



OKLAHOMA COUNTY  
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# *Get Cooking:* **BREADMAKING**

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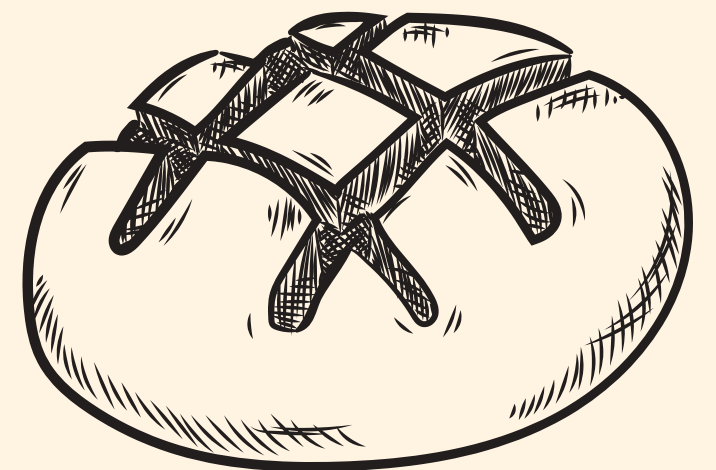
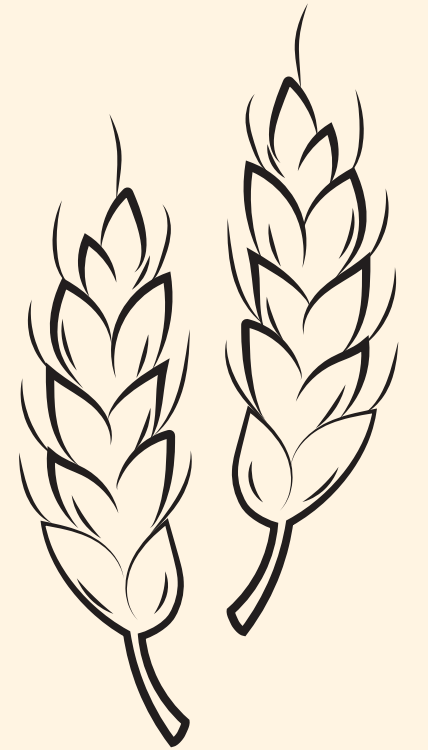
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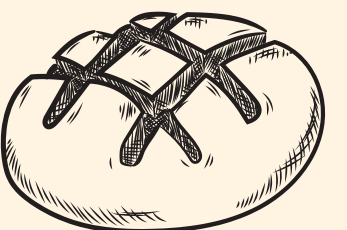
# TOPICS COVERED:

- Why bake?
- Basics & Additions to a Loaf of Bread
  - Ingredients - essential & optional
- The Process
  - Kneading, proofing, baking
- Technique Demonstration
- Q&A



# Why bake?

- Show people they love or care about them
- Celebrate
- Craft a personal artisan "touch" in a high-tech environment
- Bring freshness, flavor, appeal to daily life
- Add value, quality, nutritional ingredients
- Save money, prepare locally and save fuel, reduce packaging, time
- Control ingredients to produce a "clean label" food and substitute ingredients

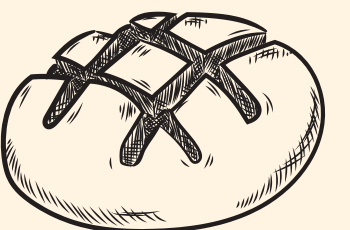






# Bread

- Bread baking is its own world, different from cookies, cakes, pies, etc.
- Bread is a unique combination of ingredients - flour, water, yeast, salt, and most importantly, time - which mean that you've got to approach it differently.
- Bread is *ALIVE*! It's characteristic texture comes from fermentation, the basic activity of yeast, a single celled fungus (the good kind, not the scary stuff!)





