



# What's Good Cooking Good Looking

Peyton Anton Rapo

# Who am I?

- Amateur chef
- Poor graduate student
- Lover of food
- Reader of at least 2 cookbooks







# What is Cooking?



Step 1: Gather



Step 2: Prep

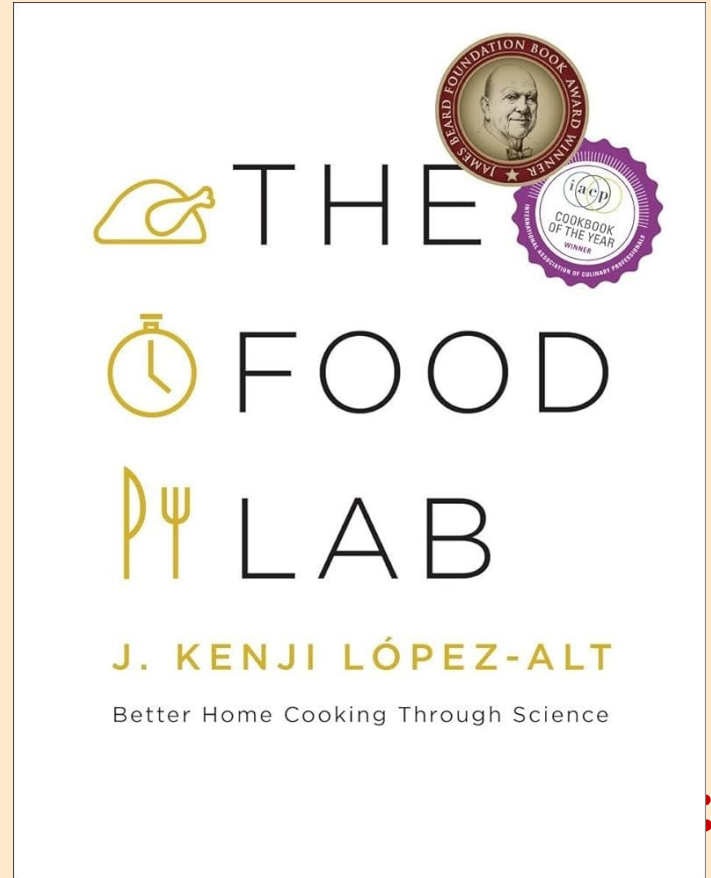


Step 3: Cook

No cats were harmed in the making of this UDLS

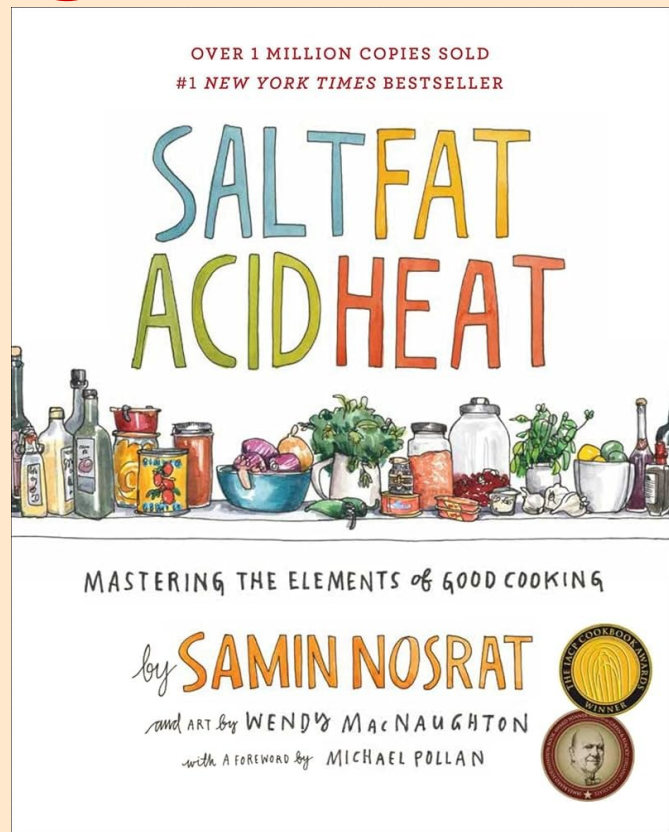
# What is Cooking?


