



Culinary Institute  
of America

# Cooking Principles I

Day One: Pan Frying, Deep-Fat  
Frying



# Learning Objectives

- Explain standard breading and batter mise en place.
- List the equipment necessary for pan-frying and deep frying.
- Identify the correct fats and amounts used to pan fry and deep fry.
- Identify foods that are appropriate for pan-frying and/or deep-frying.
- Execute pan-frying and deep-frying methods.
- Identify types of sauces that may accompany pan-fried and deep-fried items.
- Discuss proper oil maintenance.

# Key Terms

- Anglaise
- Basket Method
- Batter
- Blanching
- Breading Agent
- Deep Fry
- Double Basket Method
- Dredge
- Dry-Heat Method
- Egg Wash
- Française
- Pan Fry
- Recovery Time
- Smoking Point
- Standard Breading Procedure
- Swimming Method
- Tempura

# Pan Frying and Deep Frying



- Use neutral oils/ fats with high smoke points
- Items usually coated/ breaded
- Sauces (often mayo based) made/ served separately



# Frying: Equipment



- Thermometer
- Tongs, kitchen fork,
- Skimmer
- Spider
- Setup to blot or drain items
- Holding/ finishing pans
- Heated plates

# Frying: Equipment

## Pan-Frying

- Heavy pans with straight sides, flat bottoms
- Tilting skillet

## Deep-Fat Frying

- Thermostat-controlled deep-fat fryer



# Pan Frying and Deep-Fat Frying

- **Fish and Seafood:** bones, skins, shells removed
- **Poultry:** skin, bones removed (except fried chicken)
- **Pork, Veal, Beef:** trimmed of fat and gristle
- **Beef and Calf Liver:** pan-frying only
- **Vegetables:** High moisture percentage
- **Other Foods:** croquettes, crab cakes, fritters

# Frying: Coating

- Creates a barrier between the fat/ oil
- Seals in juices
- Contributes to flavor
- Provides textural contrast
- Creates a moist interior, golden brown, crisp yet tender exterior



# Frying Coatings

## Breading

- Standard/ Anglaise
  - Flour, egg wash, breadcrumbs
- Française
  - Flour

## Batter

- Plain
- Beer
- Tempura



# Frying: Fats and Oils

- High smoke point
- Neutral flavor
- Vegetable and seed oils
- Rendered animal fats



# Pan-Frying

- Uses more fat than sautéing and stir frying
- Less fat than deep-frying
- Different flavor than sautéed items because only exterior crust is browned

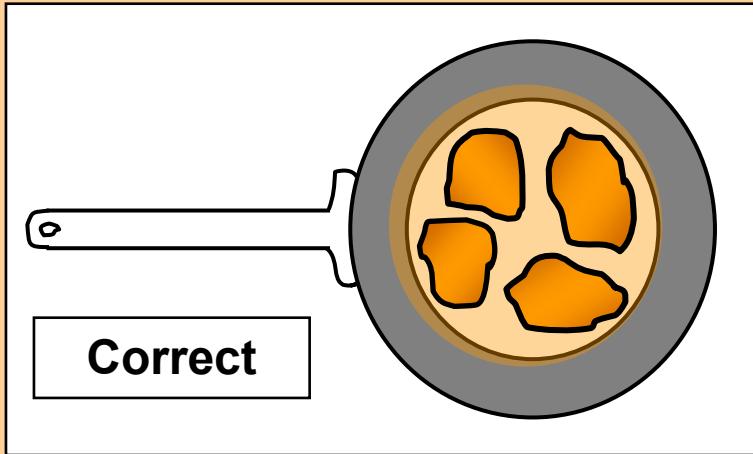


# Pan Frying

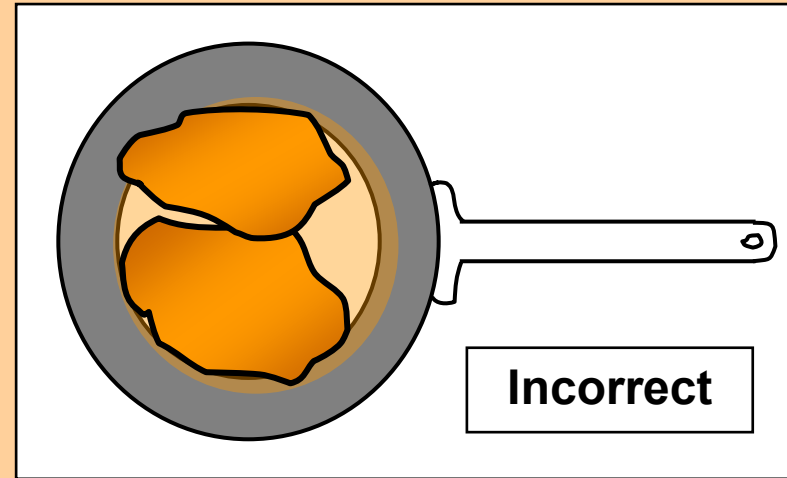
- Items usually coated with breading or batter
- Partially submerged in fat/ oil at about 325°F
- Fat covers the bottom 1/3 to 1/2 of items
- Only exterior crust is browned
- Can be completely cooked in pan or finished in oven
- Best choice for items that warp when cooked