# BASICS TO A LOAF OF BREAD

*Essential ingredients*

- Flour
- Water
- Yeast
- Salt
- Time





# ADDITIONS TO A LOAF OF BREAD

*Optional ingredients*

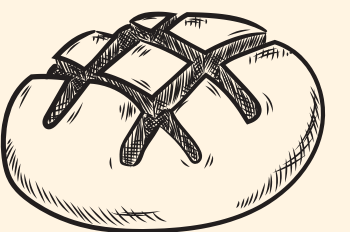
- Fats (oil, butter)- produce a tender crumb
- Sweeteners (sugar, honey, etc.) - promote yeast activity
- Eggs - enhances texture & Flavor
- Dough Enhancer/Vital Gluten - helps strengthen dough
- Nuts, seeds, or other grains - adds additional taste & texture





# Flour

- The body of the bread
- The type of the flour matters greatly
  - Different protein levels affect texture of bread
  - The more gluten present, the firmer the bread
  - Wheat bread flour is the best choice for a quality bread



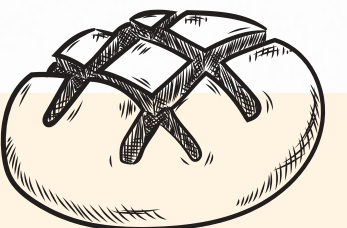
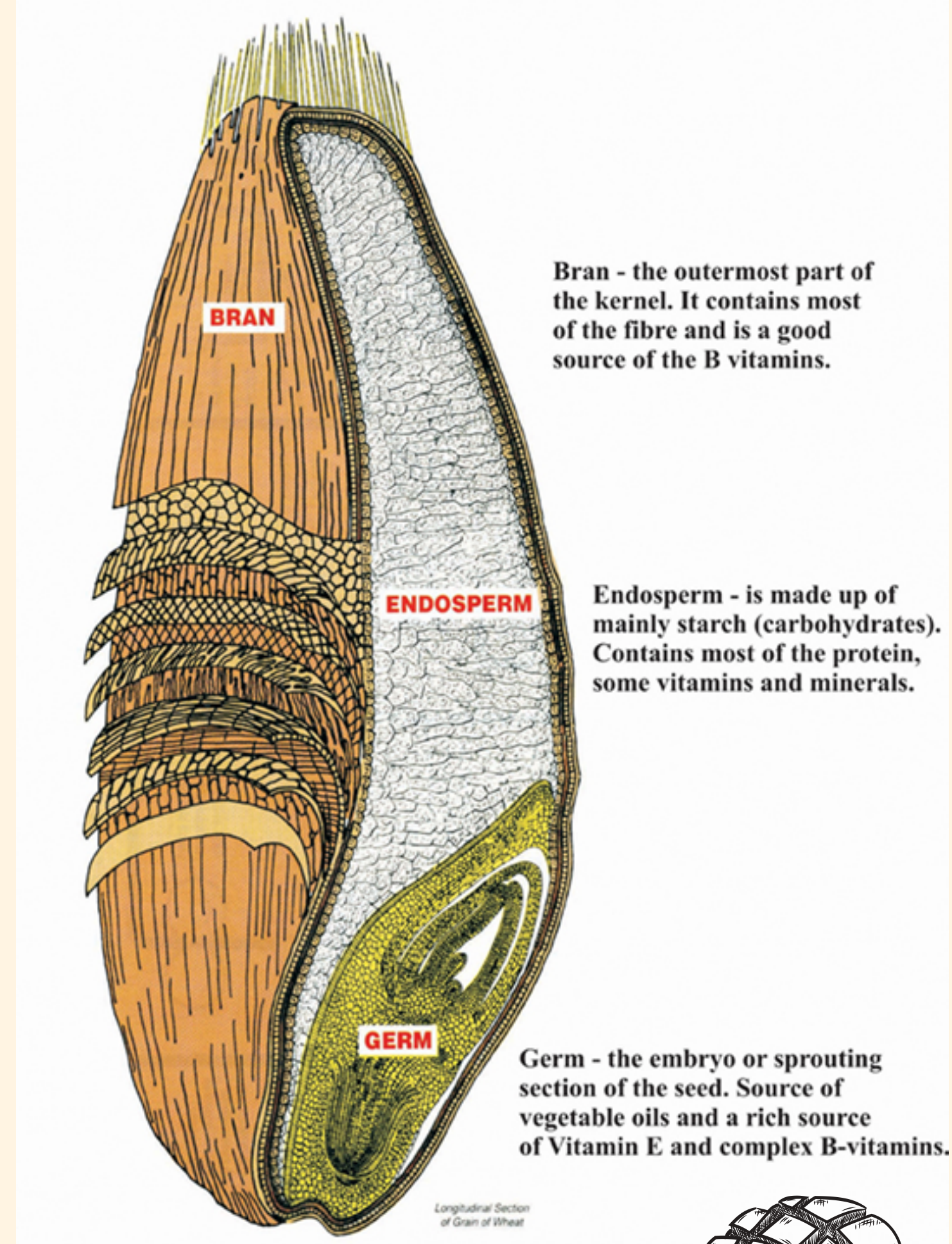


