8.5

Chocolate

Understand how chocolate is made and how it should be stored.

Describe the process of tempering chocolate.

Demonstrate tempering chocolate to prepare chocolate bowls.
What’s Your Chocolate IQ?

1. Which of these candy bars is no longer made in the United States?
   A. Oh Henry!
   B. Bar None
   C. What the Macallan!
   D. Clark Bar

2. Most of the world’s cacao beans come from:
   A. Mexico
   B. Ghana
   C. Madagascar
   D. Ivory Coast

3. Ganache is chocolate melted in:
   A. Heavy cream
   B. Butter
   C. Amaretto
   D. Hazelnut spread

4. Which cake is really from Germany?
   A. Black Forest
   B. German chocolate
Chocolate IQ continued

5. Chocolate contains all of these except:
   A. Vitamin C
   B. Calcium
   C. Iron
   D. Zinc

6. Which has the longest shelf life?
   A. Milk
   B. Dark
   C. White

7. Before melting chocolate, you should chop it into:
   A. Large chunks
   B. Medium chunks
   C. Small pieces
Which candy was invented for American soldiers during World War II?

A. Reese's Peanut Butter Cups
B. Hershey's Kisses
C. M&M'S
D. Mounds

The cacao pod is considered a ________.

A. Vegetable
B. Fruit
C. Legume
D. Spice

Where's the best place to store chocolate?

A. Refrigerator
B. Freezer
C. Cupboard
Chocolate IQ continued

11. As it cools, tempered chocolate:
   A. Expands
   B. Contracts

12. Which tool is essential for tempering chocolate?
   A. Stand mixer
   B. Measuring spoons
   C. Whisk
   D. Thermometer
13 To check quality, cacao beans are put through:

A. An X-ray machine
B. An infrared sorter
C. A cut test
D. A weight test

14 Who invented hot chocolate?

A. The Mayans, in 500 B.C.
B. The Romans, in 25 B.C.
C. The French, in 1789
D. Milton S. Hershey, in 1907

15 What is the white coating that sometimes develops on chocolate?

A. Cloud
B. Moss
C. Fog
D. Bloom
True or False?

16. One cacao bean makes one ounce of chocolate.

17. White chocolate isn’t technically chocolate.

18. Chocolate doesn’t absorb odors from other foods.

19. Dutch-process cocoa powder is less acidic than regular chocolate.

Chocolate IQ Answers-
1 point for each correct response

1. B
Bar None, produced by The Hershey Company, was sold in the U.S. from 1986 to 1996. It can still be found in Mexico.

2. D

3. A

4. A
German chocolate cake was invented by a Dallas housewife in the 1950s; she used Baker’s German’s Sweet Chocolate, named for 19th-century American chocolate maker Sam German.

5. A

6. B
Dark chocolate can stay fresh for more than one year. Milk chocolate and white chocolate should be used within a year.

7. C

8. C
M&M’S sugar coating, which prevents melting, proved handy in the trenches.

9. B

10. C

11. B

12. D
Chocolate can scorch easily—see our tempering how-to on page 72. You could use a candy thermometer, but an instant-read thermometer is faster and more accurate. Make sure it reads as low as 80°.

13. C
Beans are cut lengthwise and checked for mold, insect damage and other defects.

14. A
The Mayans are most often credited with inventing drinking chocolate, though recent evidence suggests the brew could date back even further.

15. D
Bloom, or discoloration, occurs when chocolate gets too warm and the cocoa butter separates, or when condensation on the surface causes the sugar to crystallize. The chocolate is still good for baking.

True or False?
16. F
Making one ounce of chocolate requires up to 35 beans.

17. T
White chocolate contains no cocoa solids. (It’s mostly fat and sugar.)

18. F
Chocolate absorbs odors, which can alter its flavor.

19. T
Dutch-process cocoa is not acidic, so it behaves differently in recipes (see page 149).

20. T
A 1.4-ounce piece of chocolate contains 6 to 23 mg of caffeine.
How did you do?

Tally your score to see where you stand.

0 to 6 points
NOT SO SWEET Someone doesn’t eat much chocolate! Treat yourself more often—starting with the chocolate chip cookies on page 127.

7 to 13 points
SEMISWEET You know your chocolate—and like the average American, you probably eat about 11 pounds of it a year. Find some fun new treats on page 120.

14 to 20 points
SUPER SWEET Willy Wonka would be proud—you’re a master chocolatier (and eater)! Celebrate with a cocktail on page 134.
Evidence shows chocolate has been produced as early as 1900 B.C.
Consumed originally as fermented, roasted and then ground cacao beans into a paste that they mixed with water, vanilla, honey, chili peppers and other spices to brew a frothy chocolate drink.

