

Good Eats: Egg Files 5

About *Good Eats*

Good Eats explores the origins of ingredients, decodes culinary customs, demonstrates recipes, and reminds students about safe cooking tips. Students will learn about shopping, chopping and preparing food, in its finest and most entertaining form.

About This Episode

The word "soufflé" has instilled fear in cooks for ages. In this episode, Host Alton Brown believes a strong dose of science is all that's needed to get control of egg foam. Students will learn the ins and outs of the cheese soufflé, and how to manage the heat in the oven.

Vocabulary

Assemble
Coagulate
Cuisine
Culinary
Gelatinize
Molecular
Roux
Soufflé'
Temper
Whisk

Discussion Questions

1. There are many different types of soufflés with a variety of flavors. Ask students if they have ever eaten a soufflé and, if so, to describe its texture, appearance and taste to the rest of the class. Do students think soufflés would be easy or difficult to make, and why?
2. In this episode, students will learn the science behind the egg. Ask students to share what they already know about the science of an egg. What might they expect to learn in this episode?

Extended Activities

International Flavor (Language Arts, Technology, Social Studies, Consumer Science)

According to the food historians, modern soufflés were a product of 18th century French cuisine. "Soufflé" is a French word that literally means "puffed up." Many of our favorite foods originate from other countries and their names often have a particular meaning associated with a place, person or group; a cooking technique; or a key ingredient. Have students create a list of foods. Their list could comprise favorite foods, foods they've eaten in the last 24 hours, foods with unusual names, breakfast foods or another category. Each list should include at least 10 foods. Then have student teams use the Internet, library or other sources to find the country of origin (1 point) or the meaning behind the food's name (1 point). The first group to reach 20 points wins. **Extension:** Challenge student groups to design an international menu, with foods originated from other countries for breakfast, lunch and dinner.

The Science of Cooking (Science, Consumer Science)

In the episode, students learn many tips for creating the "perfect whipped egg white," including:

- When an egg white is beaten, air bubbles become trapped and it becomes foamy, increases 6 to 8 times in volume and stands in peaks.

- When the foam is heated, the tiny air cells expand and the egg protein coagulates around them, giving permanence to the foam.
- Egg whites reach their greatest volume if allowed to stand at room temperature for about 30 minutes before beating.
- Fat inhibits the foaming of egg whites, so there can be no trace of yolk in the whites.
- Metal or glass bowls should be used instead of plastic because plastic bowls tend to absorb fat.
- Under-beaten egg whites lack the appropriate volume while over-beaten whites form clumps which are difficult to blend with other ingredients.
- The addition of an acid ingredient such as cream of tartar, lemon juice or vinegar helps to stabilize the foam.

List on the board these and other “egg beating” facts students learn from the episode. Divide students into groups and give each group a carton of eggs, a small bowl and a whisk. Have each group design an experiment to help them learn or prove something about beating egg whites. Students should create a hypothesis, limit their experiment to one variable, draw conclusions about what they’ve learned and share one scientific principle that their experiment supports. Extend the lesson by creating the “perfect whipped egg white” competition based on the results of student experiments!

Fresh Eggs: (Nutrition, Health, Science)

One of the proverbs from the episode says, “Love and eggs are best when served fresh.” Ask students what they think this quote means. What would make an egg fresh? Ask students if they have ever observed their parents purchasing eggs at a supermarket. What criteria do their parents typically use to make this purchase: size, grade, type, nutrition facts label, quality? How long do eggs typically stay “good” from the time they are purchased? Tell students to imagine that they have been asked by their local supermarket to create a point of purchase sticker or sign that helps consumers know what to look for when purchasing eggs. Their sticker or sign should include information about differences in egg size, grade and quality; nutrition facts; United States Department of Agriculture (USDA) requirements, and buying, storing and safe handling tips. For more information, students can go to the United States Department of Agriculture at www.usda.gov or the American Egg Board at www.aeb.org.