- According to J. Kenji Alt-Lopez, cooking is all about the transfer of energy
- This transfer of energy encourages chemical reactions which will change the flavor and texture of your food
- Knowing what is happening scientifically will help your cooking intuition



# What is Good Cooking?

- According to Samin Nosrat, good cooking is learning to properly utilize
  - Salt
  - Fat
  - Acid
  - Heat





# The Elements of Good Cooking



**Salt**



# What is Salt?

- Salt = Sodium Chloride
- You can't live without it
- Comes from evaporating sea water
  - How quickly it is evaporated will impact the shape of the salt
- Main purpose is to enhance and deepen flavor of your food
  - Can also affect texture



# What is Flavor?

- **Flavor** is the intersection of taste, aroma, and sensations
- **Taste:** Saltiness, sourness, bitterness, sweetness, and umami (aka savoriness)
- **Aroma:** What we smell
- **Sensations:** Texture, sound, appearance, temperature, etc.

# Salt & Flavor

- Has the greatest impact on flavor than any other ingredient
- Minimize bitterness, balances out sweetness, and enhances aromas
- Impact on texture depends on the food being salted
- Adjusting with salt is an iterative process
  - Always be tasting and adjusting as you go
- Important to learn when salt is and isn't needed

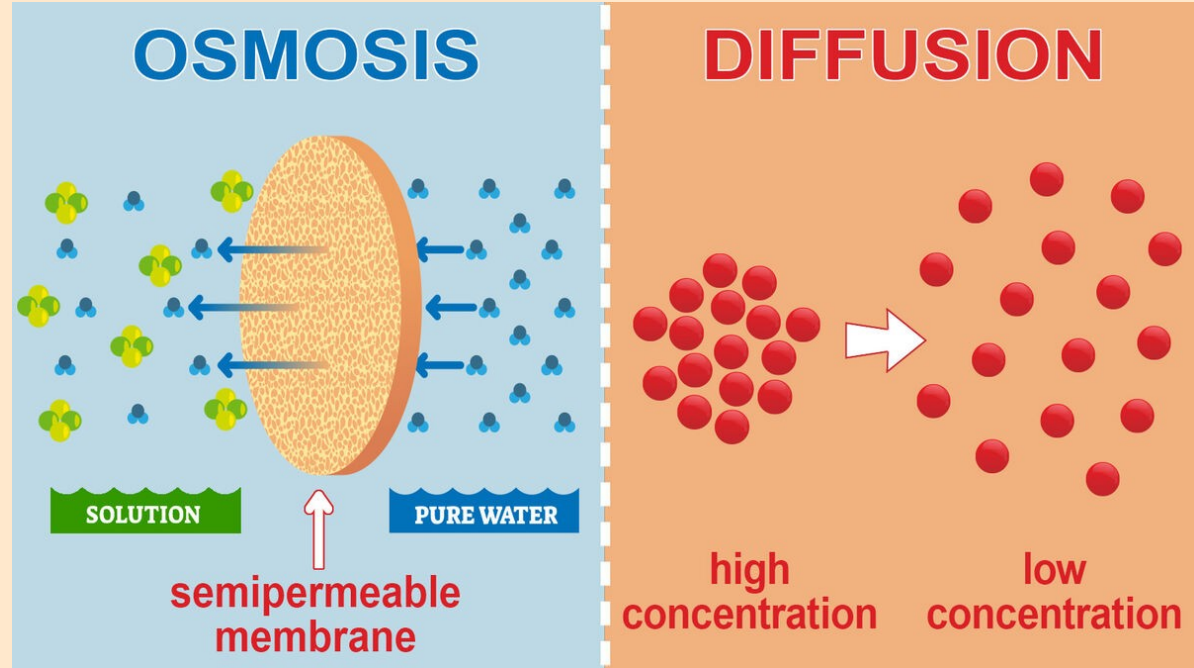
# How Salt Works

## Osmosis

Water moves from less salty to more salty

## Diffusion

Salt moves from high concentration to low concentration



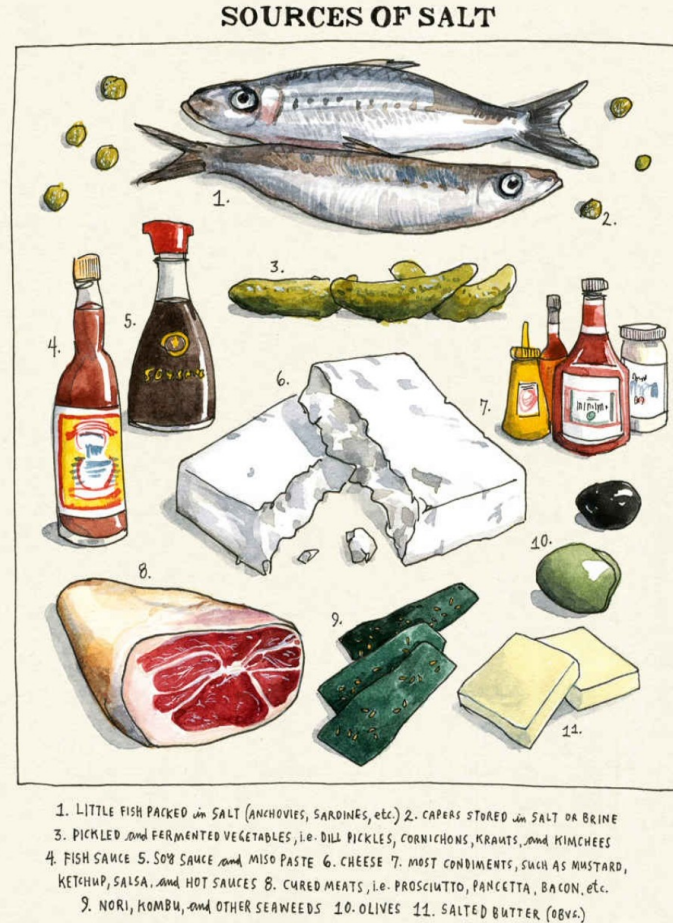
# When to Salt

- Meat
  - Aim for a day before, but 15-20 minutes before is fine
- Seafood
  - 15 minutes before for flaky fish
  - 30 minutes before for bigger fish
  - Not needed for everything else
- Eggs
  - 15 minutes before for scrambled eggs
  - Not need otherwise
- Vegetables, Fruits, and Fungi
  - For roasting, toss with oil and salt
  - For sauteing, toss salt into the pan
  - For mushrooms, wait for browning, then add salt



# Using Salt

- Have a salt cellar
- Foods will have their own salt, so be mindful of adding too much
- How to balance out too much salt:
  - Dilute
  - Halve
  - Add more acid or fat
  - It's okay if you can't :)
- In general, think about:
  - When?
  - How much?
  - Which form?