# Wheat Grain Anatomy

## *Flour*

There are 3 distinct layers of a wheat kernel (or wheat berry)

- **Bran** - 14.5% of kernel weight
- **Germ** - 2.5% of kernel weight. High fat content limits the keep quality of the flour
- **Endosperm** - 83% of kernel weight. The source of white flour.
- Refined flours lose between 48-98% of the many naturally occurring vitamins & minerals





# Flour – Which to use?

*Different flours have different purposes*



## **Bread Flour**

- Greater gluten strength
- Used mainly for yeast breads
- Vast percentage of nutrients removed
- Protein varies from 12-14%

## **Whole Wheat Flour**

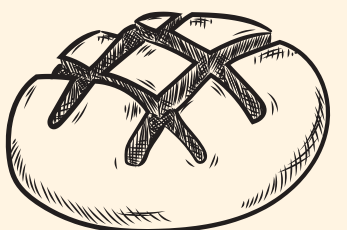
- Milled using the whole grain
- Rich in B-vitamins, vitamin E, protein, and trace minerals and dietary fiber
- Oxidation results in tremendous loss of nutritional content within a few days. So, fresh milled whole wheat is best nutritionally
- Similar protein to bread flour

## **All-Purpose Flour**

- Finely ground endosperm minus the bran and the germ (which contain the highest concentration of B-vitamins and Vitamin E)
- Generally enriched with four B-vitamins, although not in the original proportions
- Protein varies from 8-11%

