



## BREAD - LESSON & ADAPTATIONS FOR K-12

<b>Lesson adapted from lesson by Chandra Garcia-Kitch, Paul Kahan, and Greg Wade</b>	
<b>INTEGRATED SUBJECT(S):</b> English Language Arts, Math, Science, History/Social Studies	
<b>MAIN IDEA/TOPIC:</b>	
Food can help students better understand the similarities and commonalities between different cultures that settled in Chicago area after the Great Chicago Fire (or in other city if applicable).	
By comparing and contrasting types of flours and/or breads, students can better understand how to compare and contrast topics within a unit of study.	
<b>FOOD OBJECTIVES + CURRICULAR CONNECTION</b>	
Students will better understand how to compare and contrast (two or more items in a unit of study) by comparing and contrasting different grains used around the world and then use this information to select grains to make a loaf of bread.	
<b>ACADEMIC STANDARD(S)/SKILLS</b> <i>Potential Curricular Connections:</i>	<b>PILOT LIGHT FOOD STANDARD(S)</b>
<p><b>Common Core English Language Arts:</b>            Grades K-12 Informational Text: Key Ideas and Details (Standards 1-3)            Grades K-12 Speaking and Listening: Comprehension and Collaboration (Standard 1)            Grades K-12 Writing: Research to Build and Present Knowledge (Standard 7,8)</p> <p><b>Common Core Math:</b>            Grades K-5 Measurement and Data            Grades 6-8 Ratios &amp; Proportions, Geometry            Grades 9-12 Modeling, Geometry</p>	<p>PLFS 1: Food connects us to each other.</p> <p>PLFS 2: Foods have sources and origins.</p> <p>PLFS 4: Food behaviors are influenced by external and internal factors.</p> <p>PLFS 5: Food impacts health.</p> <p>PLFS 6: We can make positive and informed food choices.</p> <p>PLFS 7: We can advocate for food choices and changes that impact ourselves, our communities and our world.</p>
<b>RELEVANT VOCABULARY</b>	
gram, gluten, grain, mill, dough, rise, knead, proof, meal, leavened/ unleavened, berry (wheat), loaf	



## CLASSROOM/CURRICULUM ACTIVITIES THAT CONNECT TO THE FOOD EXPERIENCE

*How the food experience connect to the curriculum: Building questions, developing knowledge, extensions, connections*

**\*grade band are only suggestions- activities can be modified to fit multiple grade levels**

### Grades K-2:

- Practice using measuring and using scales to measure different types of materials
- Work with a group to categorize breads by their shape, color, size, etc.
- Descriptive Writing, adjectives; Read Bread, Bread, Bread
- Read Knead It, Punch It, Bake It and discuss verbs

### Grades 3-5:

- Comparing Instant active yeast and wild caught yeast cultures over time. Students sustain both colonies and make observations over a number of days.
- Students can “mill” their own grains using dried corn, oats or wheat berries.
- Practice using scales to measure different types of materials and to measure using the tare function.
- Select a country of interest, and research the grains grown and breads traditionally made to add to the class map of foods.
- Work with a group to categorize different types of breads - sweet breads, crackers, leavened/ unleavened, etc.
- Students write recipes for different types of spreads (herbed butters, herbed cheeses, honey spreads, jams, etc) to use on the bread they made. This can be related to a country they are studying, a neighborhood they are researching, a science lesson on plants (grow the herbs, life cycle of a honeybee), a math lesson on fractions, a science lesson about how materials change as a reaction to temperature (making jam or churning butter from cream).
- Descriptive Writing, adjectives; Read Bread, Bread, Bread

### Grades 6-8:

- Research the history of milling and have students design a working mill to grind their grains into flour. This can be design stage only or you can provide materials from them to create a “working” mill (rolling pins, cleaned bricks/pavers, pendulum set-ups using K’nex type materials and simple electromagnets)
- Have a class discussion about the definition of bread, developing a class definition and then add a challenge group. For instance, is cake a bread? Have students record their thinking in groups, creating a persuasive piece of writing for their stance.

### Grades 9-12:

- Comparing & Contrasting: Compare & Contrast different grains or nutritional values of different breads to practice comparing & contrasting in a unit of study in English Language Arts or Science
- Chemical Changes: Making spreads like jam or butter to put on bread (Chemistry)
- Role of bread in various cultures throughout history: e.g. Neolithic Revolution, comparison of leavened & unleavened bread (Indian chapatis, Mexican tortillas), influence of French colonialism in Banh Mi (Social Studies/History)



## RELATED BACKGROUND KNOWLEDGE ON FOOD

- There is some great information on this website:  
<https://www.dovesfarm.co.uk/hints-tips/bread-making/the-history-of-bread>
- Information about the role of fermentation and commercial production:  
<http://www.motherjones.com/environment/2015/02/bread-gluten-rising-yeast-health-problem/>
- Types of yeast and their uses:  
<http://www.virtuousbread.com/bread-and-conversation/the-four-different-forms-of-yeast-and-how-to-use-them/>
- History of the domestication of grains:  
<https://briloewen.wordpress.com/2012/12/07/wheat-a-story-of-domestication-and-immigration/>
- To measure flour for baking, add air to the flour in the larger container by stirring it a bit. Use a scoop to fill the measuring cup. When the measuring cup is full, tap the side carefully to eliminate large air pockets and then use a flat edge tool (back of a butter knife works well) to level off the flour.
- Grain to Flour - in-depth information:  
<https://nebraskawheat.com/wp-content/uploads/2014/01/WheatFromFieldToFlour.pdf>
- Grain to Flour - short form: <https://www.youtube.com/watch?v=3wyhzKX97Vk>

