, 400°F/200°C/gas 6. Mix the dry ingredients in a mixing bowl. Stir in enough buttermilk to make a fairly soft dough.

Turn onto a work surface dusted with wholemeal (whole wheat) flour and knead lightly until smooth underneath. Form into a circle, about 1 1/2"/4 cm thick, and put onto a baking sheet. Mark a deep cross in the top with a floured knife.

Bake for about 45 minutes, until the bread is browned and sounds hollow when tapped on the base.

Cool on wire rack. You might want to wrap it in a clean tea/dish towel to keep the crust soft.

This bread tastes good warmed with butter.

**Option Two: Homemade Peanut Butter****Prep Time:** 1 hour**Lesson Time:** 30 minutes

1. Check for food allergies prior to using a recipe. If nut allergies are present in the classroom, do not complete this lab.
2. Review this blog post on making homemade peanut butter: <http://www.thekitchn.com/how-to-make-homemade-peanut-butter-cooking-lessons-from-the-kitchn-199110>
3. Select and purchase the ingredients for the peanut butter recipe in this lesson. Peanuts can be purchased raw from local farmers in the shell. Adjust the recipe quantities based on the number of serving sizes and purchase the accurate number of ingredients. Ensure that most or all ingredients for the recipe were grown as locally as possible.
4. Prepare all necessary ingredients and cooking utensils to bring to class.
5. Ensure that you have a method to display the recipe to students (projector and computer, chalkboard or whiteboard, or smart camera display system.)

**Materials Needed:**

- Plates, Napkins, and Eating Utensils for each student
- Bread or Fruit for sampling the peanut butter
- Measuring cups and spoons
- Mixing spoon/ Spatula
- Large Bowl
- Roasting Pan for Peanuts (optional)
- Food Processor or Blender
- Container with a lid for peanut butter storage
- Gloves for food prep
- Recipe Ingredients:
  - Raw, shelled peanut
  - Salt
  - Peanut Oil (optional)
  - Honey (optional)

**Opening Interest Approach for the Activity:**

1. Ask students if anyone has ever made homemade peanut butter. Ask them their preferences for smooth or crunch peanut butter.
2. Explain that homemade peanut butter is very easy and can be done by anyone with a blender or food processor.

**Activity Outline:**

1. Toasting the peanuts: This is optional and can be done before this lesson or during the lesson. If you have peanuts in the shell, give students this opportunity to shell the nuts.
2. Display the peanut butter recipe for the students. Appoint several students to read components of the recipe out loud.
3. Share with students where you found or purchased the ingredients for the recipe. Don't be afraid to share if there were a few ingredients that you could not source locally. If you could not find all ingredients from a local, state, or national source, then explain why.
4. Ask volunteers to help process the peanuts.
5. Ensure that all students wash and dry their hands thoroughly. Provide samples of the recipe to each student with bread or fruit slices.
6. Reflect on the taste of the recipe. Discuss with students the possibility of different ingredients. Ask for their suggestions. Encourage students to search for local recipes to make at home.

### Recipe for Homemade Peanut Butter

Adapted from <http://www.thekitchn.com/how-to-make-homemade-peanut-butter-cooking-lessons-from-the-kitchn-199110>

*Makes about 1 1/2 cups*

#### **Ingredients**

2 cups (16 ounces) raw, shelled peanuts (See Recipe Notes)

1/2 teaspoon kosher salt, plus more to taste

1-2 tablespoons peanut oil or other oil (optional, for creamier peanut butter)

1-2 tablespoons honey or other sweetener (optional, for sweeter peanut butter)

Optional Add-Ins: 1-2 tablespoons cocoa powder, 1/2 teaspoon cinnamon or other spice, handful of chocolate chips, a few spoonfuls of nutella

#### **Equipment**

Baking sheet

Spatula

Food processor or blender

Container with lid

#### **Instructions**

1. **Roast the peanuts (optional):** Heat the oven to 350°F and toast the peanuts on a baking sheet until lightly golden and glossy with oil, about 10 minutes. You can skip this step if you prefer raw nut butter or if you're using pre-toasted nuts; roasting gives the peanut butter a deeper flavor and also helps make the oils looser and easier to blend into a smooth butter.
2. **Pulse the peanuts until ground:** Transfer the peanuts to a food processor or blender. If you toasted your nuts, do this while the nuts are still warm. Pulse a few times just until chopped. → *For chunky peanut butter, remove 1/2 cup of chopped nuts and set aside.*
3. **Process for 1 minute:** Run the food processor or blender continuously for 1 minute. Stop and scrape down the sides and bottom of the bowl. At this point, the peanut butter will look gritty and dry, almost like couscous.
4. **Process for 1 minute:** Run the food processor or blender continuously for another minute, then stop and scrape down the sides. At this point, the butter will start clumping together. It's not *quite* peanut butter, but it's getting there!
5. **Process for 1 minute:** Run the food processor or blender continuously for another minute, then stop and scrape down the sides. At this point, the butter will be glossy and soft, like very thick peanut butter.
6. **Add the salt, oil, sweetener, and any other extras:** Sprinkle the salt, oil, sweetener, and any other extras over the top of the peanut butter.
7. **Process for 1 to 2 additional minutes:** Continue processing the butter until it becomes completely smooth. Homemade peanut butter will still be a little more gritty than Skippy peanut butter, but should be spreadable at this point. Taste and add more salt or other add-ins to taste. *If you reserved some nuts for chunky peanut butter add them now and pulse a few times to incorporate.*
8. **Transfer the peanut butter to storage container:** Scrape the peanut butter into a storage container, cover, and refrigerate. The peanut butter can be used immediately and will keep for several weeks in the fridge.

#### **Recipe Notes**

- **Using Toasted Nuts:** You can also use nuts that come pre-roasted from the store. I still like to give even pre-toasted nuts a quick trip through the oven to warm them up and help the oils loosen up.
- **Making More or Less Peanut Butter:** You can use this technique with any amount of nuts. I find that I typically end up with about a half-cup less peanut butter than the amount of nuts I originally started with (for instance, 2 cups of peanuts makes about 1 1/2 cups of peanut butter).