



# Baking Food Safety Lesson

For Home, Classrooms, Community or Out-of-School Programs  
Prepared by Sharon Davis, Family & Consumer Sciences Education, HomeBaking.org

## Computer Lab

1. Explore baking food safety sites.
2. Create a One-Page Map of food safety resources with words, titles, links, drawings, or images.
3. Share with group, family.

## Baking Food Storage

Guide to storing ingredients, batter, dough, and baked goods.  
<https://www.foodsafety.gov/keep/types/index.html>

## Home Baking Association

Baking Food Safety 101 checklist and chart; Quality Baking Temperatures, videos  
<https://www.homebaking.org/wp-content/uploads/2019/07/bakingfoodsafety101-1.pdf>

## Safe Recipe Style Guide and Student Activities

Re-write recipes with food safety in mind.  
<https://www.saferecipeguide.org/>

## North American Millers' Association

View How Flour is Milled and Flour Food Safety videos.  
<https://namamillers.org/consumer-resources/>

## Partnership for Food Safety Education

Learn what food-borne illness is, how it happens, and how to prevent it. [www.FightBac.org](http://www.FightBac.org)

## FDA Food Recalls, Safety Alerts

<https://www.fda.gov/safety/recalls-market-withdrawals-safety-alerts>

## Leader Objectives: Guide participants to

- Define recipe's raw ingredients
- Identify risks if raw ingredients/batter eaten
- List best baking food safety practices (Checklist)
- View *Quality Baking Temperatures*, <https://www.homebaking.org/baking-food-safety/>
- Insert food safety steps in the Mug Muffin recipe.
- Identify on temperature chart the target internal mug muffin doneness temperature
- Cool, handle and eat or package baked goods away from raw flour, eggs, batter or dough

## Lesson Steps: Focus on baking food safety.

### Step 1. View *Did You Know* flour safety video.

**Critical Thinking Q:** Grain is cleaned thoroughly on the farm, and in the mill. What's the difference between raw, clean, and baked? (A: Clean is still raw and can carry harmful bacteria. Temperatures that kill bacteria aren't yet reached until flour is fully baked.)

### Step 2. Read the Blueberry Mug Muffin recipe.

Serves 2.

Source: [landolakes.com/recipe/](http://landolakes.com/recipe/)

#### Ingredients

- 2 Tablespoons (1 oz/28g) butter
- ¼ cup (1 oz/28g) all-purpose flour (may be half whole wheat flour)
- 2 Tablespoons (0.8 oz/24g) brown sugar
- ½ teaspoon *each* baking powder and ground cinnamon
- ¼ teaspoon ground nutmeg
- 1 large egg yolk (1/2 oz/14g) – discard white
- 1 Tablespoon (0.5 oz/14g) milk
- 1 teaspoon vanilla
- 1 Tablespoon blueberries (fresh, frozen or dried)

#### Instructions

- 1: In small bowl or cup use fork to blend dry ingredients. Place butter into large (12 oz. or larger) coffee mug. Microwave until butter is melted, about 30 seconds. Add blended dry ingredients, yolk, milk and vanilla. Mix well with fork. Add blueberries, stirring just until distributed.
- 2: Microwave 60-90 seconds or until muffin pulls away from sides and top is dry. Take temperature at center (Temperature will rise at least 5° F. as it stands.) Use chart to determine target internal temperature. Do not over cook. Cool slightly.
- 3: Optional: Drizzle with 2 Tablespoons powdered sugar mixed with ½ teaspoon lemon juice or water. Serves 1-2. Nutrients: One serving, 570 calories, 28mg fat, 245 mg cholesterol, 460 mg sodium, 71g carbohydrates, 2 g dietary fiber, 7 g protein

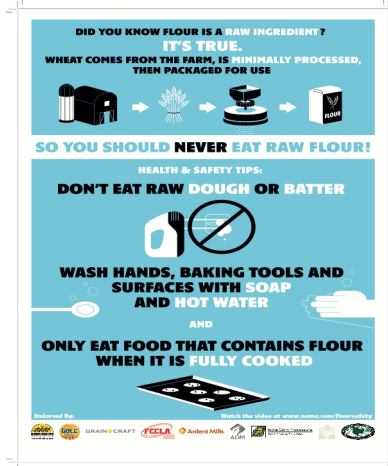
**Step 3. Prepare Mug Muffin recipe.** Have bakers prepare Blueberry Mug Muffin. **Critical Thinking Q:** What food safety steps did you use? (A: 1) At start: wash hands, counters; again after mixing and before handling or eating muffin (2) returned eggs, flour or other perishable ingredients to storage; (3) tested for doneness at center (photo right)- Is 203°F at center done and food safe? (See Chart on Baking Food Safety 101)

**Family & Consumer Sciences Competencies**, 2018, 3.0. <http://www.leadfcsed.org/national-standards.html>  
**Consumer and Family Resources**, 2.1.3 –Analyze decisions made for providing safe and nutritious foods for individuals and families.

**Family and Human Services**, 7.4.1—Investigate health, wellness, and safety issues of individual and families  
**Food Production and Services**, 8.2 –Demonstrate food safety and sanitation procedures.

**Nutrition and Wellness**, 14.4—Evaluate factors that affect food safety from production to consumption.

View *Did You Know* Video  
Wheat Flour Food Safety  
<https://namamillers.org/consumer-resources/>



## Lesson Supply list:

- Sink, aprons, hair ties
- Microwave oven(s)
- Microwaveable straight-sided 14 oz mugs\*-One per team or recipe
- Mug Muffin Ingredients for each lab team
- Food thermometers
- Toothpicks
- Fork for stirring
- Spoons (for sampling)
- Napkins
- Copy *Baking Food Safety 101* one per person; pencil or pen

\*Control mug size and shape or compare variable size results.

## Chillicothe, Missouri High School



Baking student "temps" mug muffin at 203°F.  
<https://www.thermoworks.com/home-baking-association>