

# Cookies and Bars

**Unit:** Culinary Arts & Hospitality

**Problem Area:** Desserts

**Lesson:** Cookies and Bars

- **Student Learning Objectives.** Instruction in this lesson should result in students achieving the following objectives:

- 1 Describe cookie characteristics and summarize cookie preparation methods.**
- 2 Summarize the various types of cookies and principles for baking and cooling cookies.**

- **Resources.** The following resources may be useful in teaching this lesson:

E-unit(s) corresponding to this lesson plan. CAERT, Inc. <http://www.mycart.com>.

“Cookie-Baking Chemistry: How to Engineer Your Perfect Sweet Treat,” *The Salt*. Accessed Nov. 28, 2019. <http://www.npr.org/sections/thesalt/2013/12/03/248347009/cookie-baking-chemistry-how-to-engineer-your-perfect-sweet-treat>.

Labensky, Sarah R. and Alan M. Hause. *On Baking: A Textbook of Baking and Pastry Fundamentals*, 4<sup>th</sup> ed. Pearson, 2006.

Labensky, Sarah R. and Alan M. Hause. *On Cooking: A Textbook of Culinary Fundamentals*, 4<sup>th</sup> ed. Pearson, 2007.

Suas, Michel. *Advanced Bread and Pastry A Professional Approach*. Delmar, Cengage Learning, 2009.

“The Chemistry of Baking Cookies,” *ThoughtCo.com*. Accessed Nov. 28, 2019. <http://www.thoughtco.com/chemistry-bsking-cookies-4140220>.



## ■ **Equipment, Tools, Supplies, and Facilities**

- ✓ Overhead or PowerPoint projector
- ✓ Visual(s) from accompanying master(s)
- ✓ Copies of sample test, lab sheet(s), and/or other items designed for duplication
- ✓ Materials listed on duplicated items
- ✓ Computers with printers and Internet access
- ✓ Classroom resource and reference materials

## ■ **Key Terms.** The following terms are presented in this lesson (shown in bold italics):

- ▶ bar cookies
- ▶ carryover baking
- ▶ chewy cookie
- ▶ creaming method
- ▶ crisp cookie
- ▶ double pan
- ▶ drop cookie
- ▶ one stage method
- ▶ rolled cookies
- ▶ soft cookie
- ▶ spread
- ▶ tuile
- ▶ warped

## ■ **Interest Approach.** Use an interest approach that will prepare the students for the lesson. Teachers often develop approaches for their unique class and student situations. A possible approach is included here.

*Ask students “who likes to eat cookies?” Ask students to identify their favorite cookie and why? Ask them what cookies they have baked before and what that process was like. Have students share their responses with the class. As a class, make a list of all of the variations of cookies the students can come up with. Looking at the list, have the students try to group similar cookies together. Ask them, “why do you think these cookies are similar?” Now discuss with the class about cookie classifications and that cookies are grouped by the type of cookie and preparation techniques they involve.*

