



Chocolate

24

AFTER READING THIS CHAPTER, YOU SHOULD BE ABLE TO:

1. Temper chocolate couverture.
2. Use tempered chocolate for dipping and molding.
3. Produce a variety of chocolate decorations.
4. Make chocolate truffles.



NOT ONLY IS chocolate one of the world's most popular confections, it is also a wonderful medium for decorative work, ranging from simple garnishes for desserts to elaborate showpieces. Many pastry chefs make a specialty of chocolate work and become well known for their imaginative and skillful pieces.

Because of its composition, chocolate is difficult to work with. It is sensitive to temperature and moisture. Proper melting and cooling require accurate temperature control. Unless a liquid is to be added, chocolate must be protected from moisture. A single drop of water will ruin its texture and make it unusable for dipping or molding.

This chapter provides an introduction to fine chocolate work. The fundamentals of handling chocolate are discussed, followed by procedures for simple decorative work and molding. A brief look at chocolate confections closes the chapter.

PRODUCTION OF CHOCOLATE

Chocolate is produced from the seeds of a tropical tree called the *cocoa* or, more properly, *cacao* tree. As with coffee, the quality of cocoa is sensitive to growing conditions, so cocoa from the best growing regions commands the highest prices. Cocoa trees produce large pods full of seeds called *cocoa beans*. After the pods are harvested, the beans are quickly removed and allowed to ferment until they lose most of their moisture. There are several ways of doing this, but the traditional method is to spread them between layers of banana leaves and leave them for several days, turning them often so they ferment evenly.

CHOCOLATE HISTORY

The cacao tree originated in the western hemisphere, where it grows in tropical climates from northern South America to southern Mexico. Long before the European discovery of the Americas, native peoples, including the Mayans and Aztecs, brewed a bitter, unsweetened beverage from the beans, which they had learned to ferment and dry. The beverages, probably enjoyed hot, were often flavored with chiles, vanilla, and other ingredients.

The cacao tree grew in limited areas, so the pods were prized and became objects of trade. They were even used for currency. In addition, they were important in religious ceremonies.

Spanish conquerors at first disliked the bitter, black beverage the natives brewed from cacao, but they soon learned to appreciate it and began carrying cocoa beans back to Europe in the 1500s. Availability was limited at first, but by 1700 cocoa had spread through much of Europe. Its use was still mostly as a beverage, although Europeans found they enjoyed the drink more when it was sweetened. Cocoa was also used as a medicine and as a cooking spice.

In the early 1800s, a Dutch chemist and chocolate maker named Coenraad Johannes van Houten developed a process for removing much of the cocoa butter from raw cocoa, using a powerful press. He also discovered that processing the cocoa with an alkali yielded a milder product with a darker color. This “dutching” process is still used today for some cocoa.

Van Houten’s inventions enabled the development of modern chocolate manufacturing and expanded the use of chocolate beyond beverages, for confections. Manufacturers discovered that by adding cocoa butter back to ground cocoa, they could make a smooth paste that hardened into blocks. In 1842, the Cadbury brothers (George and Richard) began selling block chocolate in England. In the 1880s, the Swiss Rudolphe Lindt invented the conching process (described in the text) to make a smoother product. Around the same time, another Swiss, Daniel Peter, created milk chocolate by adding dried milk to the paste. (Dried milk had been invented by Henri Nestlé.)

The chemical changes that take place during fermentation turn the beans from yellowish to brown and begin to develop the flavor. The fermented beans are next dried in the open air, because they still contain a great deal of moisture. The dried beans are then ready to be shipped to processors. A single tree yields only 1 to 2 pounds (500 g to 1 kg) dried beans.

Cocoa processors clean the dried beans thoroughly and then roast them. The true flavor of the cocoa develops during roasting, making the temperature and degree of roasting important factors in the quality of the finished chocolate. After roasting, the beans are cracked and the shells are removed. The broken particles of cocoa that result are called *nibs*. Nibs contain more than 50 percent fat, in the form of *cocoa butter*, and very little moisture.

Grinding the nibs produces a paste and releases the cocoa butter from inside the cell walls. This paste is called *chocolate liquor* or *cocoa mass* and is the basis of chocolate production. When chocolate liquor cools, it sets into a hard block. (Chocolate liquor contains no alcohol, in spite of its slightly misleading name.)

The next stage of manufacturing is to separate the cocoa powder from the cocoa butter. This is done with powerful hydraulic presses that squeeze out the melted fat, leaving hard cakes that are then ground into cocoa powder. Meanwhile, the cocoa butter is purified to remove odor and color.

To manufacture chocolate, the cocoa powder is blended with sugar and, in the case of milk chocolate, milk solids. These ingredients are ground and blended together. At this point comes the critical procedure called *conching*. This is a two-stage process that first removes additional moisture and refines the flavor. During the second stage of conching, cocoa butter is added back and the liquid mass is ground and mixed for hours or even days to develop a fine, smooth texture. Conching also plays an important role in reducing the viscosity of the chocolate. In general, higher-quality, more expensive chocolates derive their superior texture from longer conching. Finally, the liquid chocolate is tempered, as explained below, and molded into blocks for sale as *couverture*.

Couverture

The basic types of chocolate are introduced in Chapter 4. Please review pages 86–89 and, in particular, note the difference between *couverture* and *coating chocolate* or *baking chocolate*. Genuine *couverture* contains cocoa butter and no other fat. Coating chocolate is chocolate that has part or most of the cocoa butter replaced with other fats in order to make it easier to handle and reduce the cost. In this chapter, we are concerned entirely with *couverture*, also known as *confectioners’ chocolate*.

