



Culinary Institute
of America

Dry-Heat Cooking without Fats & Oils



Learning Objectives

- Define and execute grilling, broiling, roasting, and baking techniques.
- Identify appropriate tools/equipment and ingredients that may be used for each method.
- Describe preparation techniques.
- List and apply various methods of checking doneness.
- Explain the purpose of allowing cooked meat and poultry items to rest.
- Identify various sauces that may accompany these items.

Grilling & Broiling

- Uses direct radiant heat for a lightly charred exterior, moist interior, slightly smoky flavor

Ideal items:

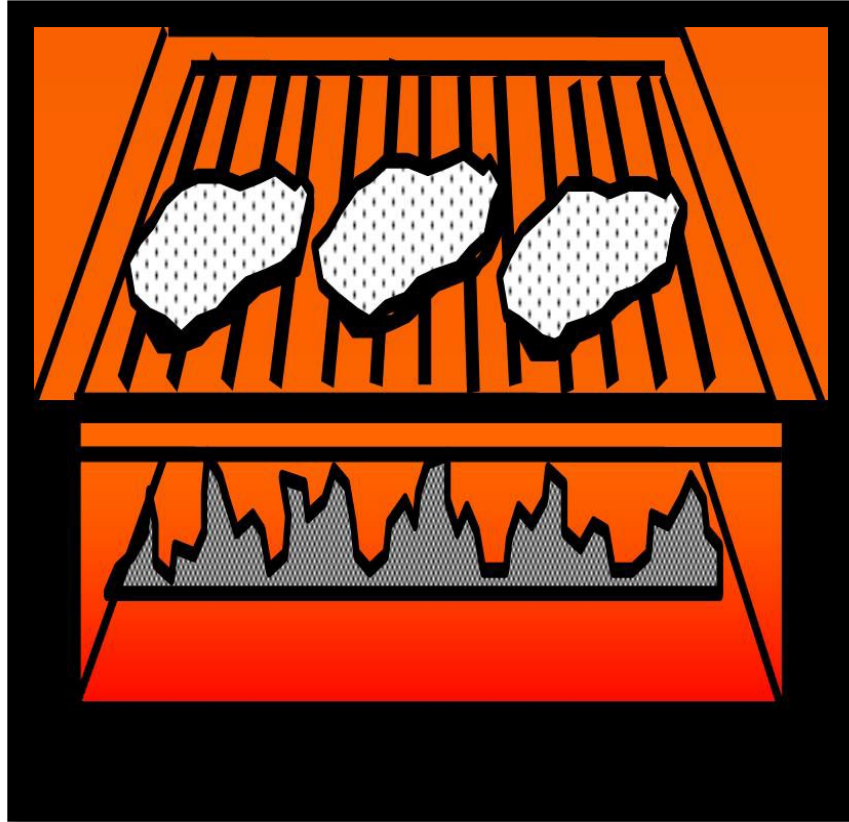
- Tender cuts with intramuscular fat content
- Evenly portioned and uniformly thick cuts
- Meats, vegetables (high moisture content), seafood

Sauces/seasonings:

- Made separately
- Applied before, during, or after cooking



What's the Difference?



Grilling:
heat source *below* the food

Broiling:
heat source *above* the food



Techniques & Tips

- Preheat equipment fully
- Lightly oil grill and food to avoid sticking
- Limit flipping; sear on one side before turning
- Let proteins rest after cooking to retain juices



Flavor Additions

Brines:

- Use before cooking
- Adds moisture to naturally dry meats
- Comprised of water (100%), salt (3-6%), sugar (3-6%), and aromatics

Rubs:

- Use before cooking
- **Dry:** Mixture of salt, sugar, herbs, spices
- **Wet:** Dry rub mixed with a little oil, vinegar, wine, citrus juice, etc. to form a paste



Flavor Additions

Marinades:

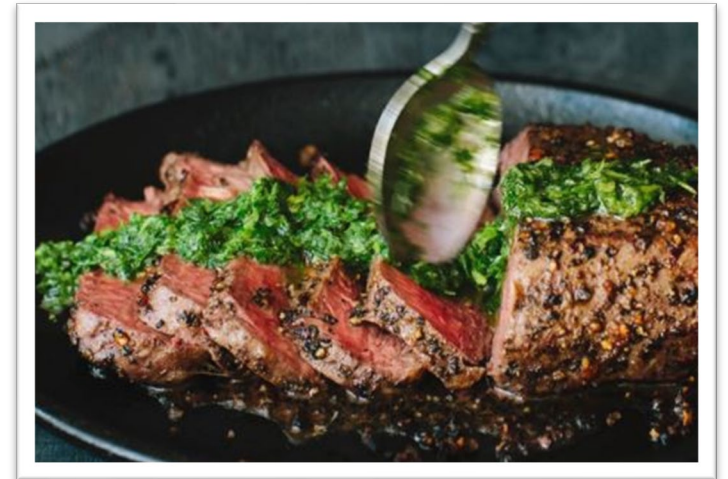
- Use before cooking
- Liquid containing oils, acids, aromatics
- Enhances flavor, moisture, color

Glaze:

- Thick, sweet sauce brushed on during last few minutes
- Adds shine sweet-savory flavor

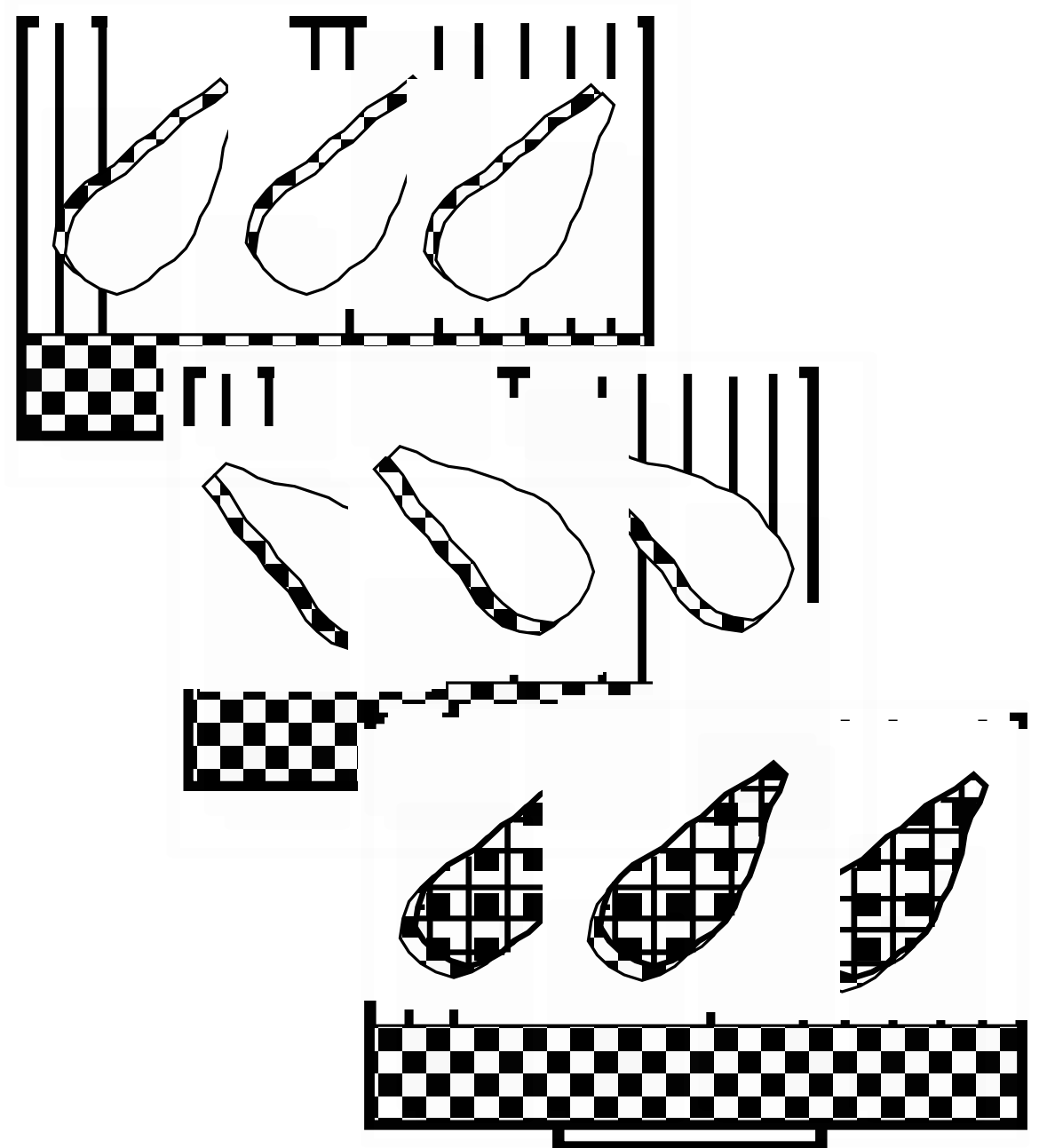
Finishing sauce:

- Prepared sauce added after cooking
- Enhances flavor and presentation
- Ex: chimichurri, BBQ



Marking an Item

1. Place the item on the grids of preheated broiler or grill
2. Cook until grill marks are well defined
3. Turn item at a 45° angle
4. Cook until grill marks are well defined
5. Turn the item over
6. Continue to cook to guest's specifications

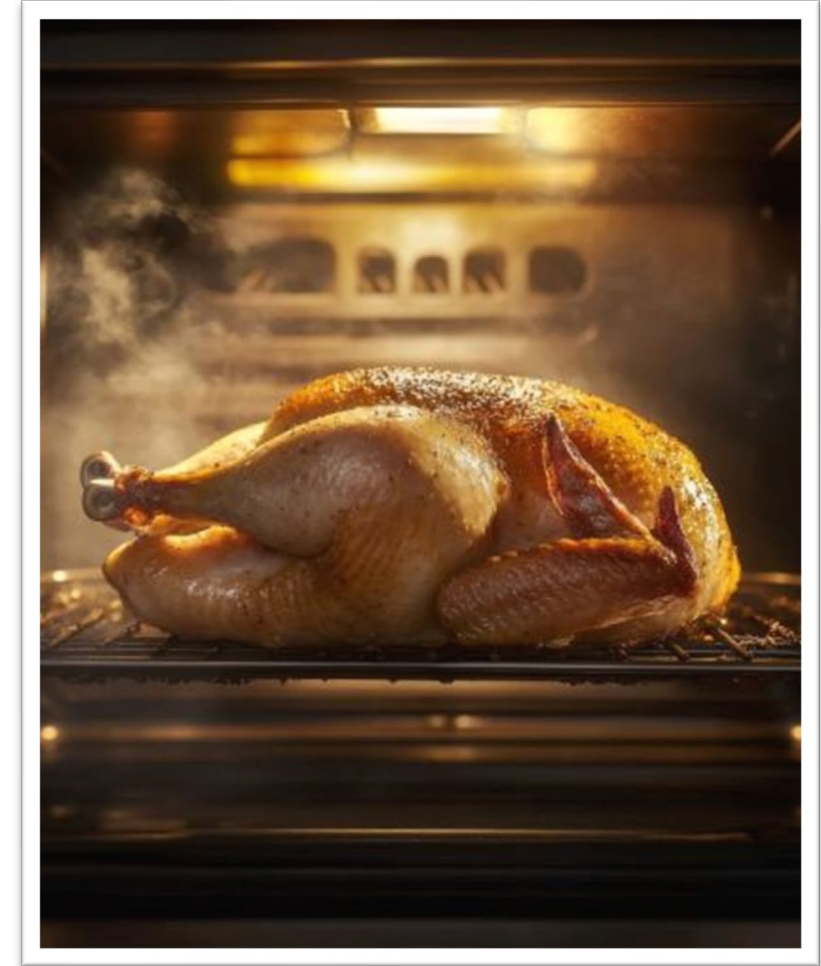


Roasting

- Uses dry, heated air, typically above 400°F
- Commonly used for solid foods that already have structure, such as large portion meats, vegetables, and firm fruits

Texture:

- Moist, tender interior
- Crisp, browned exterior due to the **Maillard reaction**
 - Chemical reaction between amino acids and reducing sugars at high heat
 - Creates complex flavors, aromas, browning



Roasting Techniques & Tips

- Roasting is typically done in an uncovered pan to encourage browning
- Searing before roasting enhances color and depth of flavor
- Fat (oil or butter) is often applied to the outside to promote browning
- Pan drippings can be used to make sauces or gravies