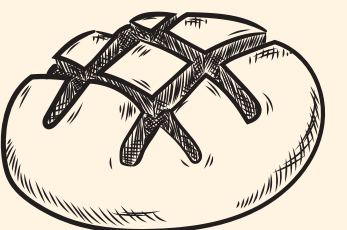
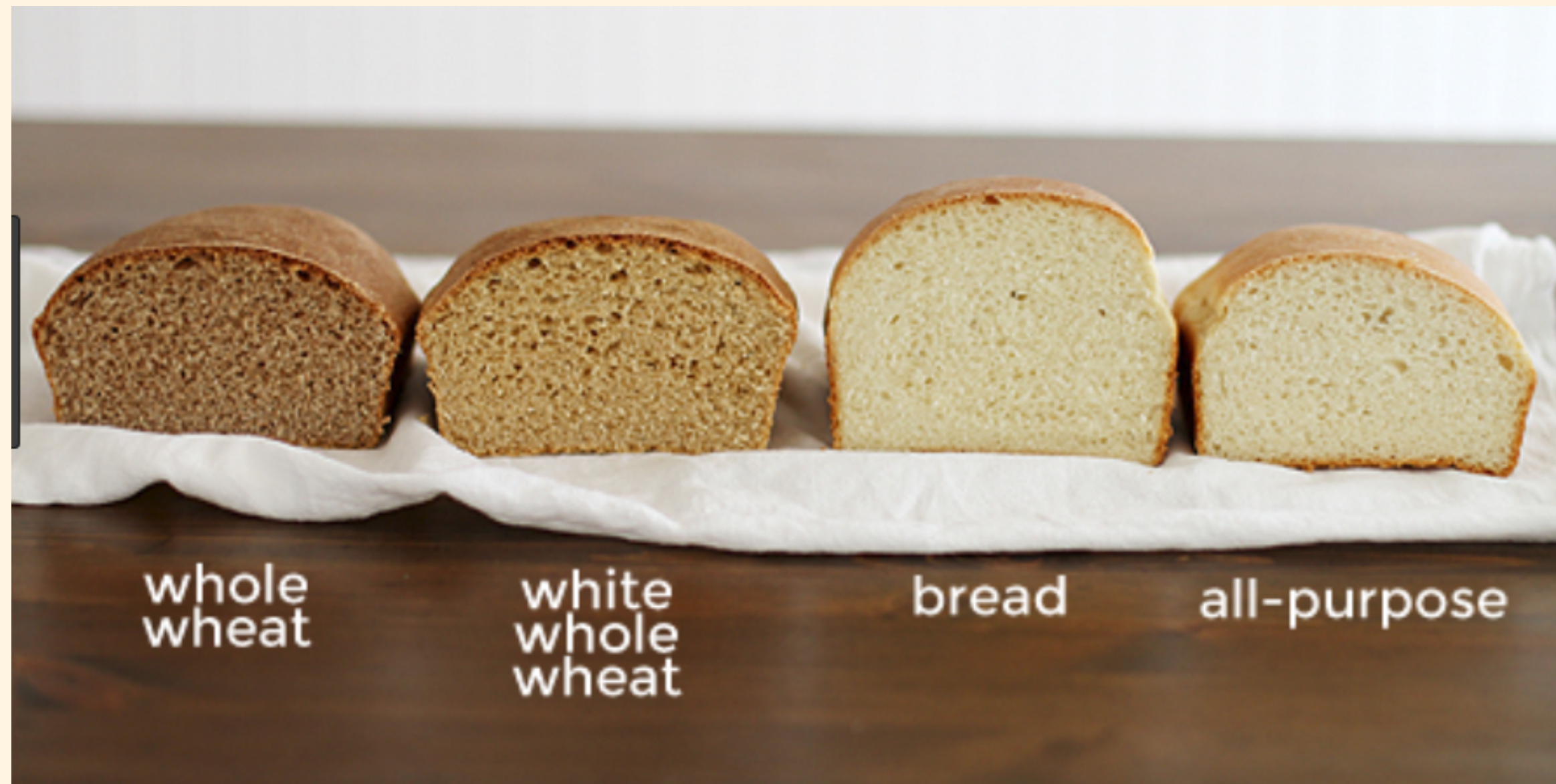
## **Cake/Pastry Flour**

- Lower protein (gluten) content than all-purpose
- Milled from soft white wheat
- Ideal for cakes and pastry because it produces a silky texture as opposed to tough crumb
- Protein varies from 7-9%