Dark couverture consists of these components:

- Total cocoa solids:
 - Nonfat cocoa solids
 - Cocoa butter
- Sugar

In addition, it may also contain small quantities of vanilla (a flavoring) and lecithin (an emulsifier). On the packaging of a block of professional couverture, you may see a series of numbers such as the following: 65/35/38. The first two numbers refer to the ratio of total cocoa solids to sugar—in this case, 65% cocoa solids to 35% sugar. The last number is the total fat content (38% in the example) and is a factor in determining the viscosity, or thickness, of the chocolate. The higher the fat content, the thinner the chocolate will be when melted. Couverture must contain at least 31% cocoa butter.

The quantities of cocoa solids and sugar determine whether dark couverture is referred to as *semisweet*, *bittersweet*, or *extra-bittersweet*. The higher the percentage of total cocoa solids, the lower the sugar content will be. Semisweet chocolate couverture contains 50 to 60% cocoa solids. Chocolates with more cocoa solids (and, therefore, less sugar) are called bittersweet and extra-bittersweet. The highest practical percentage of cocoa content is around 85%.

Milk chocolate couverture contains milk solids in addition to cocoa solids and sugar. It usually contains about 36% cocoa solids and no more than 55% sugar. **White couverture** technically cannot be called chocolate because it contains no nonfat cocoa solids, only cocoa butter, sugar, milk solids, and flavoring.

In this chapter, the term *couverture*, when used by itself, always refers to **dark chocolate**. Milk chocolate couverture or white couverture is specified where those types are intended.

Tempering

For most chocolate work, couverture will not handle properly when simply melted. It will take too long to set, and when it does set, it will not have the desired shine or the proper texture. The process of preparing couverture for dipping, coating, molding, and other purposes is called **tempering**.

The reason for tempering can be explained as follows: When melted cocoa butter cools and solidifies, it is able to form six different kinds of crystals. Some of these crystals melt at a low temperature and some at a high temperature (see the Cocoa Butter Crystal Melt Points sidebar). The two forms with the highest melting point, known as V and VI crystals, are considered stable, while the other four (I through IV) are unstable because they melt too easily. Fine chocolate work depends on having chocolate with many stable crystals. These high-melt-point crystals give high-quality chocolate its shine and its “snap” (high-quality chocolate that has been properly tempered and cooled breaks with a clean, sharp snap). If the chocolate contains too many of the unstable crystals, it will set slowly, have a dull surface showing streaks of cocoa butter, and have a poor, crumbly texture. (The whitish coating on poorly tempered or untempered chocolate is called **bloom**.)



Tools for chocolate. Clockwise from top left: grooved scraper, wood-grain tool, molds for truffles and small chocolates, dipping forks, plastic mat for textured cutouts, cotton wool for polishing molds and acetate, and inexpensive molds for larger pieces.

COCOA BUTTER CRYSTAL MELT POINTS

CRYSTAL FORM	MELTING POINT (U.S.)	MELTING POINT (METRIC)
I	63°F	17°C
II	70°F	21°C
III	79°F	26°C
IV	82°F	28°C
V	94°F	34°C
VI	97°F	36°C

The object of tempering is to get the melted chocolate to form many of the stable crystals (mostly form V) and few of the unstable ones. When chocolate is tempered, stable crystals begin to form first. Stirring the chocolate mixes these crystals through the mass of chocolate, causing more stable crystals form. In melted chocolate that has been properly tempered, many high-melt-point stable crystals are well distributed throughout the chocolate mass. Therefore, the chocolate solidifies quickly when cooled and has a good crystal structure.

BETA 6 CRYSTALS

Technology has simplified the tricky process of tempering chocolate. Now available commercially, beta 6 crystals are crystals of cocoa butter in their most stable form. Simply by adding the crystals to melted couverture, the pastry chef can quickly and easily temper the chocolate. The basic procedure for tempering with beta 6 crystals consists of three steps:

1. Bring melted couverture to 95°F (35°C).
2. Add beta 6 crystals equal to 1% of the weight of the chocolate. (For example, for 6 lb of chocolate, you need only 1 ounce of crystals; for 3 kg of chocolate, 30 g crystals.) Stir well to make sure they are blended in thoroughly.
3. Wait 10 minutes. The couverture is now tempered.

The actual process of melting and tempering chocolate consists of three steps. The proper temperatures for each of these three stages depend on the type of chocolate and its exact composition. The Critical Temperatures for Tempering Chocolate table below indicates the range of temperatures appropriate to the basic chocolate types. The manufacturer or the supplier should be able to indicate the exact temperatures that are best for each of its products.

1. **Melting.** The chocolate is placed in a pan or bowl and set over hot water to melt. It should not be set over direct heat because the chocolate is easily damaged by heat, which destroys both the texture and the flavor. Stir constantly while the chocolate is melting. The chocolate must be brought to a temperature high enough to completely melt all the fats, including the high-melt-point fats. Refer to the table below.
2. **Cooling or precrystallizing.** When the chocolate is melted, it is removed from the heat. All or part of the chocolate is then cooled until it is thick and pasty. At this point, many stable fat crystals have formed. The chocolate is stirred during this process so that the crystals are well distributed throughout the chocolate.

3. **Rewarming.** The chocolate is too thick at this point for dipping, molding, or most other uses, and must be warmed slightly before it can be worked with. Set it over warm water and stir it until it is the proper temperature and thickness for use. Correct rewarming raises the temperature above the melting point of form IV crystals. At this point, all unstable crystals have melted and the chocolate contains only stable crystals.