# CONTENT SUMMARY AND TEACHING STRATEGIES

**Objective 1:** Describe cookie characteristics and summarize cookie preparation methods.

**Anticipated Problem:** How are cookies classified? What are the different methods of preparation for cookies?

## I. Cookie Characteristics and Preparation

- A. Cookies are classified according to their texture. They can be crisp, soft, or chewy. For example: biscotti are hard and crispy, while a macaroon is chewy and soft. Sometimes, the texture of a cookie, such as a chocolate chip cookie, is a matter of personal taste. Some people prefer them soft and chewy, while others prefer them crispy. It is important to know the various types of cookies so that you get the texture you want!
1. **CRISP COOKIES:** A **crisp cookie** has very little moisture in the batter. Most are made from stiff dough, without much liquid in the mix. They also have a high ratio of sugar. During the baking process, crisp cookies **spread**, or expand, more than other cookies because of the greater amount of sugar they contain. Crisp cookies dry fast during baking because of their thinness and must be stored in air-tight containers without refrigeration. If they absorb moisture, they will turn, or become soft.
  2. **SOFT COOKIES:** Soft cookies have a much different ratio of ingredients than crisp cookies do. A **soft cookie** has low amounts of fat and sugar in the batter, and a high proportion of liquid, such as eggs. Corn syrup, molasses, or honey is often used along with granulated sugar. Syrups retain moisture after the baking process, providing a soft texture. Soft cookies finish baking when their bottoms and edges turn a light golden brown. Soft cookies, like crisp cookies, must be stored in air-tight containers and not refrigerated. Soft cookie dough can be used in cookie forming machines such as a spritz machine.
  3. **CHEWY COOKIES:** All chewy cookies are soft, but not all soft cookies are chewy. A **chewy cookie** needs a high ratio of eggs, sugar, and liquid, but a low amount of fat. For chewy cookies, the gluten in the flour must develop during the mixing stage. The amount of gluten in a particular kind of flour determines how much the cookie will expand. Gluten provides both stretch and flexibility to the cookie, which makes it chewy. Pastry flour is ideal for cookie production. However, a combination of cake flour and bread flour may be used for a chewier texture.

- B. Cookie Spread — some cookies require hand-labor to produce a particular molded shape. Although, some cookies hold their shape while baking, most cookies will spread. The spread of a cookie is determined by six factors:
1. FLOUR TYPE: Pastry flour is used in cookies for its medium gluten content. This creates the proper spread.
  2. SUGAR TYPE: Granulated sugar provides the right amount of spread. If a finer grain of sugar, such as confectioner's sugar is used, the cookie will spread less.
  3. AMOUNT OF LIQUID: A cookie dough with a high amount of liquid, such as eggs, will have more spread. For reduced spread, decrease the amount of eggs in the recipe.
  4. BAKING SODA: In a cookie dough, the baking soda promotes the proper spread by relaxing the gluten. Baking soda is used as a leavening agent when it is combined with liquid and an acid.
  5. FAT TYPE: The type of fat used in cookie dough also affects the spread of the cookie. When butter or margarine is used, more spread is created. When all-purpose shortening is used, less spread is created.
  6. BAKING TEMPERATURE: Oven temperatures that are too low cause excessive spread. Oven temperatures that are too high give little or no spread.
- C. Cookie Preparation — when making cookies, you must determine the appropriate mixing type. The type of cookie that you make determines the mixing method you will use. Most cookie doughs contain the same ingredients: sugar, fat, eggs, flour, baking soda, and leavening agents, such as baking powder. These ingredients are mixed together in varying amounts. Additional ingredients such as chocolate, nuts or fruits may also be added.
1. ONE-STAGE METHOD: Some cookies are made using the **one-stage method**, where all ingredients, including melted butter or oil, are mixed in a single step. All ingredients should be room temperature and accurately measured. Follow these steps for the one-stage method:
    - a. Put all the ingredients in the mixer.
    - b. Blend at low speed using the paddle attachment. It will usually take two to three minutes to blend the batter or dough.
    - c. Scrape down the sides of the bowl with a spatula as necessary to be sure all the ingredients are well blended.
  2. CREAMING METHOD: The creaming method is the most common method for mixing cookie dough. The **creaming method** creams together sugar and fat, such as butter or shortening, making a smooth, creamy mixture. It is smooth because air has been beaten into the fat and sugar cells. The air cells expand, lightening the texture of the cookies while they bake. A smooth mixture that is created by the creaming method will easily combine with other ingredients, such as fruit, nuts, chocolate chips or seeds.

**Teaching Strategy:** Many techniques can be used to help students master this objective. Use VM–A through VM–B to facilitate a discussion of cookie characteristics and the principles of cookie preparation.

**Objective 2:** Summarize the various types of cookies and principles for baking and storing cookies.

**Anticipated Problem:** What are the various cookie types? What are the principles to follow for baking and cooling cookies?