Determining Doneness

Internal Temperatures

- **Fish:** 145°F
- **Poultry:** 165°F
- **Duck:** 165°F
- **Pork:** 145°F
- **Veal:** 140°F
- **Beef:** 120°-140°F



Determining Doneness

Other methods

- **Time:** estimated cooking duration based on recipe or product knowledge
- **Experience:** visual cues, sounds, and intuitive understanding from practice
- **Finger pressure:** Gently pressing to assess firmness or resistance (common for meats and baked goods)



Baking

- Dry-heat cooking method that uses heated air, typically below 375°F
- Ideal for foods that begin soft or unset (like batters and doughs) and solidify during the baking process
- Heat causes leavening, moisture loss, and structure formation
- Fat is incorporated into the ingredients not added on the surface
- Can be done in covered or uncovered pans depending on texture goals



Baking Techniques & Tips

- **Measure accurately**
- **Use correct leavening:** baking soda, powder, or yeast
- **Mix properly:** avoid over- or undermixing
- **Preheat the oven:** for even results
- **Keep the door closed:** prevents heat loss
- **Choose the right pan:**
 - Metal: crisp edges
 - Glass/ceramic: even heat
- **Test doneness:** clean toothpick
- **Cool on racks:** prevents soggy bottoms



Sauces & Gravies

Au jus

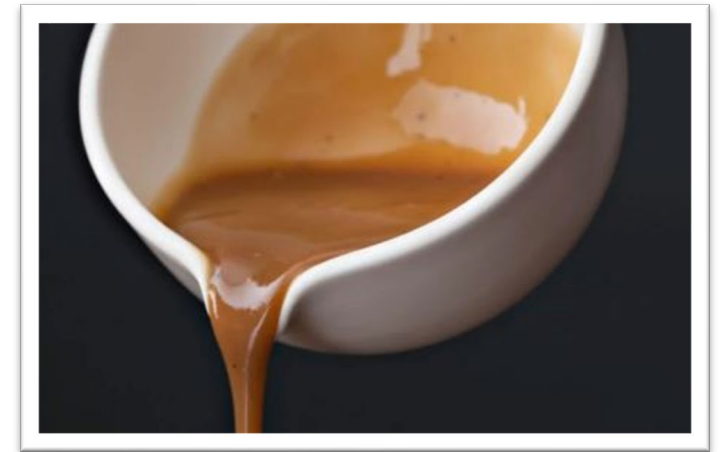
- Strained natural juices from roasting
- Not thickened: thin, flavorful
- Served with roasted meats

Jus lié

- Lightly nappé au jus
- Uses a small amount of slurry
- Thin, glossy texture; more body than au jus

Pan gravy

- Flour, stock, fat (often pan drippings)
- Often includes mirepoix, aromatics
- Thickened with roux for rich flavor, texture



Thickeners for Sauces & Gravies

Slurry

- 1:1 ratio of cold liquid mixed with starch
- Whisked in very small additions at the end of cooking
- Produces a smooth, glossy finish

Prepared roux

- 2:3 ratio of fat to flour
- Cooked separately, then added to sauce or stock
- Used for consistent thickening and control



Thickeners for Sauces & Gravies

Pan roux (Gravy roux)

- Uses the **Singer method**
 - Flour sprinkled into fat that already contains cooked mirepoix and/or aromatics
 - Roux is made in the same cooking vessel with these ingredients
- Forms base for classic gravies and pan sauces
- Builds flavor from caramelized bits at the bottom of the pan (*fond*)



Determining Amounts for Thickening

You must have the answers to the following questions:

- How much liquid am I thickening (yield of sauce/soup)?
- How much roux do I need to thicken that amount of liquid?
- How much flour do I need to make that amount of roux?



Roux to Liquid Thickening Guide

White & Pale (Blond)

Per gallon of liquid, combine with:

- Light consistency: 12-14 wt. oz.
- Medium consistency: 16 wt. oz.
- Heavy consistency: 18 wt. oz.



Brown

Per gallon of liquid, combine with:

- Light consistency: 16 wt. oz.
- Medium consistency: 18 wt. oz.
- Heavy consistency: 20 wt. oz.





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Any Questions?