Rewarming must be done carefully. Do not let the chocolate get warmer than the recommended temperature. If this happens, too many of the stable form V crystals melt and the chocolate is no longer tempered, making it necessary to repeat the whole procedure. If the chocolate is too thick at the proper temperature, thin it with a little melted cocoa butter. Do not thin it by heating it.

CRITICAL TEMPERATURES FOR TEMPERING CHOCOLATE

PROCESS	DARK CHOCOLATE COUVERTURE	MILK CHOCOLATE COUVERTURE	WHITE COUVERTURE
Melting	115°–120°F (46°–49°C)	110°–115°F (43°–46°C)	110°–115°F (43°–46°C)
Precrystallizing (cooling)	80°–84°F (27°–29°C)	78°–82°F (26°–28°C)	78°–82°F (26°–28°C)
Rewarming	88°–90°F (31°–32°C)	86°–88°F (30°–31°C)	84°–86°F (29°–30°C)

Manufacturers and large processors use precise thermostatically controlled equipment to automatically temper the chocolate to the exact temperatures required. In the pastry shop, however, two other methods are used for tempering small quantities of couverture. The first method, *tablage*, is quick to do and is, perhaps, the most popular. The second method is *seeding*. Both methods are described in the Procedures for Tempering Chocolate.

Once the chocolate is tempered, it is ready for molding, dipping, and other uses. The following sections outline procedures for a variety of chocolate work.

Before beginning to work with tempered chocolate, make sure the work area is at a temperature between 65° and 77°F (18° and 25°C). If it is colder, the chocolate will set up too quickly and be difficult to handle. If warmer, the chocolate will take too long to set; in addition, the marble slab used for *tablage* and much other chocolate work will be too warm for some techniques to work.

PROCEDURE: Tempering Chocolate

METHOD 1: TABLAGE

Caution: In all stages of this procedure, do not let even a trace of moisture come in contact with the chocolate.

1. With a heavy knife, chop the chocolate into small pieces. Place the pieces in a dry stainless steel bowl.
2. Set the bowl in a pan of warm water. Stir the chocolate constantly so it melts uniformly.
3. Continue stirring until the chocolate is completely melted and reaches the proper temperature, as indicated in the Critical Temperatures for Tempering Chocolate table.
4. Remove the bowl from the water bath. Wipe all traces of moisture from the bottom of the bowl, to avoid contaminating the chocolate.
5. Pour about two-thirds of the chocolate onto a marble slab (a). With a metal scraper and a spatula, spread the chocolate and quickly scrape it back together, continuing to mix the chocolate so it cools uniformly (b).



6. When the chocolate cools to the proper temperature (78°–84°F/26°–29°C, as indicated in the table on

page 636), it will become thick and pasty. Quickly scrape it back into the bowl with the remaining melted chocolate (c).



7. Mix and reheat the chocolate over hot water to the proper rewarming temperature (84°–90°F/29°–32°C, depending on the chocolate). Do not warm it above the recommended temperature. The chocolate is now ready for use.

PROCEDURE VARIATION

Instead of working the chocolate on a marble slab as indicated in step 5, some chefs prefer to set the entire bowl over cold water and stir until the chocolate cools to the proper temperature. Then they rewarm the chocolate as in step 7. This method may not produce chocolate with as good a temper, and it raises the risk of getting water in the chocolate. However, it has the advantage of speed.

METHOD 2: SEEDING OR INJECTION

1. Chop the chocolate to be melted into small pieces, as in method 1.
2. Cut fine shreds or shavings from a block of tempered chocolate and set them aside.
3. Melt the chopped chocolate as in method 1.
4. Remove the melted chocolate from the water bath. Stir in some of the shaved chocolate.
5. When these shavings are nearly all melted, add a few more shavings. Continue adding and stirring until the melted chocolate is cooled to the proper tempering point. Do not add the shavings too fast, or they may not all melt.
6. Rewarm the chocolate as in method 1.



KEY POINTS TO REVIEW

- What is the composition of dark couverture? Of milk chocolate couverture? Of white couverture?
- What is tempering, and why is it necessary?
- What are the steps in the two procedures for tempering chocolate?

MOLDING CHOCOLATE

MOLDING CHOCOLATE IS possible because it contracts when it sets. Thus, it pulls away from the mold and can be easily removed. Molds for chocolate are made of metal or plastic. They must be kept clean and dry, and the insides must be shiny and free of scratches. If they are scratched, chocolate will stick to them.

To be sure the molds are completely clean and smooth, polish the inside surfaces with clean cheesecloth or cotton wool. Be sure they are completely dry before proceeding to mold the chocolate.

This section describes molding procedures for hollow chocolates. Large hollow molds are used for display pieces, while smaller molds are used for decorative work as well as for confections (such as chocolate rabbits for Easter). Procedures for molding chocolate truffles and other filled candies are covered in the last part of this chapter.

Molding chocolate eggs is one of the simpler molding procedures. It also serves to illustrate the techniques used in other types of molds. The Procedures for Molding Chocolate Eggs details two methods. Next is a more general description of other types of molds and how to use them.

These procedures explain molding single-color chocolates. You can also use contrasting colors of chocolate for decorative effects. This is done by decorating the inside of the mold with one color and then coating it with another color, as illustrated on page 647. Use the same techniques as described in the discussion of chocolate cutouts, below.

Two-part molds are used to make hollow chocolate items. There are two kinds: completely enclosed molds and molds with open bottoms. The first step for using either kind of mold is to paint the inside surfaces with a thin layer of tempered chocolate, using a soft brush. This step is frequently omitted, but it is recommended because it eliminates small air bubbles that might otherwise mar the surface of the chocolate. When the chocolate is set but not hard, continue with one of the following procedures.