## II. Making Cookies

- A. Cookies may be classified not only by texture and mixing methods, but also by type. The five basic types of cookies are drop, rolled, icebox, molded and bar cookies. It is easier to classify cookies by their type than by their mixing method. Mixing methods are relatively simple, but cookie types can vary a great amount. Regardless of the method used to make the cookie, it is important that all the cookies in a batch be of the same thickness and size.
1. **DROP COOKIES:** Chocolate chip, peanut butter and oatmeal are examples of a **drop cookie**. The soft batter or dough for drop cookies use the creaming process. Follow these steps to make drop cookies:
    - a. Choose a scoop for the size of the cookie that is desired.
    - b. Drop the cookies onto parchment-lined baking sheets; if the recipe calls for greased baking sheets, be sure to follow the directions.
    - c. Leave enough space between the cookies on the baking sheet to allow for even baking and spreading. Keep in mind how much a particular type of cookie will spread. Sometimes a recipe will recommend using a weight dipped in sugar to flatten each cookie. Most drop cookies will spread without being flattened.
  2. **ROLLED COOKIES:** Sugar cookies are examples of rolled cookies. **Rolled cookies** have a stiff dough that is rolled out. Shapes are then cut out of the dough and baked. Rolled cookies can be cut by hand or by machine.
  3. **ICEBOX COOKIES:** Icebox cookies are perfect for making sure that freshly baked cookies are always on hand. Drop cookie dough and sugar cookie dough work well for icebox cookies. The dough can be rolled into logs, wrapped and stored in the refrigerator. Once the rolls of mixed dough have been placed in the refrigerator, the cookies can be sliced and baked as needed.
  4. **MOLDED COOKIES:** Crescents, almond lace and tuile are examples of molded cookies. **Tuile** is a Belgian cookie that comes out of the oven soft. Tuile and almond lace cookies are shaped after baking.
  5. **BAR COOKIES:** **Bar cookies** are made from dough that has been shaped into long bars, baked and then cut. Popular bar cookies are hermits, coconut bars and fruit bars. Biscotti are bar cookies that are baked, sliced, and then baked again.

## B. Baking and Cooling Cookies

1. Always use clean pans that are not warped for baking cookies. A **warped** pan has become slightly less flat because of excessive heat and use. Lining the pans with parchment paper keeps cookies from sticking to the pan. It also allows for even browning.
2. The heat from the pan that continues to bake the cookies once they are removed from the oven is called **carryover baking**. It is better to slightly under bake cookies.
3. To prevent burning the bottoms or edges of cookies before they are done, **double pan** them by placing the sheet pan inside a second pan of the same size. This double-pan technique is recommended for a rich dough.
4. When you bake two sheets at one time on separate racks, reverse them half way through the baking process. This ensures even baking.
5. Cookies are done when the bottoms and edges turn light golden brown. Be sure not to remove cookies from the pans until they are firm enough to handle.

**Teaching Strategy:** Many techniques can be used to help students master this objective. Use VM–C to facilitate a discussion of cookie types and principles for baking and cooling cookies. Assign LS–A.

- **Review/Summary.** Use the student learning objectives to summarize the lesson. Have students explain the content associated with each objective. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. If a textbook is being used, questions at the ends of chapters may also be included in the Review/Summary.
- **Application.** Use the included visual master(s) and lab sheet(s) to apply the information presented in the lesson.
- **Evaluation.** Evaluation should focus on student achievement of the objectives for the lesson. Various techniques can be used, such as student performance on the application activities. A sample written test is provided.

## ■ Answers to Sample Test:

### Part One: Matching

1. b
2. d
3. f
4. c
5. e
6. a

## Part Two: Completion

1. crisp cookie
2. one stage method
3. creaming method
4. chewy cookie
5. spread
6. double pan

## Part Three: Short Answer

1. Answers may vary and would be similar to the following. Oven temperatures that are too low cause excessive spread. Oven temperatures that are too high give little or no spread.
2. Answers may vary and would be similar to the following. When making cookies, you must determine the appropriate mixing type. The type of cookie that you make determines the mixing method you will use. Most cookie doughs contain the same ingredients: sugar, fat, eggs, flour, baking soda, and leavening agents, such as baking powder. These ingredients are mixed together in varying amounts. Additional ingredients such as chocolate, nuts or fruits may also be added.

