







CHOCOLATE BASICS

TEMPER, MOULD, MASTER

PREVIEW ONLY

CALLEBAUT®
CHOCOLATE ACADEMY

COURSE AGENDA

**Upon purchasing the course you will get access to the entire workbook.
In this preview, we give you a sneak peek of theory, equipment and recipes.**

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PREVIEW

THEORY

TEMPERING ON THE TABLETOP

Tempering on the Tabletop (Lesson 0.4)

Pre-crystallisation requires three things:

- Time
- Temperature
- Movement

We heat the chocolate, transfer it to a cold surface and spend some time moving the chocolate on the surface, reducing its temperature. Then we warm the chocolate slightly to "loosen" the crystal structure and bring it to a good working temperature. A combination of time, temperature, and movement alters the structure of the fat as it solidifies, creating the desired crystal structure.

The Pre-Crystallisation Process

To begin the process, we need to warm the chocolate. This can be done in a microwave, a warming cabinet, or by another method. In order to start fresh, with fully and entirely melted cocoa butter, we'll need to warm our chocolate to between 40 and 45°C, generally speaking.

Dark chocolate can be warmed to a temperature of up to 50°C. Chocolates that contain milk, such as milk, white, Gold, or Ruby chocolate, should be heated to a lower temperature to avoid burning the milk solids. Heat these chocolates to no more than 42°C.

The cocoa butter will begin to crystallise again at around 27°C. This is why using a thermometer is so important. It's like using a GPS app when we drive - knowing the temperature of our chocolate helps us determine where we are in the pre-crystallisation process.

It's also important not to allow the chocolate to get too cold. Checking the temperature regularly will let us know when to stop moving the chocolate on the table. If chocolate gets too cold during the pre-crystallisation, it will be too thick. It will be what we refer to as over-crystallised. The coldest you can allow the chocolate to get without worrying about over-crystallisation is 27°C. In fact, most manufacturers will instruct users to cool their chocolate to 28°C, allowing for a small margin of error.

Once we've cooled the chocolate, it's full of solidified fat crystals. If we are not careful, these crystals will clump together, and we will not achieve the smooth, shiny end product we are aiming for. So we need, now, to warm the chocolate again, but just a little. For dark chocolates, rewarm the crystallised chocolate to 31-32°C; for milk and white chocolate, heat the crystallised chocolate to 29-30°C.



When we have executed this process successfully, the chocolate will continue to harden as it cools and will be shiny, with good flavour and texture. It will contract as it cools, allowing us to unmould tablets and similar moulded products easily.

It's clear why a thermometer is the most important tool for successful crystallisation. However, to return to our GPS comparison, if your driving app tells you to make a right turn in a spot where you cannot make a right turn, don't do it! Tempering is the same - even our best tools need to be used thoughtfully. Imagine that we pre-crystallise chocolate in our workshop one morning with great results. The next day, it's a little warmer in the shop - 26°C - and our table is not as cold as it was yesterday. We might spend 30 minutes moving the chocolate on the table to cool it down and even succeed in bringing it to the required temperature, but because the tabletop was not cold enough to create the right fat crystals, our pre-crystallisation attempt will have failed. In this case, we met only two of our three requirements: we spent sufficient time moving the chocolate, but our table was not at the right temperature (20°C). We need to meet all three criteria to achieve successful pre-crystallisation.

A Note on Surfaces

You may have noticed that many chocolatiers prefer a granite or marble surface when working with chocolate. Why is this? Granite and marble maintain their temperature very well. Suppose you pour warm chocolate onto a stainless steel tabletop, for example. In that case, the temperature of the table immediately becomes warmer and may no longer provide the cold point necessary for creating the right fat crystals in your chocolate. Granite and marble, however, will maintain their cool temperature, making it possible to successfully pre-crystallise the chocolate.

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EQUIPMENT LIST

Most of the tools our chefs use in the videos are standard equipment in any kitchen. However, there are a few specialty items that you may wish to seek out before beginning to recreate the recipes. It is not necessary to have each of the tools listed here, and you may adapt your technique to the tools you have, but you will find that these items make the job of perfecting the recipes much easier.

