

Bread Basics Starter Guide

A Comprehensive Introduction to Understanding Dough, Fermentation, and Flavor

By Chef Mark Grigsby

Introduction: Why Bread Matters

Bread is one of the oldest, simplest, and most transformative foods on earth. Four ingredients — flour, water, salt, and yeast — are all it takes to build something that transcends its parts. But the truth is, simple doesn't mean easy. Good bread doesn't come from fancy gear or secret recipes. It comes from understanding — knowing what the dough is telling you, when to step in, and when to step back.

Bread is the perfect balance of biology, chemistry, and patience. It's a living process — one that rewards observation and timing more than force or speed. Once you grasp the fundamentals, bread becomes less of a mystery and more of a system. A reliable, repeatable craft that gives you freedom in the kitchen instead of frustration.

1. The Four Essential Ingredients

Every loaf begins with the same foundation: flour, water, salt, and yeast. The difference between bland and brilliant is in how you handle them.

Ingredient	Function	Chef's Tip	Common Mistake
Flour	Provides starch and gluten for structure	Use bread flour for strength; mix with whole wheat for flavor	Using all-purpose when high gluten is needed
Water	Hydrates, activates gluten, controls texture	Use filtered or lukewarm water (75°F–80°F)	Too cold (slow fermentation) or too hot (kills yeast)
Salt	Strengthens gluten, balances flavor, controls yeast	Add after autolyse to avoid slowing enzyme activity	Forgetting to add it — dough becomes sticky and flat
Yeast	Leavens and flavors dough	Adjust quantity based on fermentation time	Too much yeast = fast rise, poor flavor

Flour gives you structure. Water gives it life. Salt gives it balance. Yeast gives it character. Nothing more, nothing less.

2. Hydration: The Texture Variable

When bakers talk about “hydration,” they’re referring to the ratio of water to flour — expressed as a percentage of the flour’s weight. This single variable determines your crumb, your crust, and how your dough handles from start to finish.

High-hydration doughs (75–85%) like ciabatta or rustic sourdough create an open, airy crumb with large irregular holes and a crisp crust. Low-hydration doughs (55–60%) like brioche or bagels create tight, chewy, structured loaves.

Style	Hydration %	Texture	Example
Bagels / Brioche	50–60%	Tight, dense, structured	Bagels, challah
Sandwich / Pan Loaf	60–65%	Soft crumb, fine structure	Pullman loaf
Country Loaf / Sourdough	70–78%	Open crumb, chewy	Boule, batard
Ciabatta / Focaccia	80–90%	Loose, holey, rustic	Ciabatta, focaccia

Hydration determines behavior. The wetter the dough, the looser and stickier it feels. Don’t fight it. The key is learning to handle it with light, quick movements instead of drying it out with flour.

3. The Science of Fermentation

Fermentation is where bread comes alive. It's not just a rise — it's the chemical process that builds flavor, texture, and structure. Yeast consumes sugars in the flour, producing carbon dioxide and alcohol. Enzymes break starches into sugars, developing subtle sweetness and complexity.

Most of a bread's character is formed before it ever hits the oven. That's why time — not kneading — is the true secret ingredient.

Stage	What Happens	Ideal Time	Key Cues
Autolyse	Flour + water rest; enzymes activate	15–30 min	Dough smooths, elasticity builds
Bulk Fermentation	Yeast activity, gas formation	2–5 hrs (room temp)	Dough doubles, airy, slightly domed
Cold Fermentation	Flavor development, gluten relaxes	12–24 hrs (refrigerated)	Strong aroma, extensible dough
Proofing	Final shape and rise	45–120 min	Dough springs back slowly to touch

The biggest mistake people make is rushing. Flavor is built molecule by molecule over time. Cold fermentation — letting dough rest overnight in the fridge — slows down yeast activity and gives enzymes time to develop natural sweetness and depth.

4. Technique Breakdown: Kneading, Folding & Feeling the Dough

The goal of any bread technique is simple: develop gluten without destroying the gas structure. You don't need to beat your dough into submission. You need to guide it.

