



Culinary Institute
of America

Foaming Method, Frozen Elements, Yeasted Lamination, & Choux

Day 3





Learning Objectives

- Explain the foaming method used in cake production.
- Describe considerations for handling and incorporating nuts.
- Analyze challenges of working with frozen elements in a hot kitchen.
- Explain the role of yeast and gluten in bread making.
- Describe the pre-cooked method (pâte à choux).
- Prepare a range of desserts using standardized recipes with accuracy and consistency.

Foaming Method

- Eggs or egg whites are whipped to trap air and create volume
- Mechanical leavening = delicate structure
- Used for chiffon, sponge cakes, angel food cake, dacquoise, jaconde, etc.



Foaming Method

- 1. Prepare equipment:** ensure all equipment is clean and dry
- 2. Beat the eggs:** whip eggs on medium speed to incorporate air
- 3. Foam formation:** slowly add sugar while continuing to beat until it reaches desired peak

Note: Texture should be light and fluffy, and the foam should hold its shape



Foaming Method



Note: Handle carefully to maintain foam structure and avoid deflation

- 4. Fold in dry ingredients:** gently fold in sifted dry ingredients using spatula
- 5. Add melted fat:** gently fold into the batter without deflating the foam
- 6. Bake immediately:** pour into pans and bake immediately to maintain volume created by the whipped eggs

Foaming Method: **Folding Technique**

- 12 o'clock to 6 o'clock, turn the bowl
- It's important to take what is on the bottom and put it on top (See Chef demo!)



Foaming Method: **Tips**

- You must have all of your MEP ready to go – Meringue does not wait for you
- Work quickly – off the mixer and into the oven as quickly as possible
- Long even strokes when spreading cake in sheets – be careful not to knock all of the air out
- Thin flat cakes like jaconde and dacquoise bake quickly at a high temperature – don't over bake



Side Note: Nuts

When planning to toast nuts please take great care:

- Always try to toast nuts **WHOLE** and then chop them
 - Even size/ shape = even toasting
- Nuts are expensive!
 - You can always put them back in the oven to toast further
 - Burnt nuts = very expensive garbage



Frozen Elements in a Hot Kitchen?

- Yes! It is possible!
 - You don't need to argue with the food runners while the ice cream melts on the plate
- Semifreddo and Parfait are frozen mousses that are pulled from the freezer and plated
- By the time they reach the guest they are softening and ready to eat



Semifreddo

- Italian in origin
- Literally "half-frozen"
- soft, airy, mousse-like dessert usually made with **meringue** or custard, cream, and flavorings
- Commonly made in a loaf pan, frozen for 6+ hours, and sliced to serve



Parfait



- French in origin
- A "perfect" frozen dessert made of **pâte à bombe**, whipped cream, and flavors like fruits or liqueurs
- Generally richer than a semifreddo
- Can be frozen in molds or individual glasses

Souffle Glace

- Often called "frozen soufflé" or "ice cream soufflé"
- A cold, light dessert frequently made with an egg yolk custard or meringue, fruit purée, and heavy cream
- Often prepared in small ramekins with a paper collar to mimic the look of a puffed, baked soufflé





Fried Yeasted Dough



12 Steps in Breadmaking

1. Scaling

2. Mixing

3. Bulk fermentation

4. Folding (aka punching down)

5. Dividing

6. Pre-shaping (aka rounding)

7. Benching (resting time)

8. Shaping (final shape)

9. Final Proofing

10. Scoring (if applicable)

11. Baking

12. Cooling & Storing

12 Steps: Explained



Scaling: Accurately measure ingredients by weight. Sets the stage for proper gluten development.



Mixing: Combine the ingredients to form a cohesive dough (clean up stage). Mixing activates gluten formation.



Bulk Fermentation: Dough rests and rises as yeast produces CO₂ and alcohol, beginning the development of flavor and gluten structure of the bread.



Folding: Deflates gas, redistributes yeast and nutrients, expelling CO₂ and allowing oxygen into dough. Folding strengthens gluten and balances temperature.

Tip: Dip your hands in water before folding to prevent excessive sticking

12 Steps: Explained



Dividing: Dough is portioned into equal weights to ensure even baking and uniform products. Should be done quickly and avoid any unnecessary cutting of numerous small pieces.



Pre-Shaping: The first step toward creating the desired shape for the dough by loosely shaping dough to relax gluten. This prepares dough for final shaping and gives the dough a smooth finish, avoiding exposed edges that dry out faster.



Bench Rest: After pre-shaping, the dough rests on the bench to keep fermenting. This is a short rest (10-20 min) to allow gluten to relax before final shaping. Dough should be kept covered to avoid a skin.

12 Steps: Explained



Shaping: Proper shaping ensures even rise and nice final appearance. It is important to expel some but not all the gasses.



Final Proofing: Dough must be kept covered or placed in a humidity-controlled proof box to prevent a skin from forming. The ideal proof box temp is 75-90°F with 80-90% humidity. The time proofing will vary greatly depending on ingredients, ratios, and mixing temperatures.



Frying: To fry donuts, heat 2–3 inches of fryer oil in a heavy-bottomed pot 350°F – 375°F. Fry proofed dough in batches for 1–2 minutes per side until golden brown, turning once. Drain on a wire and then glaze or sugar while warm.