Tablets: Polycarbonate tablet moulds

Swiss Rocks: Rock dispenser or 3 cm silicone moulds

Lemon and Mint Tea Moulded Bonbons: Semi-sphere chocolate moulds of 3 cm diameter

Crunchy Gianduja Framed Bonbons: Frame measuring 18 x 36 cm and 0.8 cm deep

Chocolate Truffles with Rum: 13 mm diameter nozzle

Caramelised Hazelnut Praliné and Milk Chocolate Spread: 8 jars with lids, 240 grams each

Hollow Chocolate Figures: Moulds with the desired shape

Standard Kitchen Equipment

- ✓ Baking parchment
- ✓ Brush
- ✓ Chopping boards
- ✓ Cling film
- ✓ Convection oven
- ✓ Food processor
- ✓ Freezer (-20°C) or Blast freezer
- ✓ Gloves
- ✓ Guitar sheets
- ✓ Guitar cutter
- ✓ Hand blender
- ✓ Induction burner
- ✓ Knives
- ✓ Micro scale
- ✓ Microwave
- ✓ Offset palette knife
- ✓ Piping bags
- ✓ Piping tips
- ✓ Probe thermometer
- ✓ Rasp-style zester
- ✓ Refrigerator
- ✓ Rolling pin
- ✓ Scale
- ✓ Scissors
- ✓ Sieves
- ✓ Silicone baking mats
- ✓ Silicone baking mats, perforated
- ✓ Spatulas
- ✓ Spoons
- ✓ Stand mixer
- ✓ Strainers
- ✓ Trays 60 x 40 cm
- ✓ Whisks

Optional

- ✓ Air gun
- ✓ Chocolate grinder
- ✓ Chocolate enrobing belt for tempering machines
- ✓ Chocolate fridge (16°C)
- ✓ Chocolate machines for tempering
- ✓ Heated vibrating table for the chocolate tempering machine
- ✓ Infrared thermometer

Specific to This Course, Required

- ✓ Flat plaque, 60 x 40 cm, Methacrylate or similar
- ✓ Refractometer

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PREVIEW

Get a taste of our "Chocolate basics" with this preview featuring the "Lemon and Mint Moulded Bonbon" recipe.

LEMON AND MINT TEA MOULDED BONBON



Yield: Approximately 96 half-sphere bonbons
Equipment: Polycarbonate chocolate moulds: half-spheres of 3 cm diameter

Component 1: **Lemon Jelly**

Ingredient	Qty (g)	Qty (%)
Lemon juice	200 g	38.17%
Water	50 g	9.54%
Yellow pectin	3 g	0.57%
Sucrose #1	18 g	3.44%
Glucose syrup DE44	40 g	7.63%
Sucrose #2	205 g	39.12%
Lemon zest	8 g	1.53%

Yield: 524 g

Method

1. Before you begin, finely chop the lemon zest.
2. Heat the lemon juice combined with the water.
3. Combine pectin and sugar #1.
4. Whisk the pectin mixture into the warm liquid.
5. Bring the mixture to a boil, then add the glucose and sugar #2.
6. Cook to about 75° Brix and reserve.
7. Pour the gel into a shallow container and allow it to cool and set.
8. Pass through a coarse sieve to break down the gel structure.
9. Stir in the lemon zest.
10. Cover the jelly with plastic wrap touching the surface, and set it aside until you are ready to assemble the bonbons.

Component 2: **Mint Tea Infusion**

Ingredient	Qty (g)	Qty (%)
Water	375 g	88.24%
Mint tea	45 g	10.59%
Dried peppermint leaves	5 g	1.18%

Method

1. Before you begin, grind the dried peppermint leaves to a powder in a coffee or spice grinder.
2. Bring the water to a boil and add the tea and dried peppermint
3. Cover and steep for 4 minutes.
4. Strain and reserve 220 g for the ganache recipe.

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Component 3: **Mint Tea and Milk Chocolate Ganache**

Ingredient	Qty (g)	Qty (%)
Mint Tea Infusion	220 g	17.42%
Invert sugar	60 g	4.75%
Glucose syrup DE44	52 g	4.12%
Dextrose	82 g	6.49%
Salt	2 g	0.16%
Callebaut Velvet Ecuador Milk Chocolate 39%	712 g	56.37%
Clarified butter	85 g	6.73%
Callebaut Cocoa Butter	50 g	3.96%

Method

1. Dissolve the sugars and salt in the infusion.
2. Pour the warm syrup over the couverture. Use a spatula to combine and emulsify the ingredients.
3. Add the fats and emulsify with a hand blender.
4. Pre-crystallise the ganache by transferring it to a shallow container and cooling it to 29-30°C.
5. Transfer the ganache to a piping bag and set aside until ready to assemble the bonbons.