Technique	When to Use	Why It Works	Pro Indicator
Kneading	Early stage, low-hydration doughs	Builds gluten quickly	Smooth, elastic, passes windowpane test
Stretch & Fold	During bulk ferment	Strengthens dough without deflating	Dough tightens after each fold
Slap & Fold	High-hydration doughs	Incorporates air while aligning gluten	Dough transitions from sticky → cohesive

The **windowpane test** tells you when you're there. Pinch off a small piece of dough and stretch it gently — if it forms a thin translucent sheet without tearing, you've developed enough gluten.

If it rips early, give it more time. Bread teaches patience, one stretch at a time.

5. Lean vs. Enriched Doughs

Not all doughs play by the same rules. Lean doughs are bare-bones — nothing but flour, water, salt, and yeast. Enriched doughs are packed with butter, milk, eggs, or sugar, which soften the crumb and slow the rise.

Dough Type	Common Ingredients	Texture & Flavor	Examples
Lean	Flour, water, salt, yeast	Crusty, chewy, open crumb	Baguette, pizza dough, sourdough
Enriched	+ eggs, milk, butter, sugar	Soft, rich, tender crumb	Brioche, challah, dinner rolls

Fat and sugar interfere with gluten formation. That's why enriched doughs rise slower — they're heavier. Extend your proofing time and control temperature carefully to maintain structure.

6. Shape, Tension & Scoring

Shaping isn't optional. It's how you lock in structure before baking. When you shape with purpose, you're creating surface tension — a taut outer layer that traps gas and helps the loaf rise upward instead of outward.

Scoring (slashing the surface) is functional, not decorative. Those cuts control how the bread expands during oven spring.

Pattern	Effect	Example
Single slash	Controlled bloom	Batard
Cross-cut	Balanced expansion	Boule
Multiple diagonal	Maximum lift	Baguette
Artistic / custom	Visual flair	Boules, fougasse

at weak points. Score with a sharp blade and confidence. Bread rewards commitment.

7. Heat & Steam: The Final Stage

Bread rises twice — once during fermentation, and once in the oven. That second rise, called *oven spring*, happens in the first few minutes of baking when trapped gas expands rapidly before the crust sets.

To get proper oven spring, you need two things: **intense heat and steam**.

Method	Tools Needed	Why It Works
Preheated Dutch oven	Cast iron pot w/ lid	Traps natural steam for high oven spring
Ice cube tray method	Pan + ice cubes on lower rack	Generates instant burst of steam
Boiling water pour	Preheated pan + cup of water	Creates consistent humidity early on

A hot oven — 475°F or higher — gives your dough the blast it needs to expand fully. Steam keeps the crust soft for the first few minutes so that expansion can happen. Once that phase is over, moisture escapes, and the crust hardens into a crisp shell.

8. Essential Breadmaking Tools

You don't need much to make great bread, but the right tools make the process smoother, more consistent, and repeatable.

Tool	Function	Why It Matters	Pro Alternative
Digital Scale	Precision measurement	Ensures consistent hydration	Gram-scale baking only
Bench Scraper	Handling sticky dough	Lifts, portions, and shapes	Metal or plastic
Banneton / Proofing Basket	Final shape and support	Promotes upward rise	Bowl + floured towel
Dutch Oven / Cast Iron Pot	Steam environment	Professional crust results	Baking stone + steam pan
Thermometer	Confirms doneness	190–205°F internal temp	Instant-read probe

These tools don't make bread for you — they make bread *teach* you. Precision, observation, and repetition turn these tools into extensions of your instincts.

9. The Sourdough Starter Simplified

Sourdough isn't magic. It's just wild yeast and bacteria cultivated over time. A starter is simply flour and water left to ferment until it becomes active enough to leaven bread naturally.

Consistency is the secret. Feed it daily in equal parts flour and water. It will mature in about a week.