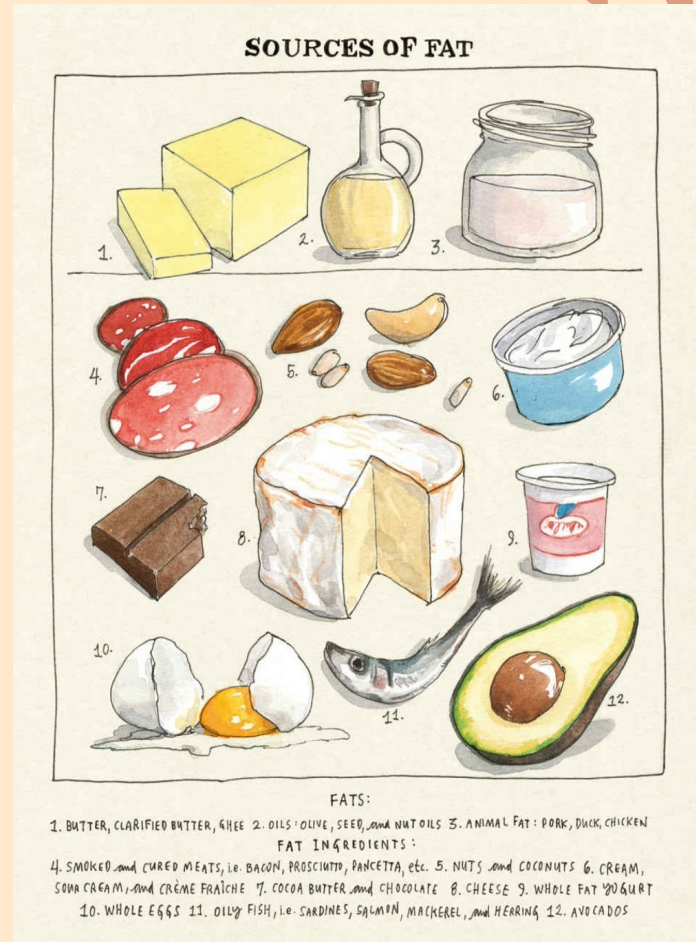




**Fat**

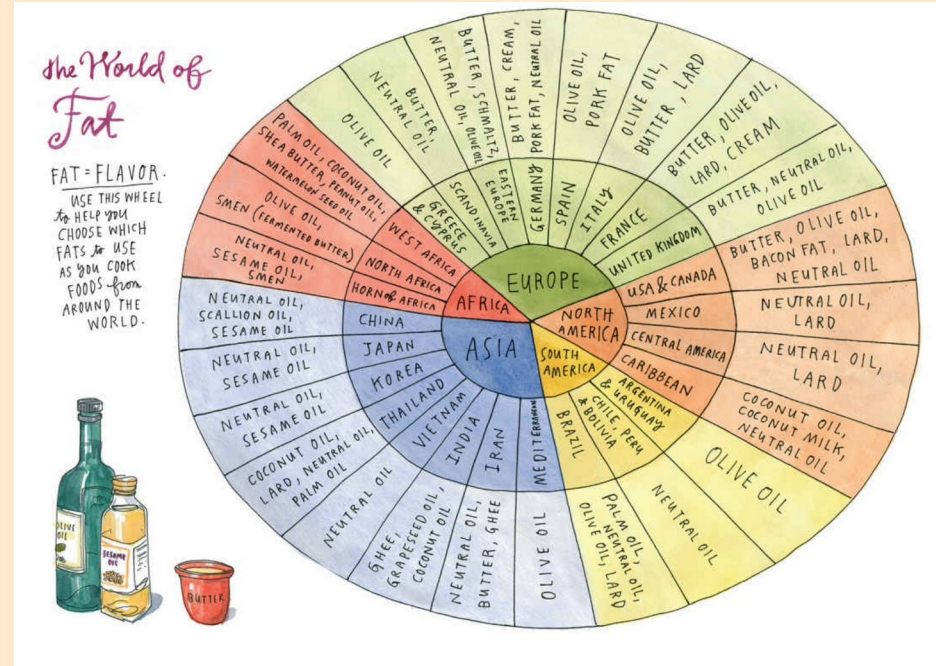
# What is Fat?