To use two-part molds with open bottoms, clip the two parts together. Pour tempered chocolate into the opening until the mold is nearly full. Tap the mold with a wooden stick to release air bubbles. After a few moments, invert the mold over the chocolate pot and pour out the chocolate, leaving a layer of chocolate coating the mold. Set the mold, open end down, on a sheet of parchment. Additional melted chocolate will run down the inside and seal the open end. Leave the filled mold in a cool place until set, then open it and remove the chocolate.

If you are using plastic molds, you can easily see when the chocolate has set and pulled away from the mold. With metal molds, however, you just have to let the molds stand long enough until you are certain the chocolate is set.

To use enclosed molds, pour enough tempered chocolate into one half of the mold to completely coat the insides of both halves. Place the second half of the mold on top and clip it in place. Turn the mold over and over so the inside is completely coated with chocolate. Tap the mold several times while rotating it in order to release air bubbles. Let the chocolate stand until set, then unmold.

PROCEDURE: Molding Chocolate Eggs

METHOD 1

1. Polish the insides of the mold with cheesecloth or cotton wool.
2. Using a clean, dry brush, brush the inside of the mold with tempered chocolate. Be sure to cover the inside of the mold completely with an even layer.
3. Let the mold stand until the chocolate is partially set. It should be firm but not hard.
4. Using a metal scraper, scrape the excess chocolate from the top of the mold so the half-egg has a smooth, sharp edge.
5. Let the mold stand in a cool place until the chocolate is completely set and hard.
6. Turn the mold over and tap it gently to unmold the egg. To avoid getting fingerprints on the shiny surface of the unmolded chocolate, handle it with disposable plastic gloves.
7. To glue two halves together to make a whole hollow egg, use one of two methods:
 - Using a paper cone filled with tempered chocolate, pipe a fine line of chocolate onto the edge of one of the halves, then press the two halves together.
 - Place one of the halves open side down on a warm baking sheet for just an instant to melt the edge slightly, then fasten the two halves together.
8. Use the point of a small knife to trim excess chocolate from the seam.

METHOD 2

1. Polish the inside of the mold with cheesecloth or cotton wool.
2. Fill the mold with tempered chocolate until it runs over the top.
3. Invert the chocolate over the container of tempered chocolate to dump out the chocolate, leaving just a coating on the insides of the molds.
4. Prop the molds upside down over two sticks set on a sheet of parchment or clean sheet pan to allow the excess to drip out.
5. Continue with step 3 of method 1.



CHOCOLATE DECORATIONS

TEMPERED CHOCOLATE CAN be used to make a variety of decorations for cakes, pastries, and other items. The most popular of these are described here.

Chocolate Cutouts

To make chocolate cutouts, begin by polishing a sheet of acetate with cheesecloth or cotton wool. Pour tempered chocolate onto the acetate and spread into a thin layer with a palette knife. Let the chocolate stand until it clouds over and becomes firm but not hard. Cut with a small, sharp knife, cutting straight through to the acetate; or use a metal cutter, slightly warmed, to cut out desired shapes. Do not attempt to remove the cutouts at this point. Let stand until the chocolate is hard and the acetate peels away easily from the chocolate.

For decorative effects, you can coat the acetate with two colors of chocolate, making attractive patterns. The following are some of the easiest and most popular techniques:

- Flick or spatter streaks of one color of chocolate—for example, white couverture. Let the chocolate set, and then coat the acetate with a contrasting color of chocolate.

- With a paper cone, pipe a latticework design of fine stripes with one color of chocolate. Let the chocolate set, and then coat the acetate with a contrasting color.
- With a paper cone, pipe large dots of chocolate at regular intervals. Let the chocolate set, and then coat the acetate with a contrasting color.
- Spread with one color of chocolate, then scrape with a comb scraper, using the same technique as for ribbon sponge (p. 410). Then cover with another color.
- Use *chocolate transfer sheets*, which are commercially made acetate sheets with designs on them. Use as you would a plain acetate sheet, making sure the raised or textured side—the side that has the design on it—is facing up. After the chocolate has set and the acetate is peeled off, the design remains on the chocolate. Custom-made transfer sheets, embossed with a company’s name or logo, for example, are available. (A transfer sheet is used to illustrate the procedure in the next section.)
- To marble chocolate, add a little tempered white couverture to tempered dark couverture and mix just until the white shows streaks against the dark (see the illustration). Then coat the acetate.



Mix dark and white couverture very lightly to marble.



Pour some of the chocolate onto a sheet of acetate.



Lift the acetate and tilt it from side to side so the chocolate coats the entire sheet.



When the chocolate clouds over and is set but not hard, cut out desired shapes with a sharp knife or cutter.



Broken pieces of dark chocolate streaked with white and cutouts of marbled white and milk chocolate.

Curled Cutouts

The previous section explained regular flat chocolate cutouts. By curling the cutouts, you can make chocolate décor that has even more visual impact. The Harlequin Roll on page 477 is decorated with white chocolate curled cutouts made on an orange transfer sheet. Following is the procedure.

1. Place a transfer sheet, rough side up, on a work surface, preferably a marble slab.
2. Spread with a layer of tempered chocolate (a).
3. When the chocolate is set but not hard, cut into triangles or other desired shapes (b).
4. Lay a sheet of parchment over the chocolate and roll up diagonally (c).
5. Set the roll in a curved mold to secure it while it hardens (d).