Tip: Oil temperature needs to be closely monitored with a thermometer. Be sure thermometer is set to Fahrenheit

Tips for Successful Fried Dough

- Oil temperature is everything
 - Fry at 350 - 375°F
- Proof properly before frying
 - Your doughnuts should be puffy, airy and light to touch
- Use enough oil
 - They must float freely!
- Flip only once
- Drain like a professional





Pâte à Choux



Pâte à Choux

Pâte à Choux (pronounced pat-ah-shoo) is a classic French pastry dough used to make a variety of light, airy desserts

- Eclairs
- Cream puffs
- Profiteroles
- Gougeres
- St. Honoré cake
- Croquembouche



Precooked Method



- We pre-gelatinize the starch in the flour, creating a hollow center
 - Gluten development
- **2 : 1 : 1 : 2 ratio**
 - 2: liquid
 - 1: butter
 - 1: flour
 - 2: eggs

Pâte à Choux Method

1. Bring water, butter and salt to boil in a saucepan and remove from heat
2. Add sifted bread flour all at once, stir to incorporate, and return to heat
3. Cook the paste; The dough should form a mass.
 - There should be a thin film on the bottom of the pan (fond)



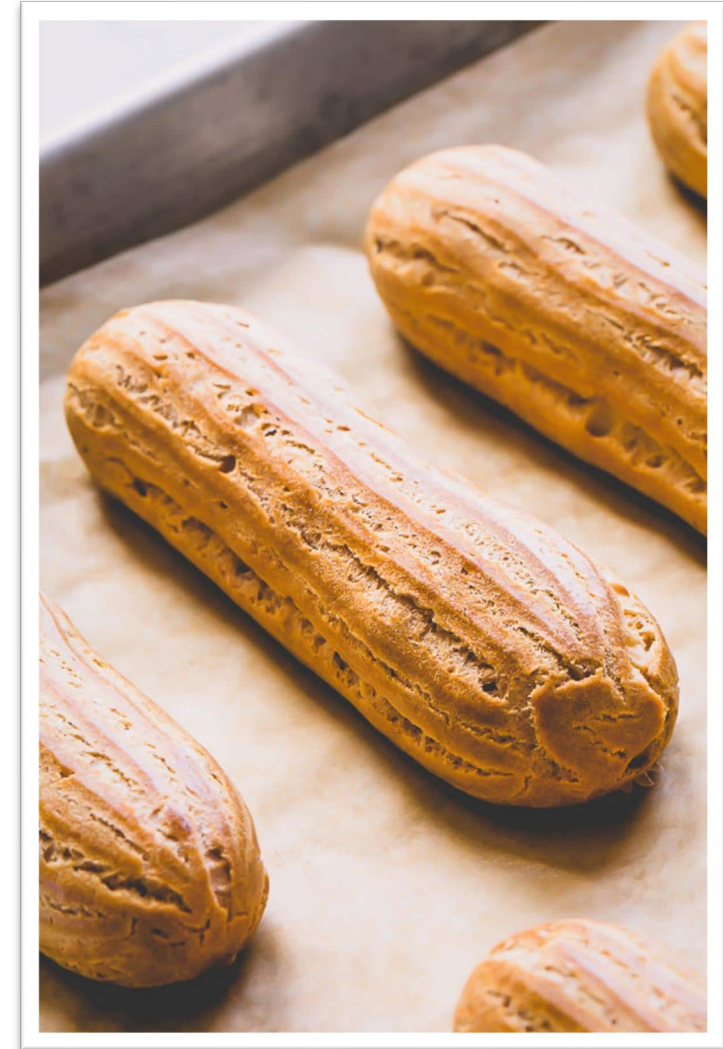
Pâte à Choux Method

4. Put the dough into a mixer with paddle attachment and allow to mix for a short time to cool
5. Slowly add the eggs in several additions
6. Before the last of the eggs are added, check the dough's consistency



Pâte à Choux Method

7. Pipe the dough into the desired shapes (if the dough is still warm and hard to handle, chill it in fridge for a half hour)
8. Brush on egg wash (if needed)
9. Bake at 360°-375°F until completely golden brown with no yellow visible



Pre-Cooked Method: **Key Points**

- Liquid should be boiled to evenly distribute fat
- Flour mixture is cooked long enough to gelatinize starch (skin (fond) at the bottom of the pot)
- Eggs need to be added in intervals, stopping when a smooth shiny paste is obtained
- Choux should be baked in a high temperature oven (mechanical leavening relies on oven spring)
- It is ready when the color is an even brown on the top surface, and slightly less along the sides. If choux is still yellow on sides, it is not done. Choux should not be wet inside.

Storing Pâte à Choux

Raw choux dough:

- Can be refrigerated for up to 2 days either stored in a covered container or piped into shape
- Can be frozen piped on tray, then transferred to container once solid



Baked choux shells:

- Can be frozen for 1 week or more
- Store in airtight container or bag
- Reheat in a low oven to refresh before using



Finishing Pâte à Choux

Common fillings:

- Pastry cream
- Chantilly cream
- Mousse
- Ice cream

Popular toppings:

- Powdered sugar
- Chocolate ganache
- Caramel
- Fondant icing



Daily Plan: **Chef Demos**

- Coconut Dacquoise
- Lemon Curd

Daily Plan: Production Assignments

1

Team

- Yuzu Semifreddo
- Le Nage
- Macadamia Praline Paste
- Macadamia Crunch
- Coconut Dacquoise

2

Team

- Dulce de Leche Cheesecake (Make and Bake)
- Milk Chocolate Sauce
- Passionfruit Fluid Gel
- Passionfruit Curd
- Dulce de Leche Whipped Ganache

3

Team

- Beignet Dough
- Dark Chocolate Sauce
- Salted Caramel Sauce
- Crème Brulée
- Lemon Flan

4

Team

- Ube Panna Cotta
- Calamansi Curd
- Banana Jam
- White Chocolate Whipped Ganache
- Rice Crispy Deco



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Any Questions?