# Flour - Examples of flours in bread

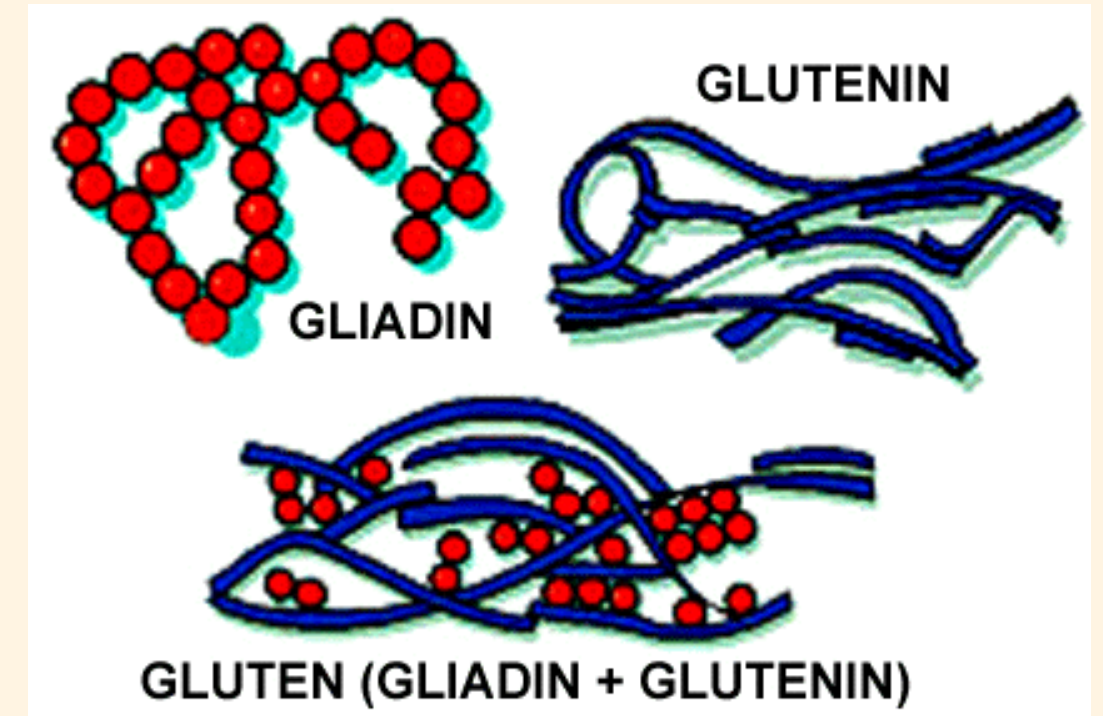




# Flour – What about gluten?

## Gluten

- General name for the proteins found in wheat. Gluten helps food maintain its shape and acts as a glue to hold foods together.
- A combination of the 2 proteins gliadin & glutenin
  - Found in wheat, rye, and barley



## Celiac Disease

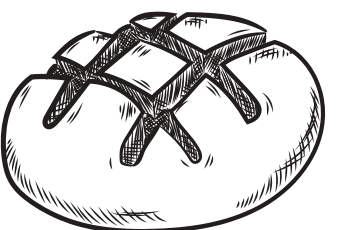
- An autoimmune disease that occurs in genetically predisposed people where the ingestion of gluten leads to damage in the small intestine

*Research indicates that a gluten free diet is not necessarily beneficial to those not suffering from Celiac's.*



Gluten-free grain alternatives for the gluten sensitive & gluten intolerant:

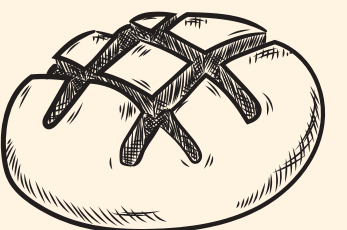
- |            |              |
|------------|--------------|
| • Rice     | • Corn       |
| • Amaranth | • Sorghum    |
| • Millet   | • Nut flours |
| • Oats     | • Potato     |
|            | • Quinoa     |





# Water

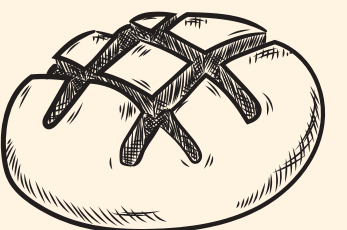
- Water or milk most commonly used
  - In addition to milk and water, juices can be used
- Water gives bread a harder crust and wheatier flavor
  - Can use tap water or filtered water. Too much chlorine (hard water) in water can potentially inhibit fermentation
- Milk gives bread a more tender creamy, texture