6. When the chocolate has hardened, peel off the acetate (e) and carefully separate the cut-outs (f).



Chocolate Strips

Strips of acetate can be coated with decorative chocolate in the same way as sheets. Strips have many uses, such as ribbons and bows for showpieces (p. 642) and liners for charlotte molds. The procedure for coating a strip of acetate with tempered chocolate is similar to coating a large sheet, as described above:

1. Use a palette knife to spread the chocolate in an even layer to cover the strip.
2. Then carefully lift the strip and run your fingers along its edges to remove excess chocolate and make a neat, straight edge.

Chocolate strips may be decorated with patterns of chocolate in two colors, using the same techniques as above. An additional technique, which creates a pattern with the appearance of wood grain, requires a special tool, shown on page 635.

1. Drizzle a little tempered dark chocolate onto an acetate strip (a) and, with a palette knife, spread it into a thin layer covering the strip (b).



2. Scrape the wood-grain tool down the length of the strip, rocking it back and forth to make the grain pattern (c). Let stand a few minutes to allow the chocolate to set.





3. Spread the strip with a layer of tempered white couverture (d).

4. Lift the acetate strip and run your fingers along both edges to remove excess chocolate (e). The acetate side of the strip shows the pattern (f).

5. Fit the strip into a ring mold and allow it to set (g). The mold shown here is used to make a Julianna cake (p. 473). For a free-standing chocolate ring, such as the one used for the candy box on page 639, spread the chocolate more thickly so the ring will be sturdier.



Chocolate Bows

For chocolate bows, cut strips of acetate to the desired size. Spread with tempered chocolate, either in a single color or in a pattern of two colors. Allow the chocolate to cloud and partially set, then bend into a teardrop shape and fasten the ends together with a paper clip. If necessary, pipe a little tempered chocolate with a paper cone into the joint between the ends of the chocolate to strengthen the seam. Let set until hardened.

Peel the acetate from the bows after they are completely set (a). Cut the ends to points so they will fit together on the box (b). To hold the bows in place, pipe a little tempered chocolate with a paper cone (c). Fit the bow in place. Hold steady until the chocolate sets (d).

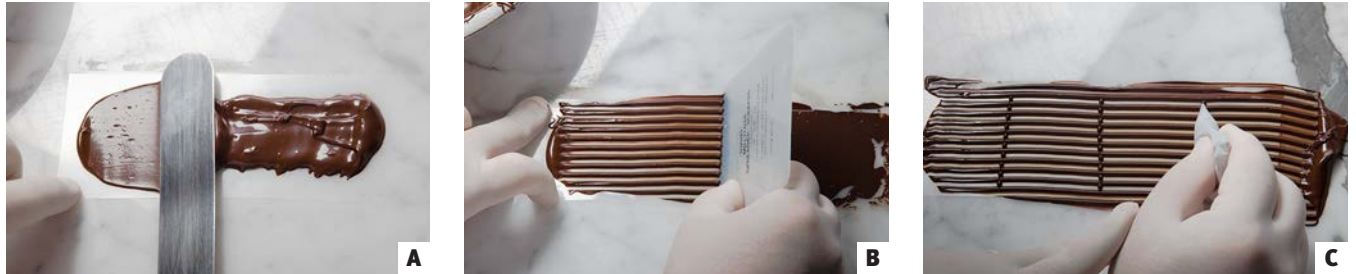


Chocolate strips made into teardrops (like bows, but larger) are used for plating presentations of desserts such as chocolate mousse. Place the teardrop on the plate and use a pastry bag to fill it with mousse.

Curled Strips

The chocolate strips in the previous sections are the basis for the following more advanced technique. This procedure begins with a strip of acetate coated with tempered chocolate, just as in the above technique, but uses an icing comb to create a lacy strip that is twisted into a decorative curl.

1. Spread a layer of chocolate onto an acetate strip (a).
2. Scrape along the length of the strip with an icing comb (b).
3. Using a paper cone filled with tempered chocolate, connect the lines of chocolate with small dots as shown (c).



4. Carefully lift the acetate strip and twist it into a spiral (d). Set it into a curved mold to hold it securely while the chocolate hardens.
5. When the chocolate is hard, peel off the acetate (e).
6. Trim off any excess to make the finished curl (f).



Chocolate Cigarettes and Shavings

Melted chocolate can be used for these decorations. Tempered chocolate may also be used but is not necessary. For cigarettes, spread the chocolate in a long strip on a slab of marble. Allow the chocolate to set. It should be completely set but not hard and brittle. If it becomes too hard, warm it slightly by rubbing it with the palm of your hand. Hold a metal scraper and push it forward so the chocolate curls up ahead of the metal edge (a).

For curls and shavings, score the strip of chocolate with the point of a knife (b) and then scrape up the curls with the knife (c).



Soft Strips and Fans

The chocolate strips described in this section are used for wrapping around cakes and pastries (see *Pralinette*, p. 373, and *Feuille d'Automne*, p. 466). Chocolate fans are used as decorations for various cakes and pastries. As in the case of chocolate strips, chocolate does not have to be

tempered for this procedure. Melted, untempered chocolate may be used, resulting in softer chocolate.

Heat a clean half-sheet pan at 325°F (160°C) for 4 minutes. Use a clean, unwarped pan, preferably one reserved for chocolate work only. The tray should be warm but not too hot to handle. (The purpose of warming the pan is to enable you to spread a thinner coat of chocolate; be careful, however, not to get the pan too hot. Some chefs prefer to use cold trays.) Turn the sheet upside down and spread melted chocolate in a thin, even layer on the bottom of the pan. Let stand until the chocolate looks cloudy, then refrigerate until set. Remove from the refrigerator and let warm to room temperature.

