

# Tortilla in a Bag

## Objective

Students will conduct scientific experiments with leavening agents and make tortillas in a bag.

## Background

Bread can be unleavened or leavened with yeast. When flour comes in contact with water and remains idle for a period of time, it begins to rise. In modern processes, yeast is added to aid in the rising, but even without yeast, dough will begin to ferment, and the resulting gases will cause the dough to rise. The Egyptians were the first to discover that this process would produce a light, expanded loaf. The Egyptians also invented a closed oven in which to bake the bread.

## Procedures

1. Discuss what makes flat (unleavened) breads different from leavened breads. Experiment with leavening, as follows.
  - Mix one batch of dough using water, flour and yeast and another batch using flour and water only.
  - Students will hypothesize what will happen with each batch, then observe them over several hours and record their observations.
2. Make Tortillas in a Bag (See recipe on Student Worksheet B).
3. The tortilla recipe included with this lesson calls for baking powder, which provides a small amount of leavening. Assign some of your students to make the tortillas with leavening and some to make them without.
  - Students will compare texture, flavor, appearance, etc.
4. Substitute whole wheat flour for white flour in the tortilla recipe.
  - Students will compare flavor, texture, appearance, etc.

## Extra Reading

- Anaya, Rudolfo, Amy Cordova and Enrique R. Lamadrid, *The First Tortilla: A Bilingual Story (English and Spanish Edition)*, University of New Mexico, 2007.
- Chavarría-Chairez, Becky, Julia Mercedes Castilla, and Anne Vega, *Magda's Tortillas / Las Tortillas de Magda*, Children's, 2000.
- Cowley, Joy, *Big Moon Tortilla*, Boyds Mills Press, 2002
- Hayes, Joe, and Antonio Castro Lopez, *The Day it Snowed Tortillas / El Día Que Nevaron Tortillas: Folktales told in Spanish and English*, Cinco Puntos, 2003.
- Paulsen, Gary, *The Tortilla Factory*, Harcourt, Brace, 1995.

## Oklahoma Academic Standards

### GRADE 5

Physical Science: 1-4.  
Life Science: 2-1

### GRADE 6

Physical Science: 1-4.  
Life Science: 1-1,3,6

### GRADE 7

Physical Science: 1-2

### GRADE 8

Physical Science: 1-3.4.  
Life Science: 1-7

## Materials

ingredients for tortillas  
(See recipe—storage bags, flour, baking powder, shortening, hot tap water, salt).

# Tortillas in a Bag

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## Ingredients (for four tortillas)

1-qt storage bag  
1 1/2 c flour  
1 t baking powder  
3 T shortening  
1/2 c hot tap water  
1/4 t salt (or to taste)

1. Place flour, salt and baking powder in bag. Close and shake just a few shakes to mix.
2. Add shortening and reclose the bag. Work bag with hands until the mixture looks crumbly and there are no large pieces of shortening visible.
3. Open the bag, and add the hot tap water. Knead in the bag until the dough is one large piece and the sides of the bag come clean.
4. Take the dough out of the bag, and divide into four pieces. Put the pieces of dough on the table, and lay the bag on top of them. Let the dough rest for 15 minutes.
5. After resting time, roll or pat the dough into eight- to 10-inch circles. If dough is too sticky you may add a little more flour. Place the circles on a griddle or frying pan heated to medium or medium high, and cook until dark brown spots appear. Turn and cook on the other side until brown.
6. Fill tortillas with ground beef, beans, salsa, cheese and lettuce to make burritos, if desired, or spread with butter or peanut butter.