- One of the four essential building blocks of food
- Essential to human survival
- Plays multiple roles:
  - As a **main ingredient**: provides rich flavor and distinct texture
  - As a **cooking medium**: allows food to reach extreme temperatures
  - As a **seasoning**: can adjust flavor or enrich texture right before serving



# Fat & Flavor

- Can have distinct flavor,
- Can serve as medium for flavor
  - Cook aromatics directly in the cooking fat
- Can reach temperatures necessary to induce surface browning
  - This unlocks new flavors in your food
- Main fats you'll use are: Olive oil, butter, seed and nut oils, and animal fats



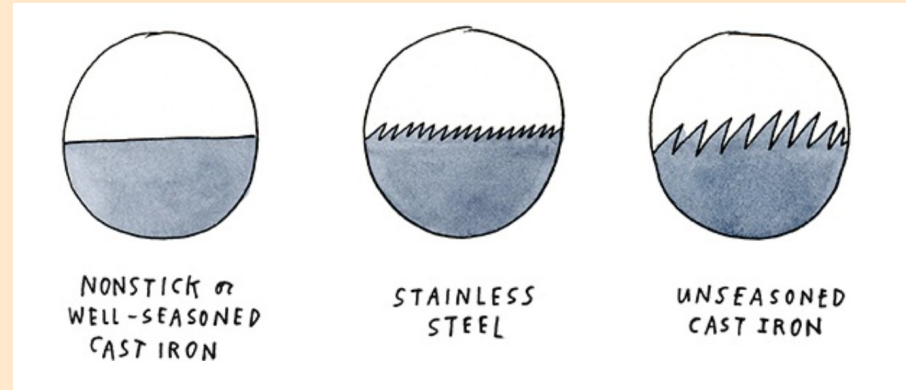
# How Fat Works

- **Which** fat you use impacts flavor, **how** you use it impacts texture.
- You can achieve 5 distinct textures with fat:
  - Crispy
  - Creamy
  - Flaky
  - Tender
  - Light
- Only going to focus on crispy / creamy as the others are more baking related



# Fat for Crispy

- People love crispiness
- The goal is a crisp exterior and tender interior
- Food becomes crisp when the water in the food evaporates
- Food also needs direct and even contact with the heat source, but pans aren't even
- Fat works as an even contact medium which can reach 177 C before smoking

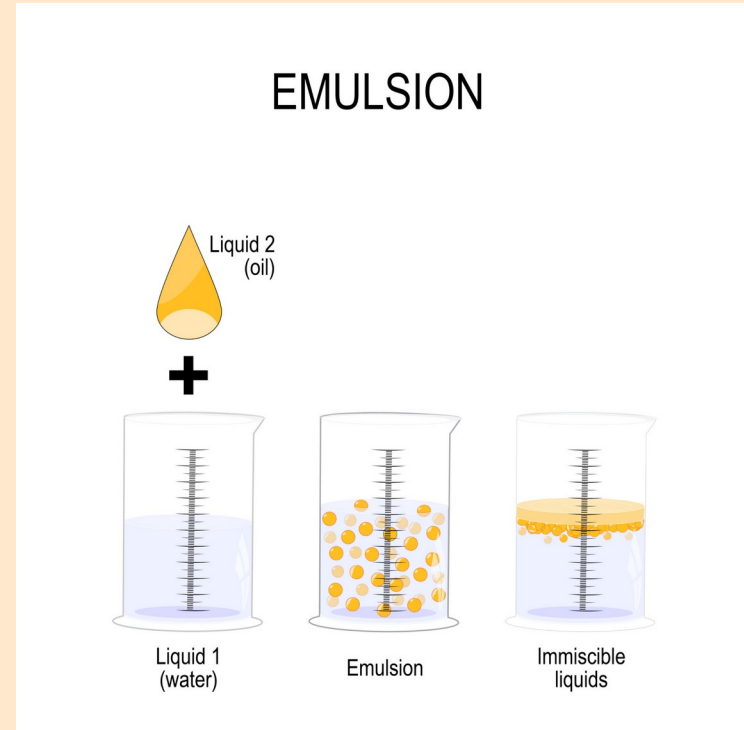


# Using Fat for Crispy

- You want to use enough fat to coat the bottom of your pan
  - Be mindful that some foods release fat as they cook
- Too much fat and you end up with greasy food
- Preheat your pan first
  - Oil should ripple and shimmer immediately upon being added
- Let your oil heat up before adding food
  - When the food is added you should hear a nice sizzling sound
- Add food in a single layer so it doesn't steam
  - Want crispy not soggy
- Since we want a tender interior, you may reduce heat later to allow the food to cook all the way through