To make chocolate strips, push the scraper against the tray and, with the other hand, lift off the strip of chocolate as it is released by the scraper (a). Handle the strip of chocolate very lightly (b). After coating the sides of the cake (c), make more strips for the top (d). Arrange the strips on the top (e). Finish the cake with coiled strips (f), touching them as little as possible to prevent melting (g). (The cake pictured here is a *Feuille d'Automne*.)



A



B



C



D



E



F



G

To make chocolate fans, scrape the chocolate as for strips, except hold your thumb against one corner of the scraper so the strip bunches or gathers on one side (a). Carefully neaten the ruffles or folds of the fan as necessary (b).



A



B

Chocolate Petals

Like soft strips and fans, chocolate petals are made by scraping chocolate off a flat surface. In this case, however, the scraping tool is a round cutter. Following is the procedure:

1. Spread a thin layer of chocolate on a marble slab or other flat surface (a).
2. When the chocolate is set but not yet hard and brittle, hold the bottom edge of a round cutter as shown (b) and scrape up curled petals by pulling the cutter toward you.

3. The resulting cup-shaped petals (c) can be used for a variety of decorative purposes (see, for example, the Harlequin Roll on page 477).



Piping Chocolate

With the use of a paper cone, as described in Chapter 17, tempered chocolate can be made into decorations for cakes, pastries, and other desserts. It can be piped directly onto the dessert or onto parchment paper in small designs and left to harden. After they are set, the decorations can be removed from the paper and placed on the desserts. In this way, decorations can be made during slack hours and stored until needed.

Ordinary tempered chocolate is adequate for small, fine decorations, such as those for petits fours (see p. 480), but it is too thin for most other piped decorations. To make piping chocolate, add a very little warm simple syrup to the tempered chocolate. This will thicken the chocolate immediately. Stirring constantly, add more syrup, very slowly, until the chocolate is thinned to piping consistency.

Modeling Chocolate

Modeling chocolate is a thick paste that can be molded by hand to make a variety of shapes, just as you might use marzipan. Simply combine melted chocolate with half its weight of glucose (corn syrup) that has been warmed to the temperature of the chocolate. Mix them together well. Place them in an airtight container and let stand for an hour or more. Knead the mixture until it forms a workable paste.

Spraying Chocolate

You can use a standard paint sprayer to spray liquid chocolate. The sprayed chocolate creates a velvety coating on cakes, pastries, and showpieces.

To enable the chocolate to pass through the sprayer, thin it with melted cocoa butter. The usual ratio is two parts couverture to one part cocoa butter by weight.



A chocolate sprayer being used to stencil a pattern on a dessert.

CHOCOLATE TRUFFLES AND CONFECTIONS

CHOCOLATE TRUFFLES ARE named for their resemblance to black truffles, the aromatic underground fungus prized by gourmets.

In their simplest form, *chocolate truffles* are simply balls of chocolate ganache, the thick mixture of chocolate and cream introduced in Chapter 12. Ganache can be made with not only dark chocolate but also milk chocolate and white couverture. Many flavorings and other ingredients can be added to create a variety of confections. (Review the discussion of ganache on page 271.)

The simplest way of finishing truffles, and one of the most popular, is simply to coat the balls of ganache with cocoa powder. This technique is used in the first recipe in this section, Dark Chocolate Truffles.

For more elaborate presentations, the truffles may be coated with chocolate by dipping or molding.

Dipping Chocolates

For candy makers, the techniques for dipping and molding candies are basic. There are two basic procedures for dipping small items such as truffles, other candy centers, and nuts.

For the first method, place the items one at a time on the surface of the tempered chocolate. With a dipping fork, turn them over to cover them completely, then lift them out. Tap the fork holding the chocolate on the edge of the bowl to even the coating. Draw the fork holding the coated chocolate over the edge of the bowl to wipe off excess chocolate from the bottom of the fork, then set the item on a sheet of parchment. To mark the chocolate, touch the top of the item lightly with the dipping fork. Each kind of fork will leave its own distinctive pattern, so you can mark different flavors with different patterns. Let stand until hardened.

The second method is hand-dipping. To hand-dip plain truffles, pipe bulbs of ganache onto a parchment sheet (a). Using plastic gloves, hand-roll the truffles with a little cornstarch to round them (b). Still wearing plastic gloves, coat the truffles with a thin layer of tempered chocolate by hand-rolling them in tempered chocolate (c). Drop into a bowl of cocoa powder (d). Remove from the cocoa with a dipping fork and drop into a sieve to remove excess cocoa (e).



Molding Filled Chocolates

Small molds for individual candies are lined with chocolate using the same techniques as for larger molds, as discussed on page 638. Either of the two methods described there may be used for small candy molds, as well: (1) brush tempered chocolate onto the inside of the molds

to coat them in an even layer; or (2) pour tempered chocolate into the molds to fill, then pour the chocolate out, leaving a layer coating the molds.

The procedure described in this section is an example of the second technique.

Before filling the molds, you can decorate them using any of several techniques. For example:

- Spray the inside of the molds with colored cocoa butter (illustrated in the following procedure).
- Spatter streaks of a contrasting color of tempered chocolate into the molds. Let set before coating the molds.
- With a paper cone, pipe fine lines of a contrasting color of tempered chocolate into the molds and let set.
- Brush the insides of the molds very lightly with a contrasting color of tempered chocolate to create a marbled or stippled effect. Let set.



Brushing the inside of the mold.

After each of these techniques, you must scrape or wipe any residue chocolate from the flat surface of the mold before continuing with the next steps.