# Yeast

- A single celled, living, fungus
- The main characteristic of yeast breads come from the fermentation process
  - Yeast and sugar work together to start fermentation
- Temperature is key
  - Yeast can be killed at too high of temperatures





# Types of Yeast

## Active Dry Yeast

- Must be proofed in warm water & with sweetener prior
- Has a shorter lifespan
- Suitable for recipes that require more than one rise
- Suitable for cold-proofed doughs
- Can tolerate temperatures up to 115F



## Instant Dry Yeast

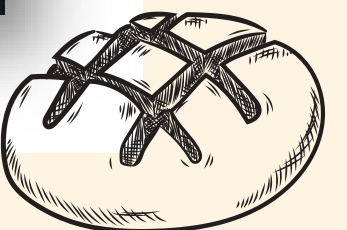
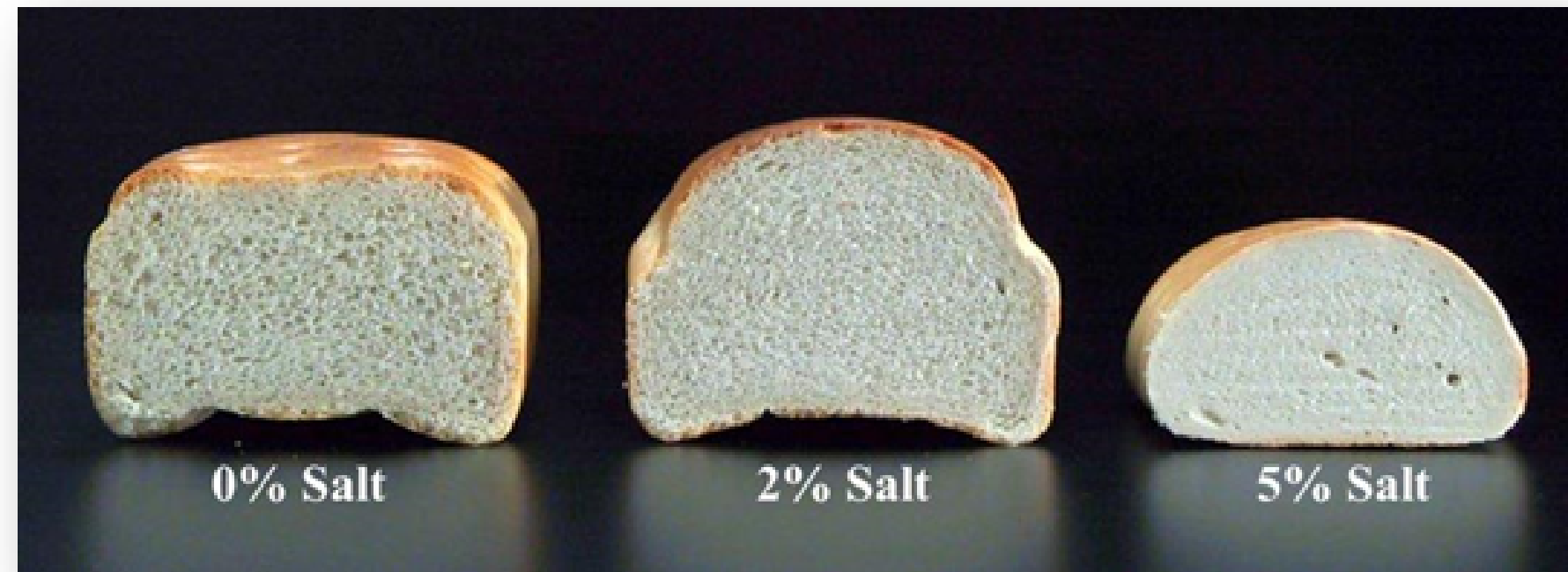
- Yeast can be directly added into dry ingredients -no proofing necessary
- Extremely stable and can be frozen for several years
- Suitable for recipes that require more than one rise
- Suitable for cold proof
- Can tolerate temperatures up to 130F