# Fat for Creamy

- Emulsion is when two liquids that normally wouldn't mix or dissolve end up joining together
  - This is only temporary
- Use an emulsifier to keep it together
  - Examples include mustard for vinaigrettes and egg yolk for mayonnaise
- Emulsions help enrich other food



# Using Fat

- Food benefits from layering multiple types of fat
- To balance out having too much fat:
  - Add more food
  - Add more acid
  - Water it down
  - Add starchy / dense ingredients
  - Chill the food and skim off excess fat
  - Use a towel to dab off fat
- If food is too dry, you can add a bit of oil or creamy ingredients
- With salt + fat you can enhance flavor, and with fat you can affect texture



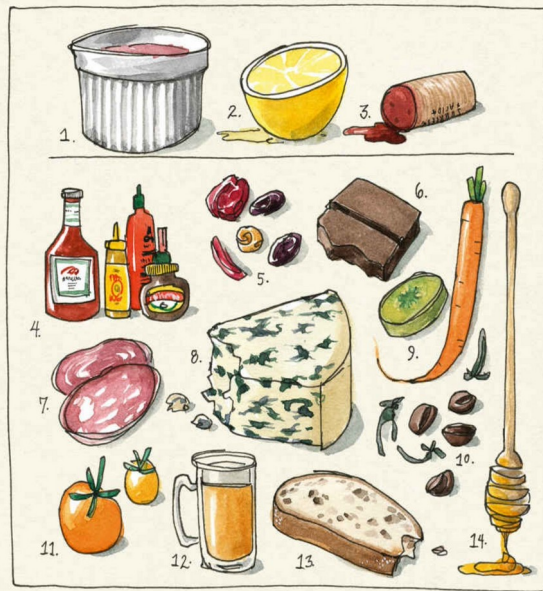
**Acid**



# What is Acid?

- Salt enhances flavors, but acid balances them
- Acid acts as a foil to salt, fat, sugar, and starch
- Anything that tastes sour is a source of acid