# Cookies and Bars

## ► Part One: Matching

**Instructions:** Match the term with the correct definition.

- |                     |                   |
|---------------------|-------------------|
| a. carryover baking | d. rolled cookies |
| b. soft cookies     | e. tuile          |
| c. drop cookies     | f. bar cookies    |

- \_\_\_\_ 1. Has low amounts of fat and sugar in the batter, and a high proportion of liquid, such as eggs
- \_\_\_\_ 2. Have a stiff dough that is rolled out
- \_\_\_\_ 3. Made from dough that has been shaped into long bars, baked and then cut
- \_\_\_\_ 4. Chocolate chip, peanut butter and oatmeal are examples
- \_\_\_\_ 5. A Belgian cookie that comes out of the oven soft
- \_\_\_\_ 6. The heat from the pan that continues to bake the cookies once they are removed from the oven

## ► Part Two: Completion

**Instructions:** Provide the word or words to complete the following statements.

1. A \_\_\_\_\_ has very little moisture in the batter.
2. The \_\_\_\_\_, where all ingredients, including melted butter or oil, are mixed in a single step
3. The \_\_\_\_\_ creams together sugar and fat, such as butter or shortening, making a smooth, creamy mixture.







# WHAT ARE COOKIES?

A cookie is a baked or cooked food that is typically small, flat and sweet. It will usually contain flour, sugar, and some type of oil or fat. It may include other ingredients such as raisins, oats, chocolate chips, nuts, etc. Cookies may be mass-produced in factories, made in small bakeries or homemade.



# COOKIE TEXTURES

Soft cookies have a much different ratio of ingredients than crisp cookies do. A *soft cookie* has low amounts of fat and sugar in the batter, and a high proportion of liquid, such as eggs. A *crisp cookie* has very little moisture in the batter. Most are made from stiff dough, without much liquid in the mix. They also have a high ratio of sugar. All chewy cookies are soft, but not all soft cookies are chewy. A *chewy cookie* needs a high ratio of eggs, sugar, and liquid, but a low amount of fat.



# COOKIE CLASSIFICATIONS

The five basic types of cookies are drop, rolled, icebox, molded and bar cookies. It is easier to classify cookies by their type than by their mixing method. Mixing methods are relatively simple, but cookie types can vary a great amount.



# Cookie Classifications

## Purpose

The purpose of this activity is to plan and prepare a cookie from one of the cookie classification groups.

## Objectives

1. Research how cookies are classified by type.
2. Choose a classification to research, plan and prepare a cookie from.
3. Plan, prepare and evaluate chocolate chip cookies.
4. Present your cookie classification and cookie to the class.
6. OPTIONAL: Take pictures of the cookie variations for your culinary arts portfolio.

## Materials

- ◆ lab sheet
- ◆ recipe for your cookie
- ◆ device with Internet access
- ◆ ingredients and equipment (as needed to prepare your cookie)

## Procedure

1. Work with a small group to complete this lab activity. Review your class notes about cookies and bars.
2. Choose a cookie classification from your instructor that you and your group will plan, prepare and evaluate. The cookie classifications are as follows:
  - a. Drop cookies
  - b. Rolled Cookies
  - c. Molded Cookies



- d. Icebox Cookies
  - e. Bar Cookies
3. Research a recipe of one cookie your group will plan and prepare that falls under the classification assigned from step 2.
  4. Using classroom standard practices, plan for the preparation of the cookies. Have your instructor approve the lab plans.
  5. Conduct mise en place. As directed, prepare and bake the cookies. Follow standard safety and sanitation rules.
  6. Remove cookies from the oven. Follow recipe instructions for cooling.
  7. Prepare a 3-minute presentation of your cookie classification and cookie.
  8. Finally, present your classification and cookies to the class.
  9. Turn in your completed lab sheet to your instructor, along with a sample cookie.
  10. OPTIONAL: Take pictures of your cookie variation for your culinary arts portfolio.