The entire procedure is as follows:

1. Carefully wipe the insides of the molds with cheesecloth or cotton wool to make sure they are clean and smooth.
2. Spray the insides of the molds lightly with colored cocoa butter (a).
3. Wipe off the flat surface of the mold with a warm, dry towel to remove all cocoa butter that is not inside the molds.
4. Fill the molds with tempered chocolate (b). Using an offset palette knife, spread the chocolate to make sure all molds are filled (c).
5. Scrape off excess chocolate from the flat surface of the mold (d).
6. Tap the mold sharply with the handle of the scraper to remove any air bubbles that might mar the appearance of the finished chocolates (e).
7. Turn the mold over and pour out the chocolate into your bowl of tempered chocolate, leaving a thin layer coating the molds (f).



A



B



C



D



E



F



8. With a scraper, once again scrape off excess chocolate from the surface of the mold (g).
9. Place a piece of parchment on a flat work surface and place the mold upside down on the parchment. This allows any excess chocolate to run out rather than settle in the bottoms of the molds. Before the chocolate sets, lift the mold off the parchment and again scrape off the flat surface.
10. Let the mold stand in a cool place until the chocolate has hardened.
11. Using a paper cone or a pastry bag with a fine tip, fill the molds with ganache or other desired filling (h). Do not fill too full, but leave room for a final cap of chocolate. Filling too full makes it impossible to seal the chocolates properly.
12. Let stand until the ganache has firmed up. Depending on the filling, this may take as long as 24 hours. If necessary, cover the molds lightly with a sheet of parchment to protect them from contamination. Do not wrap tightly.
13. Spread tempered chocolate over the filling to seal the chocolates (i).
14. Place a piece of acetate on the mold (j).
15. Pass over the acetate with a rolling pin to flatten the bottoms of the chocolates and to remove excess chocolate from the base (k).
16. Allow to harden completely. (Unless the work area is very cool, you may need to chill the chocolates to harden them.) Unmold the finished chocolates (l) by turning the molds over onto a piece of parchment and tapping gently. The chocolates should fall out easily.



KEY POINTS TO REVIEW

- What techniques are used to mold chocolate?
- What procedures are used to make simple chocolate decorations: cutouts, strips, cigarettes, curls, and fans?
- What techniques are used to make chocolate truffles and to coat them with chocolate by dipping or molding?

DARK CHOCOLATE TRUFFLES

Yield: about 75 truffles, 1/3 oz (10 g) each

Ingredients	U.S.	Metric	PROCEDURE
Ganache			
Heavy cream	7 oz	225 g	<ol style="list-style-type: none"> 1. Heat the cream and vanilla to a simmer. 2. Pour over the chopped chocolate in a bowl. Stir until the chocolate is completely melted and blended in. Cool the mixture until it is just slightly warm to the touch. 3. Stir in the butter until it is melted and completely blended in. 4. Let the mixture stand until it starts to thicken, then put it in a pastry bag fitted with a medium plain tip. 5. Pipe the mixture into small mounds, about 2 tsp (10 mL) each, on sheets of parchment paper. Chill until firm. 6. Wearing disposable gloves, one by one, roll the mounds between the palms of the hands to round the pieces of ganache; drop them into a bowl of cocoa powder. 7. Remove the truffles from the cocoa and shake in a sieve to remove excess cocoa.
Vanilla extract	1/2 tsp	2.5 g	
Dark chocolate couverture, chopped	1 lb	500 g	
Butter	2 oz	60 g	
Coating			
Cocoa powder	as needed	as needed	

BANANA TRUFFLES

Yield: about 120 truffles, 1/3 oz (9 g) each

Ingredients	U.S.	Metric	PROCEDURE
Ganache centers			
Banana pulp	5 oz	150 g	<ol style="list-style-type: none"> 1. Mash the bananas with the rum until smooth. 2. Heat the cream, butter, and honey to the boiling point. Remove from heat. 3. Melt the milk and dark chocolates and stir into the cream mixture. 4. Mix in the bananas. Let stand until completely cold. 5. Prepare hard (polycarbonate) chocolate molds by polishing them with cheesecloth or cotton wool. 6. Brush the inside of the molds very lightly with tempered dark chocolate to create a marbled effect. Allow to set. 7. Coat the molds with tempered white couverture, as described in the procedure on page 647, steps 4–10. 8. Put the ganache mixture into a piping bag fitted with a small plain tip and fill the molds three-quarters full. 9. Seal and finish the molds as described in the procedure on page 648, steps 13–16.
Rum	4 tsp	20 g	
Heavy cream	3.33 oz	100 g	
Butter	4 tsp	20 g	
Honey	3.33 oz	100 g	
Milk chocolate couverture	4 oz	125 g	
Dark chocolate	3.33 oz	100 g	
Coating (see Note)			
Dark chocolate couverture, tempered	7 oz	200 g	
White couverture, tempered	1 lb 5 oz	600 g	
<p>NOTE: The quantity of chocolate needed for the coating is approximate. Because you need enough for the molding procedure, you must temper more chocolate than you will use.</p>			

ORANGE TRUFFLES

Yield: about 125 truffles, 1/3 oz (9 g) each

Ingredients	U.S.	Metric	PROCEDURE
Heavy cream	4 oz	120 g	
Orange juice, strained to remove all pulp	1 oz	30 g	
Orange liqueur	3 oz	90 g	
Butter	2 oz	60 g	
Egg yolks	1.67 oz	50 g	
Sugar	1.67 oz	50 g	
Dark chocolate, chopped	7 oz	215 g	
Coating (see <i>Note</i>)			
Dark chocolate couverture, tempered	1 lb 4 oz	600 g	
<p>NOTE: The quantity of chocolate needed for the coating is approximate. Because you need enough for the molding procedure, you must temper more chocolate than you will use.</p>			

ROCHER WITH ALMONDS

For large-quantity measurements, see page 740.