## SOURCES OF ACID

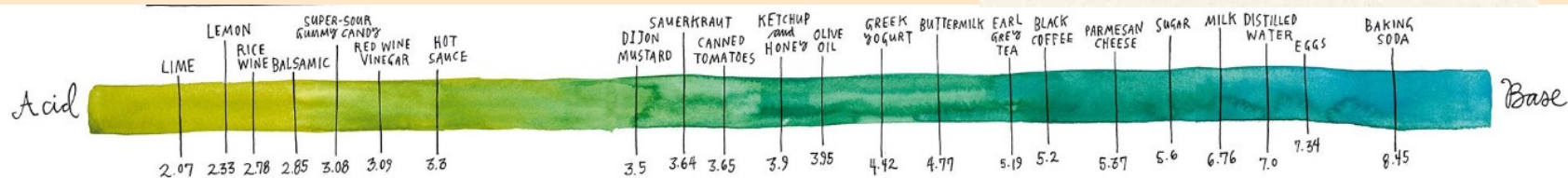


### ACIDS:

1. VINEGAR and VERTUS (GRAPE JUICE) 2. LEMON and LIME JUICE 3. WINE and FORTIFIED WINE

### ACIDIC INGREDIENTS:

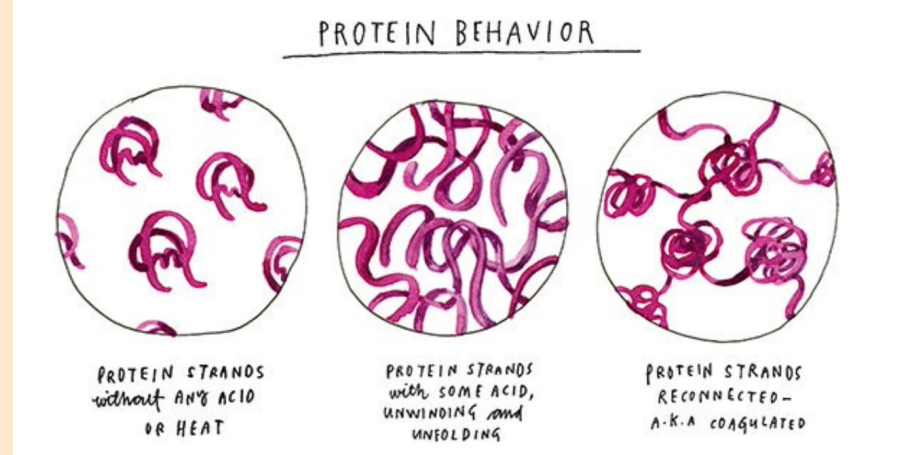
4. CONDIMENTS: MUSTARD, KETCHUP, SALSA, MAYONNAISE, CHINESE HOT SAUCE, etc. 5. FRUIT and DRIED FRUIT  
6. CHOCOLATE and COCOA POWDER 7. CURED MEATS 8. CULTURED DAIRY PRODUCTS: CHEESE, YOGURT, BUTTERMILK, CRÈME FRAÎCHE, SOUR CREAM, MASCARPONE 9. PICKLED and FERMENTED VEGETABLES and THEIR BRINES  
10. COFFEE and TEA 11. TOMATOES, CANNED PEACH 12. BEER 13. SQUASHED CULTURES and SOURDOUGH BREAD  
14. HONEY, MELLASSES, DARK CARAMEL





# How Acid Works

- Primarily affects flavor, but also color and texture
  - Dulls bright greens
  - Reds / purples stay vivid
  - Vegetables and legumes stay tougher longer
- Proteins in foods will denature and coagulate quicker
  - Eggs get creamier
  - Dairy curdles
  - Meat gets tenderized



# Acid from Food

- Acid be added to food, like salt and fat, but can also be produced by food itself
  - Browning
    - In sugars, this is caramelization
    - In meats, seafood, and vegetables it is the Maillard reaction
  - Fermentation



# Using Acid

- As with salt and fat, it is good to layer multiple types of acid
- Acids can be used during cooking and also as a garnish
  - which to use and when depends on the dish
- Use acid to balance sweetness
- If cooking multiple dishes, important to consider the meal as a whole when balancing salt, fat, and acid

# Recap so far: Salt, Fat, and Acid

- Learn to use each element
  - Salt to enhance
  - Fat to carry
  - Acid to balance flavor
- After learning how they affect flavor, important to learn when to add each
  - Add salt early for beans, but acid late
  - For meat, season in advance, then use cooking acid at the start of cooking so it becomes rich in flavor quicker, then lighten it with a garnishing acid at the end.
- Cooking is about experimentation and your intuition for these things will come naturally