Olmec, Mayan and Aztec civilizations found chocolate to be an invigorating drink and mood enhancer
Led them to believe that it possessed mystical and spiritual qualities.
The Mayans worshipped a god of cacao and reserved chocolate for rulers, warriors, priests and nobles at sacred ceremonies.
Chocolate is produced from cocoa beans picked from cacao trees.
Chocolate Preparation and Products

- Processors roast the cocoa beans, and machinery is used to loosen the outer shells and crack the beans into small pieces, called nibs, which are the basis of all cocoa products.

- Shells can be used in gardens.
The cocoa beans are crushed into a paste that is completely unsweetened, called **chocolate liquor**.

- This is NOT an alcohol (although there are chocolate *liqueurs*, which DO contain alcohol)

Chocolate liquor may be ground to give a smoother texture, or pressed to separate the liquid from the solid materials:

- The liquid is **cocoa butter**, which can be combined with chocolate liquor to make eating chocolate, or flavored and sweetened to make white chocolate.
- The solids are further ground to form cocoa powder.

**Chocolate Liquor Link**
## Types of Chocolate

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chocolate, bitter sweet</td>
<td>Solid chocolate 35-50% chocolate liquor, 15% cocoa butter and 35-50% sugar</td>
<td>Blocks, bars, chunks &amp; chips</td>
</tr>
<tr>
<td>Chocolate liquor</td>
<td>Chocolate flavored portion of the chocolate</td>
<td>Blocks or bars</td>
</tr>
<tr>
<td>Chocolate semi-sweet</td>
<td>Solid chocolate about 45% chocolate liquor, 15% cocoa butter and 40% sugar</td>
<td>Blocks, bars, chunks &amp; chips</td>
</tr>
<tr>
<td>Chocolate, unsweetened</td>
<td>90% chocolate liquor, 5% cocoa butter, maybe 5% sugar</td>
<td>Blocks or bars</td>
</tr>
<tr>
<td>Cocoa</td>
<td>Only 10-25% of cocoa butter remains</td>
<td>Powdered</td>
</tr>
<tr>
<td>Cocoa butter</td>
<td>Vegetable fat portion of chocolate, added for chocolate</td>
<td>Wrapped in plastic at room temperature</td>
</tr>
</tbody>
</table>
Tempering Chocolate

- Cooks melt chocolate in a process called **tempering**, melting the chocolate by heating it gently and gradually.
  - Tempered chocolate will coat items with an even layer and then harden into a shiny shell.
  - To coat a food item, place food on a rack over a clean tray and pour the tempered chocolate over it.

- Tempered chocolate can be drizzled or piped out into designs with a piping bag for decoration, or can be used as a glaze.
- Can be purchased already tempered
Process: Tempering Chocolate

LOW AND SLOW!

- Finely chop 1 pound of chocolate.
- Combine ¾ of the chocolate and 2 tsp. shortening in a heat proof bowl set over a pan of simmering water. Don’t let the water near the chocolate.
- Melt the chocolate to 105 degrees, stirring. Place the bowl in a larger bowl of cold water, stir in the remaining chocolate until melted. The temperature should drop to 87 degrees. Place back over simmering water. Heat back to 92 over hot water. Re-heat to 92 if it gets too thick.
Chocolate Storage

- To store chocolate, wrap it carefully, and keep it in a cool, dry, well-ventilated area.

- Do not refrigerate chocolate.
  - Refrigeration causes moisture to condense on the surface of the chocolate.

- Properly stored, chocolate will last for several months.

- Cocoa powder stored in tightly sealed containers in a dry place will keep almost indefinitely.
Chocolate Bloom

- Sometimes a white coating, called bloom, appears on the surface of the chocolate.
  - Indicates that some of the cocoa butter has melted and then recrystallized on the surface.
Tasting Chocolate

- Cleanse your palate
- Chocolate needs to be room temperature
- Allow the chocolate to dissolve in your mouth – don’t bite or chew
- Describe what you taste at the beginning, during and after
Chocolate uses

- Sauces or icing (Ganache)
- Dipping
- Piping - garnish
Chocolate Molds

The following Web sites provide more detailed information on working with chocolate molds:

- How to use candy molds
- Candyland Crafts
Chocolate Bowls

Recipe/Instructions
Section 8.5 Summary

- Chocolate is produced from cocoa beans picked from cacao trees.
- Chocolate is very versatile and can be used in many main dishes.
- Cocoa beans are crushed into a paste that is completely unsweetened, called chocolate liquor.
- Chocolate liquor may be ground to give it an even smoother texture, or it may be pressed to separate the liquid from the solid materials.
- To store chocolate, wrap it carefully, and keep it in a cool, dry, well-ventilated area. Do not refrigerate chocolate.
- Cooks melt chocolate in a process called tempering, melting the chocolate by heating it gently and gradually.
- Tempered chocolate will coat items with an even layer and then harden into a shiny shell.
Assignment

1. Using this presentation and after reading Section 8.5 (pg. 543-549), answer review questions found on pg. 550 #1-7 in complete sentences.

2. Research white chocolate and write 1-2 paragraphs answering the following questions:
   • What is it and how is it made?
   • What are its common uses in cuisine? Include specific recipes you have found in your research.