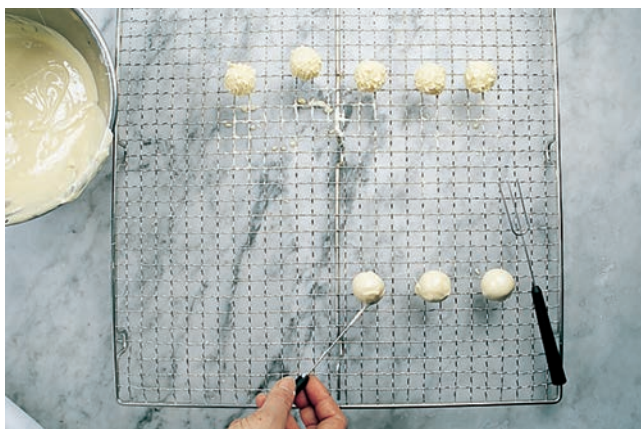
Ingredients	U.S.	Metric	PROCEDURE
Dark chocolate	4 oz	100 g	
Praline paste	6 oz	150 g	
Ice cream wafers (pailletine), finely crushed	2 oz	50 g	
Dark chocolate	6 oz	150 g	
Almonds, toasted and chopped	1 oz	25 g	
Total weight:	1 lb 3 oz	475 g	

LEMON TRUFFLES

Yield: about 110 truffles, ½ oz (14 g) each

Ingredients	U.S.	Metric
Ganache centers		
Milk	4 oz	125 g
Heavy cream	4 oz	125 g
Glucose	1.67 oz	50 g
White couverture, chopped	1 lb	500 g
Lemon juice	3.25 oz	100 g
Coating (see Note)		
White couverture, tempered	1 lb 10 oz	800 g

NOTE: The quantity of chocolate needed for the coating is approximate. Because you need enough for the molding and dipping procedure, you must temper more chocolate than you will use.



PROCEDURE

1. Heat the milk, cream, and glucose until the mixture is warm and the glucose is dissolved.
2. Add the white couverture and stir until it is melted and uniformly blended with the cream mixture.
3. Stir in the lemon juice.
4. Let the mixture cool completely. Place the ganache in a pastry bag fitted with a small, plain tip.
5. Prepare hemispherical polycarbonate truffle molds by polishing them with cheesecloth or cotton wool.
6. Coat the insides of the molds with tempered white chocolate as described in the procedure on page 647, steps 4–10.
7. Fill to the top with the ganache filling. Unmold. For each truffle, press 2 half-spheres together to make a round ball.
8. Dip in tempered white chocolate, remove with a dipping fork, and place on a wire rack. To create a textured surface, allow to set a few moments, then roll along the rack to give a spiked coating to the truffle. Allow to harden completely before removing from the rack.

ALTERNATIVE PROCEDURE

Use ready-made chocolate shells. Fill them using a pastry bag with a small plain tip and seal the opening by covering it with tempered couverture using a paper cone. Dip as in the basic procedure above.



MUSCADINES

Yield: about 45 truffles, 1/3 oz (10 g) each

Ingredients	U.S.	Metric	PROCEDURE
Ganache			
Milk chocolate couverture	6.75 oz	200 g	1. Melt the first quantity of chocolate and stir in the praline paste.
Praline paste	1 oz	30 g	2. Add the water and stir until evenly mixed.
Water, boiling	1 oz	30 g	3. Mix in the butter and liqueur. Chill over an ice-water bath until the mixture is thick enough to hold its shape.
Butter, softened	4 tsp	20 g	4. Place in a piping bag fitted with a large star tip (approximately 1/2 in./1 cm wide at the opening). Pipe long logs of the mixture onto a baking sheet lined with parchment paper. Cut the logs into 1 1/2-in. (4-cm) lengths. Chill.
Orange liqueur, such as Cointreau	1 oz	30 g	5. Sift confectioners' sugar onto a tray or sheet pan until it is about 1/2 in. (1 cm) deep.
Coating (see Note)			6. Temper the milk chocolate and stir in the cocoa butter.
Confectioners' sugar	as needed	as needed	7. Dip each piece of chilled ganache into the chocolate, remove with a dipping fork, and tap off the excess chocolate. Place in the confectioners' sugar. Shake the tray to cover the chocolates in sugar. Allow to set before removing.
Milk chocolate couverture	8 oz	250 g	
Cocoa butter, melted	3.25 oz	100 g	
<p>NOTE: The quantity of chocolate needed for the coating is approximate. Because you need enough for the molding and dipping procedure, you must temper more chocolate than you will use.</p>			

TERMS FOR REVIEW

chocolate	conching	dark couverture	bloom
cocoa bean	couverture	milk chocolate couverture	tablage
cocoa butter	coating chocolate	white couverture	seeding
chocolate liquor	baking chocolate	dark chocolate	chocolate truffle
cocoa mass	confectioners' chocolate	tempering	



QUESTIONS FOR DISCUSSION

1. Why is it necessary to temper chocolate for making chocolate molds?
2. Briefly explain two methods for tempering chocolate.
3. If tempered chocolate is at the correct temperature for molding but is too thick, how should you thin it?
4. Why is *white chocolate* an inaccurate term?
5. Why are chocolate molds polished with cotton wool before use?
6. Describe one procedure for molding chocolate eggs.
7. Describe five techniques for making decorative patterns using two colors of chocolate for cutouts.
8. Describe the procedure for making chocolate fans, starting with melted chocolate.
9. What are chocolate truffles? Give as complete an answer as you can, describing various types and forms.