Day	Visual Cue	Action
1–2	Minimal activity	Mix equal parts flour/water daily
3–4	Bubbles form	Feed same ratio, discard half
5–6	Doubles in volume	Ready to use
7+	Strong aroma, passes float test	Maintain or refrigerate

To test if it's ready, drop a spoonful in water — if it floats, it's holding gas and ready to bake. If it sinks, feed it and give it time. You don't need perfection — you need activity and structure.

10. Common Breadmaking Mistakes (and Fixes)

Breadmaking mistakes are rarely fatal — they're feedback. Every flat loaf or gummy crumb tells you what to fix next time.

Problem	Likely Cause	Fix
Dense loaf	Under-proofed	Extend bulk fermentation
Flat loaf	Over-proofed	Reduce final proofing time
Pale crust	Oven too cool	Bake hotter or longer
Tight crumb	Too much flour / low hydration	Add water next batch
Collapsed loaf	Weak shaping or gluten	Strengthen structure earlier
Bland flavor	Rushed fermentation	Cold proof overnight

Bread doesn't respond to force — it responds to patience. Slow fermentation, confident shaping, and hot baking solve most problems.

11. Bread Styles & Ratios

Every bread style is defined by its hydration, enrichment, and fermentation length. Once you understand the relationships, you can adapt any recipe with precision.

Bread Type	Hydration	Fermentation	Enrichment	Notes
Baguette	65–70%	Medium	None	Crisp crust, open crumb
Country Sourdough	75%	Long (12–24 hr)	None	Deep flavor, rustic
Ciabatta	80–85%	Long	None	Large holes, chewy
Brioche	55–60%	Short	Eggs, butter	Soft, golden
Focaccia	80%	Medium	Olive oil	Rich, pan-baked
Bagel	55%	Medium	Sugar, malt	Boiled, dense

Once you've mastered one base formula, everything else becomes a variation on ratios and timing.

12. Pre-Ferments: Poolish, Biga, and Levain

Pre-ferments are flavor shortcuts — a way to build depth and texture without committing to a multi-day process.

Pre-Ferment	Hydration	Typical Use	Fermentation Time	Key Benefit
Poolish	100%	Baguette, rolls	8–16 hrs	Light flavor, airy crumb
Biga	60%	Ciabatta, focaccia	12–16 hrs	Stronger structure
Levain	100%	Sourdough	4–12 hrs	Tangy complexity

Mixing a preferment the day before adds flavor, strength, and longevity to your dough without adding complexity to your day.

13. Flavor Through Patience

If there's one truth to remember, it's this: time equals taste. Fermentation breaks down starches into sugars, deepens crust color, and gives bread that subtle tang you can't fake.

Fast bread is serviceable. Slow bread is unforgettable.

Cold fermentation overnight is the single easiest upgrade a home baker can make. Mix your dough, let it start rising at room temperature, then move it to the fridge. By morning, you'll have something far more complex than a two-hour loaf could ever deliver.

14. Bread as a System: The Professional Mindset

Breadmaking isn't about memorizing recipes — it's about understanding systems. Once you grasp how hydration, fermentation, temperature, and time interact, you can bake anything with confidence.

The best bakers don't have dozens of recipes. They have one foundation they adjust by feel. Flour, water, salt, yeast — ratios, time, and instinct decide the rest.

Recipes are training wheels. Understanding is the real skill.

15. Quick Reference Cheat Sheet

Base Ratio (Baker's Percentage):

- 100% Flour
- 70% Water
- 2% Salt
- 1% Yeast

Temperature Targets:

- Bulk Fermentation: 75°F–78°F
- Baking (Lean Dough): 475°F–500°F
- Baking (Enriched Dough): 375°F–400°F
- Final Internal Temp: 190°F–205°F

Final Thought

Bread isn't complicated. It's a conversation between time and temperature, patience and practice. You don't need new ingredients — you need better instincts.

Every loaf you make teaches you something about structure, strength, and flavor. So listen to your dough. Respect the process. And remember: you don't control bread — you collaborate with it.