# Pan-Frying: Pan Size



- Pan is full
- Sufficient space between the items
- Steam can escape
  - Prevents toughening



- Pan is overcrowded
- Pieces are too large
- Steam gets trapped
  - prevents items from browning
  - causes meat fibers to toughen

# Pan Frying: Fats and Oils

- High smoking point
- Oil temperature = +/- 350°F
- Examples:
  - Clarified butter
  - Neutral-flavored oil (safflower, corn, etc.)
  - Olive oil
  - Rendered fats

# Pan Frying: Ingredients



- Tender
- Portion-size or small pieces
- Suitable foods:
  - Veal, chicken, pork
  - Seafood
  - Vegetables/ starches
  - Prepared items (i.e. fritters)

# Pan-Frying Method

1. Heat oil to appropriate temperature.
2. Add item (usually breaded or batter-coated) to pan in a single layer.
3. Pan fry item on the first side until well browned.
4. Turn item and cook to the desired doneness.
5. Remove item and finish in oven, if necessary.
6. Drain item on paper towels. Season.
7. Serve with appropriate sauce and garnish.



# Pan-Fried Items: Quality Standard

## **Exterior/Crust**

- Flavorful
- Crisp
- Golden brown to deep brown

## **Interior**

- Tender
- Moist



# Deep-Fat Frying



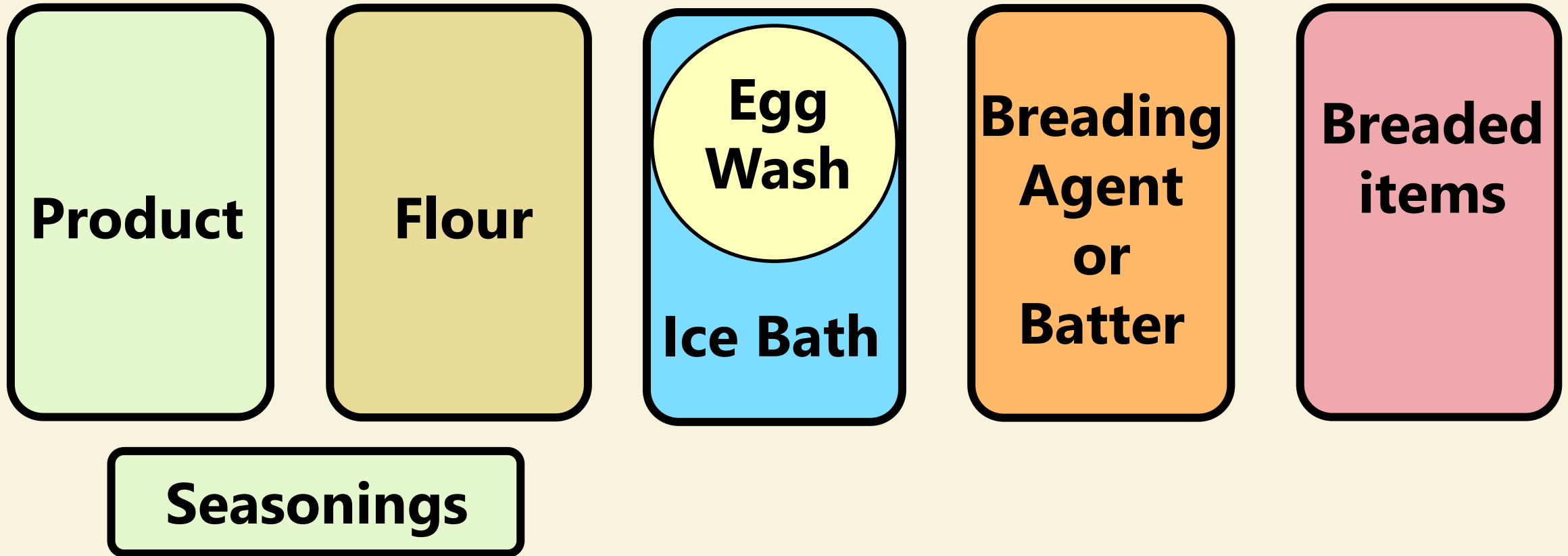
- Almost always coated with breading or batter
- Fully submerged in fat/oil at about 350°F
- Fry until completely cooked
- Best served immediately

