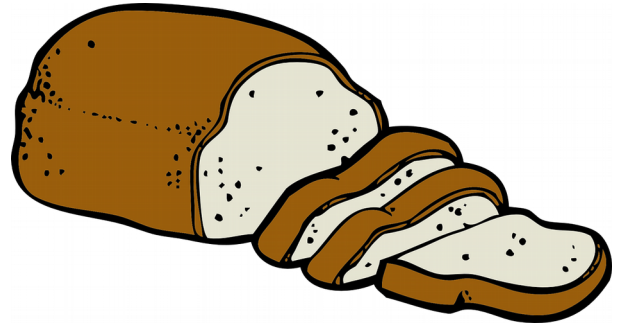


From Wheat to Bread

A lesson from the New Jersey Agricultural Society's Learning Through Gardening Program

Overview: How many of your students really understand that all the things that they eat made from flour – bread, pizza dough, cake, cookies, crackers, rolls – actually come from a plant? In this lesson, students will actually see wheat grow and learn the process of turning wheat seeds into bread.



Grades: PreK-3, can be modified for older students

Objectives: The student will be able to:

- Identify wheat as the plant that is the source of much of the flour we eat.
- Identify food that is made from wheat flour.
- Describe the process of turning wheat seeds into flour.

Materials:

wheat seeds

potting soil

container for planting seeds

Bread Comes to Life, A Garden of Wheat and a Loaf to Eat by George Levenson OR

The Little Red Hen by Jerry Pinkney or Paul Galdone OR

The Little Red Hen (Makes a Pizza) by Philomen Sturges

Introduction:

Ask your students to brainstorm a list of food they eat that is made from flour. Ask students if they know where this flour comes from. Read one of the books listed in the Materials section on the growing and harvesting of wheat and processing it into flour. Show students the wheat seeds and tell them that this is what flour – and all the flour products they eat – is made of.

Procedure:

Depending on how many wheat seeds you have, demonstrate the seed planting to the whole class or place students in small groups. Fill any container – milk or yogurt carton, berry container, plant pot, etc. – with potting soil. Make sure the container has drainage holes in the bottom. Sprinkle wheat seeds liberally on top of soil. Cover seeds lightly with soil. Moisten the soil – a spray bottle is easy to use.

Place the container in a sunny area, and check the moisture level of the soil frequently so the seeds don't dry out. Water lightly when needed. The seeds should germinate in two to three days, and sprouts should be visible within a week. Allow your students to observe the growth of the wheat seeds for at least a month. They can record their observations in science journals.

The young wheatgrass sprouts can be used to make smoothies. Wheatgrass can be bitter, however, so if you want your students to try it, be sure to combine it with something sweet. Here is a sample recipe:

*2 cups of wheatgrass. Plain wheatgrass chops up pretty well in a blender.
1 cup of your favorite fruit; frozen, or if raw fruit is used - include 1 cup of ice
1 carrot
1 Tbs. lemon juice
Tbs. agave or other sweetener
Add up to 1/2 cup cold water to adjust consistency.*

Notes: Apple and carrot go great with wheatgrass! If using raw apples, use 2 cups raw apples plus one cup apple or other fruit juice.

Evaluation:

The student can answer the question, "Where does your bread come from?" and describe the process of growing, harvesting, threshing, and grinding wheat to turn it into flour.

Bread in a Bag Recipe

Ingredients and Materials for each loaf

½ cup all purpose flour	plastic wrap
2 cups whole wheat flour	cooking oil spray
warm water	heavy duty ziplock bags
2 tablespoons sugar	food handling gloves
1 package yeast (2 ¼ teaspoons) Quick-rise yeast will speed the process	various measuring cups and spoons
2 teaspoons salt	cookie sheets
one tablespoon vegetable oil	

Directions

In a one-gallon heavy-duty ziplock bag, mix:

- ½ cup all purpose flour
- 1 package or 2 ¼ teaspoons yeast
- ½ cup warm water
- 2 tablespoons sugar.

Close the bag and knead it with fingers until the ingredients are completely blended. Leave the bag closed, with the contents in the corner, and let rest 10 minutes. You can eliminate this wait by using instant yeast. Then add:

- 2 cups whole wheat flour
- ¾ cup warm water
- 1 tablespoon vegetable oil
- 2 teaspoons salt

Mix well. Add enough all-purpose flour to make a stiff dough, about 1 or 1 ½ cups. Close the bag and knead it (You may need to remove some air from the bag.) Add more flour until dough no longer sticks to the bag.

Spray the students' hands or food handlers gloves with oil so there will be no sticking. Open the bag and allow the dough to fall out onto clean or gloved hands. Form the dough in to a loaf, and place onto cookie sheet. Cover the loaves with sprayed plastic wrap and allow to rise 30 (quick-rise yeast) to 45 minutes.

Bake for 30-35 minutes in a 350 degree oven.