## ANCHOR TEXTS

### Grades K-3

- **Everyone Bakes Bread** by Norah Dooley
  - Students can locate and map countries from book.
  - Write personal narratives about bread they eat at home and how they get it (homemade, store bought, etc.)
- **Bread, Bread, Bread** by Ann Morris
  - Students can identify commonalities between the different types of breads.
  - Book is an easy for introducing adjectives and can be used to introduce students to how to write more descriptively.
  - Easy text (first grade level text) is accessible for ELL and DL students.

### Grades 3-12

- **An A to Z of Breads from Around the World:**  
<https://www.bhf.org.uk/heart-matters-magazine/nutrition/cooking-skills/dough/a-to-z-of-breads>
  - Students can map locations and identify grains used in those countries of origin.



## FOOD EXPERIENCE

### *Step by step instructions for the food experience.*

1. Students will examine ingredients for different breads and record their observations on the record sheet (attached under Instructional materials). Grains to be used are listed below.
2. Bread Presentation :  
[https://docs.google.com/presentation/d/1YaGVApMEgiDjHC\\_R\\_zRfygcHpgQsjNIdAa2rrtSRNPY/edit#slide=id.p](https://docs.google.com/presentation/d/1YaGVApMEgiDjHC_R_zRfygcHpgQsjNIdAa2rrtSRNPY/edit#slide=id.p)
3. Using the information from their observations, students will create a bread dough recipe using at least one grain plus bread flour.
4. Students will make small loaves of bread. Students will work in groups of 6 to make the dough using the grains they selected as a group and the the recipe below.
5. They will watch and record the changes to the dough throughout the day. Dough should be checked every hour for change in appearance and smell.
6. The dough can go home to be cooked with instructions.

## MATERIALS NEEDED FOR THE FOOD EXPERIENCE

*This should include food, equipment, and instructional materials.*

### **Equipment:**

- Food scale
- Bread pans - disposable pans
- Kettle
- Bowls, measuring cups, measuring spoons and pastry brush can normally be sourced from the closest dollar store.

### **List of Possible Ingredients**

Grains and Flours can all be sourced from

- Bob's Red Mill: <http://www.bobsredmill.com/shop.html>
- OR King Arthur Flours: <http://www.kingarthurfLOUR.com/> (will sometimes include small sample packets for students if you call in your order and explain you are a school)

Select 6 - 8 different grains

Spelt

Rye

Rolled Oats

Barley

Millet

Corn Meal

Buckwheat

Teff

Bread Flour

salt

yeast

water (will need to be heated)

### **Instructional Materials:**

Copy of recipe for class (Below)

Copy of the Grain Observation Page:

<https://docs.google.com/document/d/107nHYMhubRMa0potvLIHwiZHcjdlL2V9YQvW0pFoLtk/edit>



### IDEAS FOR FOOD ADVOCACY

- Have students analyze the types of bread available at the nearest grocery store and compare it to neighborhood socioeconomic data. Are all groups represented? Write letters asking for more variety if there are limited options. **PLFS 1, 3 and 4**
- Research the ingredient High Fructose Corn Syrup or Enriched Flour. Have students create pamphlets/informational posters about the ingredient and why it is in mass-produced bread. Use this information to create persuasive writings to bakeries/ stores/ schools about using or not using the ingredient, addressing both positive and negative opinions. **PLFS 8 and 9**

### COMMUNITY CONNECTIONS

- Request a field trip to a local bakery. Try the one at your neighborhood grocery store, a larger factory or a regional baker.
- Visit the Old Graue Mill. Information can be found here: [www.grauemill.org](http://www.grauemill.org)

### RECIPE OR TAKE-HOME ACTIVITY

#### No-Knead Bread Base

Created by Chef Greg Wade, Publican Quality Bread

375g bread flour  
125g whole grain flour  
375g water  
10g salt  
3g dry yeast  
1 egg, lightly whisked (egg wash)

#### Method:

Scale flours, salt and dry yeast together in a medium size mixing bowl. Pour warm (80 degree) water over dry ingredients, mix by hand until fully incorporated. cover and let rise for 15 hours at room temp (72F).

After 15 hours gently dump the dough onto a cleaned surface or medium sized cutting board. Using either non-stick spray or butter, lightly grease the bread pans. Gently shape the dough into a log shape and place into the bread pan with the top or smooth side up.

Allow the bread to proof covered in a 75F area for 1.5 hours or until the dough holds the imprint of your finger and does not bounce back. After 1 hour of proofing make sure to preheat your oven to 425F.

Once the bread is ready to bake, use a pastry brush and brush with egg wash on the surface. Place bread pan onto a baking sheet and then directly into the oven. This will make it easier to remove the loaf of bread from the oven.

The loaf of bread should be done after 25 minutes of baking but make sure to check using a thermometer or wood toothpick. The internal temperature should be between 195F-200F or if using a wood toothpick it should come out clean with no raw dough on it. A finished loaf of bread will also sound hollow when tapped.