# Salt

- Essential in controlling yeast activity so it doesn't rise too quickly
- Eliminates the "flat" taste that will result if you forget it
- Tightens the gluten structure
- Choose a salt that dissolves easily with a fine granulation

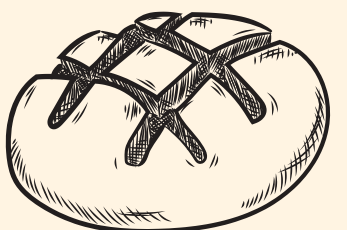




# PROCESS

## *Kneading*

- Develops the gluten, an elastic protein, and incorporates the flour and liquids
- Takes anywhere from 7-15 minutes
- Can knead by hand or with a machine
- Kneading is complete when it passes the "window pane" test



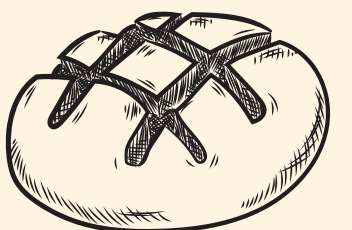


# Kneading -recognizing when the gluten has developed

- You can visually check to see if the gluten has developed by looking at the dough
  - Look for a smooth, elastic dough when pulled apart
- TEST IT:
  - Pull off a golf ball size piece of dough
  - Gradually stretch the dough in opposite directions using your thumb and forefinger of both hands
  - If you can stretch the dough thin enough to see light without the dough readily tearing, then the gluten has sufficiently developed



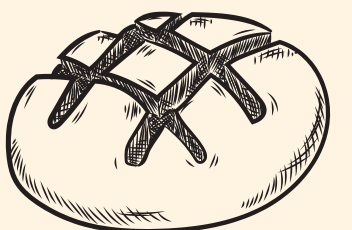
Note: it is easier to under knead than over knead





# Proofing

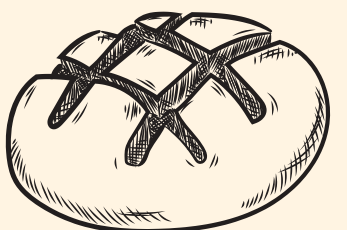
- After dough is kneaded you must let it rise, called proofing
  - Place dough in a large greased mixing bowl
  - Cover with tea towel, plastic wrap, or damp cloth
- Temperature is key
  - Let dough rise in room temp spot - between 70-80F
    - Tip: if the room is too cold, place dough in oven (turned off) and propped open with the light on
- Dough has proofed enough when it has doubled in size
  - Punch dough down to release the air
  - Usually will proof twice
  - Use the finger poke test to determine if dough is ready to bake





# Proofing -finger poke test

- To determine if the bread loaf is ready to bake, lightly press the corner of the loaf with a pinky finger (about one half inch)
  - If dough slowly springs back, then it's ready to bake
  - If it springs back fast to its original shape, allow more rising time
- Flavor and texture of the bread improve with up to three rising





# Baking

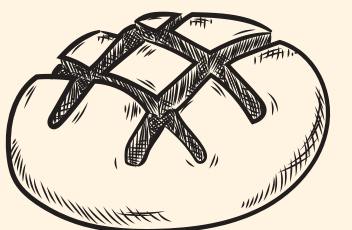
- Bake fully risen loaves for the stated amount of time and temp
- Once baked, remove from pan to prevent a soggy bottom
- Slice bread once the bread is completely cooled down



## Is it done?

Determine if bread is baked by one of the two methods

1. Tapping method: tap on bottom of the bread, if it sounds hollow and the bottom, sides, and top are golden brown color, it's baked through
2. Objective method: place an instant read thermometer in the center of the loaf. If it reads between 190-210°F, it is baked through





# PROGRAM EVALUATION



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# RESOURCES

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