Yield: 1903 g

Component 4: **Dark Chocolate Paint**

Ingredient	Qty (g)	Qty (%)
Callebaut Rustic Fleur de Cao Dark Chocolate 70%	375 g	75%
Callebaut Cocoa Butter	125 g	25%

Method

1. Melt the dark chocolate and cocoa butter separately, then combine them.
2. Mix well to emulsify.

Yield: 500 g



CALLEBAUT RUSTIC EXPERIENCE FLEUR DE CAO DARK CHOCOLATE 70%

Bittersweet-and-Sour with Warm Spiced, Floral and Yellow Fruits Notes.

View product



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PREVIEW

TROUBLESHOOTING

PROBLEM	REASON	SOLUTION
When the tablet is unmoulded, air bubbles are visible on the surface.	The tablet moulds have not been vibrated after filling to remove air.	Vibrate the tablet moulds in the machine or on a table after filling to remove air.
There are small, non-shiny marks on the surface of a chocolate tablet.	The tablet mould was cold when the tablet was made. Or the tablet has been removed from the mould prematurely.	Preheat the moulds to 26°C before filling them with chocolate. Let the tablets crystallise in the refrigerator for a few minutes, then for a bit longer at room temperature. Before unmoulding, make sure the tablet has completely contracted, especially the centre, as it is the last part to contract.
For Swiss rocks, when adding chocolate to dry products such as almonds or cereals, the chocolate crystallises very quickly, leaving no time to dispense or shape it.	The dry products were cold, and the chocolate set too quickly, making it impossible to dose the rocks into the moulds.	Ensure the chocolate and cocoa butter are pre-crystallised at 32/33°C and that the dry ingredients are at around 24°C. While pouring the rocks into the moulds, ensure the mixture remains at 31°C by heating the mixture.
Once the snack bar has been coated, the chocolate layer is too thick.	The product is cold, or there was insufficient air flow and vibration.	Check that the snack bar or bonbon is at 20 °C. Increase the airflow and vibration.
Moulded bonbons are dull, not shiny.	Incorrect pre-crystallisation of the chocolate paint used to decorate the moulds. / The temperature of the mould is too cold. / The mould is dirty.	Pre-crystallise the paint correctly. / Verify that the mould is at a minimum of 20°C before painting. / Ensure that the mould is very clean.
When we seal the moulded bonbons, we can't seal the mould properly with a thin and regular layer of chocolate.	Too much ganache or praline has been dispensed, preventing proper sealing.	Dosify the ganache or praline, keeping 1 mm of space for the final chocolate layer that will seal the product.
Dosing a reduction, syrup, ganache, or any filling causes the shell to become deformed.	The temperature of the filling is too high.	Don't allow the temperature of a filling to exceed 31°C.

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PREVIEW

OUR CHEF'S PRODUCT RECOMMENDATIONS



CHOCOLATE

Callebaut Selection



Callebaut W2 White Chocolate 28%
2.5 kg
View product



Callebaut Gold Chocolate 30%
2.5 kg
View product



Callebaut Ruby Chocolate 33%
2.5 kg
View product



Callebaut Power 41 Milk Chocolate 41%
2.5 kg
View product



Callebaut 823 Milk Chocolate 33%
2.5 kg
View product



Callebaut 70-30-38 Extra Bitter Dark Chocolate 70%
2.5 kg
View product

Callebaut Origin Collection

Blend of Origins



Callebaut Rustic Experience Fleur de Cao Dark Chocolate 70%
1 kg
View product

Single Origin



Callebaut Velvet Experience Ecuador Milk Chocolate 39%
1 kg
View product

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OUR CHEF'S PRODUCT RECOMMENDATIONS



COCOA PRODUCTS



Callebaut Cocoa Nibs
0.8 kg
View product



Callebaut Cocoa Butter
3 kg
View product



Callebaut Mycryo
0.6 kg
View product

COCOA POWDER



Callebaut Botanical Experience Extra Brute Cocoa Powder
View product

NUT PRODUCTS



Callebaut Hazelnut Praliné 50%
5 kg
View product

INCLUSIONS



Callebaut Pailleté Feuilletine
2.5 kg
View product

DECORATIONS



Callebaut Ruby Chocolate Crispearls
0.8 kg
View product

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BONBON MASTERCLASS

THE SCIENCE OF CRAFTING PERFECT CHOCOLATES

BY RAMON MORATÓ

In this class you will learn

- Shelf life, storage, and production essentials for perfect bonbons.
- Signature techniques—from painting and enrobing to framing—and learn how to achieve stunning, professional-quality finishes.
- How to craft a 5-piece bonbon collection with diverse flavours and chocolate textures.

If you want to become the master of taste, this is where you begin.

JOIN THE CLASS!

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