**Heat**

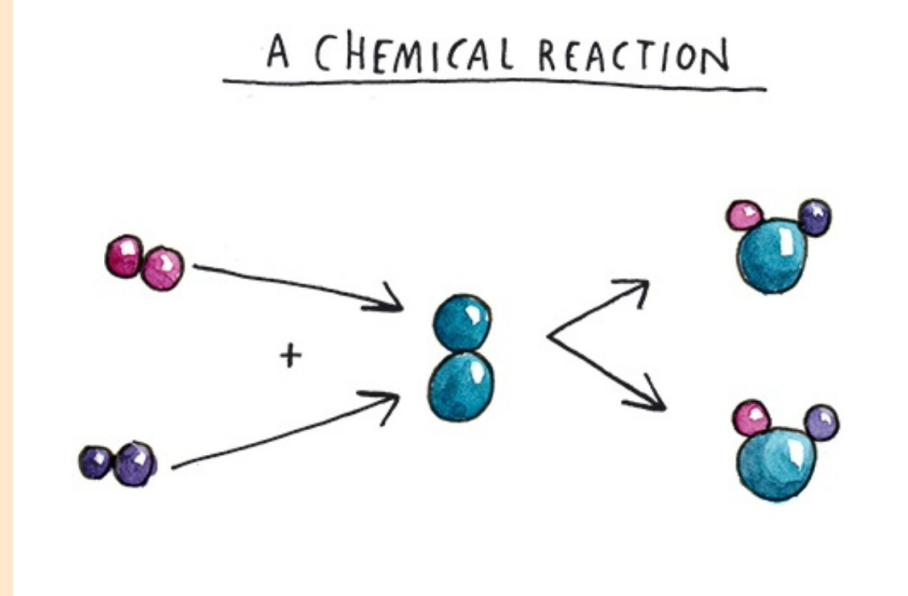


# What is Heat?

- Heat is catalyst for change that takes food from raw to cooked
- Observe the sensory cues your food is giving you for how it is responding to the heat
- The aim of heat is always the same:
  - Apply heat at the right level and at the right rate so the surface and interior of a food are done cooking at the same time

# How Heat Works

- Heat is energy
- As food gains this energy, chemical reactions will begin to occur
- These chemical reactions will change the flavor and texture of the food
- Each of the four basic types of molecules (water, fat, carbohydrates, and protein) will react differently to heat, but in a predictable way



# Heat & Basic Molecules

- Water
  - Begins to evaporate once it hits 100 C
- Fat
  - Great at storing heat and slow to cool down
- Carbohydrates
  - Sugars melt resulting in caramelization
- Protein
  - Will denature and then coagulate
  - If with carbohydrates, the Maillard reaction occurs



# Using Heat

- Main decision is choosing between
  - Cook *slow* over *gentle* heat
  - Cook *quick* over *intense* heat
- The goal of gentle heat is **tenderness**
  - Think simmering, steaming, and braising
- The goal of intense heat is **browning**
  - Think sauteing, frying, and searing
- Remember that cooking doesn't stop when the heat is turned off



# Your Cooking Journey

# How do you get started?

- Simple answer:
  - Cook more!
- More nuanced answer:
  - Pay attention to the food you eat in terms of salt, fat, acid, and heat
  - Begin acquiring the essential cookware and ingredients
  - Begin learning the essential techniques
  - Learn to read and riff off recipes

# Essential Cookware

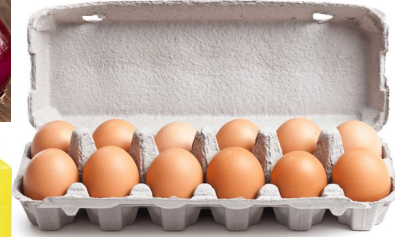
- Medium nonstick frying pan
- Pot large enough for pasta
- Colander
- Good knife
- Cutting Board
- Peeler
- Wooden spoon and spatula
- Tongs
- Instant read thermometer (if frying)
- Set of measuring equipment





# Essential Ingredient

- Salt
- Pepper
- Oil
- Garlic
- Onion
- Eggs
- Butter
- Pasta
- Rice
- Spices



# Essential Techniques

- Learn to cut with a chef's knife
- Learn to cut onions
- Learn to mince garlic
- Learn to cook eggs
- Learn to cook rice
- Learn to use pasta cooking water



# Reading Recipes

- Use the recipe as a guide, not an absolute
  - Learn to be comfortable with improvisation
  - You don't need to use every fancy spice the recipe calls for
- Reflect on why the author chose the ingredients and the steps that they did
- Read the entire recipe before you start cooking
- Prep all of your ingredients at the beginning if you don't want to be rushed while cooking



**Live Demo?**



**Thank You!**