# Deep Frying

- Item completely submerged in fat
- Cooked to order
- Served immediately



# Breading Method: Mise en Place



# Deep-Fat Frying: Battering Method

**Product  
to be  
Battered**

**Flour**

**Batter**

**Fryer**

# Deep-Fat Frying: Method

- **Basket:** for breaded items or food that will not stick together.
- **Double Basket:** contains food that floats.
- **Swimming:** For battered items or food that sticks together.



# Deep-Fat Frying: Method



Item	Basket	Swimming
Breaded/ dry coating	Yes	No
Battered	No	Yes
Many small pieces	Yes	No
Large items	Yes	Yes

# Deep-Fat Frying: Method

1. Heat fat to proper temperature.
2. Fabricate and season items.
3. Organize ingredients in order of use.
4. Set potentially hazardous items over ice.
5. Mix batter (avoid overmixing), rest for 30 minutes.
6. Flour items, lightly covering all surfaces.
7. Coat items in batter, drain off excess.
8. Submerge into hot fat/ oil. Turn if necessary.
9. Cook to correct internal temperature.
10. Drain on absorbent material or rack.

# Deep Fat-Frying: Oil Temperature

- Standard fat/ oil temperature: **350°F**
- Varies depending on food thickness
  - Higher temp. for thin items (1/4 inch)
  - Lower temp. for thick items (1/2 inch)



# Minimum Internal Temperatures



Food	Temp
Fish/ Seafood	145°F
Poultry	165°F
Pork	145°F
Veal	145°F
Beef	145°F
Vegetables	140°F

# Deep-Fat Frying: Fats and Oils

- High smoking point
- Temperature = 300°F - 375°F
- Blanching in oil - 300°F (i.e. French Fries)
- Examples:
  - Neutral-flavored oil (safflower, corn, etc)
  - Rendered fats (lard)

# Deep-Frying Ingredients

- Tender
- Small pieces that can be completely cooked by the time the coating browns
- Suitable foods:
  - Vegetables, potatoes
  - White meat, poultry
  - Cooked meat preparations
  - Seafood (light fleshed)
  - Cheeses

# Deep-Fat Frying: Method

Item	Basket Method	Swimming Method
Breaded or other dry coating	Yes	Optional (basket is preferred)
Many small pieces	Yes	No
Battered items	No	Yes
Large items	Yes (if they fit)	Yes

# Deep-Fried Items: Quality Standards

- Tastes like the product, not the fat used to fry it in, or other food previously fried in that fat
- **Exterior/crust:**
  - Flavorful
  - Crisp, not soggy or excessively greasy
  - Golden brown to deep brown crust
- **Interior:**
  - Tender
  - Moist

# Deep Fat-Frying: Maintenance

- Use high-quality cooking fat/ oil.
- Use cooking vessels made of non-reactive material.
- Do not season above the fat.
- Filter fat/ oil frequently to remove food particles and debris.
- Avoid overloading, which causes the oil temperature to drop rapidly and affects food quality.
- Maintain correct temperature for different foods.
- Wipe down fryer exterior.
- Deep-clean fryer at least once a month.

# Deep Fat-Frying: Tips

- ✓ Cook items at the proper temperature
- ✓ Cook as close to service time as possible
- ✓ Drain items well before serving
- ✓ Discard fat containing a lot of burnt particles

## **Enemies of Oil:**

- X High temperatures
- X Prolonged heating
- X Free fatty acids (bacon fat)
- X Moisture
- X Exposure to air
- X Certain metals ( i.e. aluminum)
- X Salt
- X Food particles

# Fried Food: Plating / Panning

- **Plating**
  - Fit food to the plate
  - Shingle same direction toward guest
  - Serve sauce separately
- **Panning**
  - Rack under items
  - Avoid shingling
  - Vent lid to avoid steaming
  - Serve sauce separately



# Eggs: Sanitation



- A clean and sanitized work area avoids cross-contamination.
- Eggs are potentially hazardous (salmonella).
- Use an ice bath for egg batter and wash to limit the growth of bacterium.
- Consider pasteurized eggs.
- Use egg batter and egg wash within a 2-hour period.
- Never add old egg batter or wash to a new batch.



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Any Questions?