PRINCIPLES OF BREWING

There’s a saying that you can make great coffee with hot water and a clean sock as long as you understand the principles of brewing. These principles will give you the power and knowledge to produce a perfect cup of coffee.

EXTRACTION: Using hot water to capture coffee’s flavor

Approximately 30% of a coffee bean is soluble in water. The other 70% is basically made of wood. In order to brew good coffee, you want to extract 18-22% of the bean mass. Generally, more than 22% extraction yields bitter flavors and less than 18% yields sour flavors.

BREW STRENGTH: Just the right amount of flavor

Brew strength is measured by finding the percentage of coffee particles present in the final beverage. This measure is called Total Dissolved Solids (TDS). A good range of TDS is 1.2-1.5%, which means that coffee is still 98.5-98.8% water.

THE BIG FOUR

There’s no need for fancy equipment to measure extraction and TDS when you’re brewing - you can learn anything you need to know just by tasting! Use your taste buds to decide how you want to change your coffee and then dial in the next brew by manipulating the following four variables.

1. Ratio - The amount of coffee to water. 1:15 (1 gram of coffee to 15 grams of water)
2. Size - The average particle size of ground coffee. We recommend starting with a medium-coarse grind, which is similar to the size of Kosher salt. (see next page)
3. Time - Measured from the instant water touches the coffee until it finishes draining. Great results can be achieved in the 2-6 minute time range.
4. Temperature - 200-208°F is a good range. We recommend starting with 205°F.
CALIBRATING YOUR GRINDER

A burr grinder and scale will make a huge improvement in coffee quality. If you have to choose, buy a grinder first, but the scale is a close second.

- **Grinder** - A burr grinder is a big step up from the common blade grinder. Burr grinders produce evenly sized particles, which results in a smoother cup with less bitterness. We recommend the Baratza Encore. At just $130, it is well worth the price, especially considering that you will use it almost everyday, something you can’t say for other kitchen splurges (looking at you, waffle maker).

- **Scale** - No more guessing! The scale enables you to get a perfect brew ratio every time. Weighing is much more accurate than scooping.

- **Kettle** - An electric kettle with a gooseneck spout is an asset for most brew methods; the thin spout allows precise pouring. Some models have built-in temperature control. Check out models from Bonavita and Hario.
PICKING YOUR DEVICE

Every device has a unique combination of style and function.

- **Auto Drip** - You probably already know if you’re an auto drip person because the thought of making coffee before you’ve already had a cup of coffee hurts your head. No judgment here. We recommend the Bonavita Coffee Maker because it brews at a consistent temperature within our guidelines.

- **French Press** - The French Press is classic, down-to-earth, and the easiest manual brewing method. You’ll like this device if you enjoy being outdoors and treasure your cast iron cookware.

- **Chemex** - The Chemex is special for its enduring beauty and minimalist design, while rewarding you with clean flavors and a silky-bodied cup. This method is good for folks who like to do things by hand: charcoal grill owners, knitters, wood-carvers, people who make pie dough from scratch.

- **V-60** - Portable, inexpensive, and ideal if you’re making coffee for one or two. Choose the V-60 if you’d like to experience a more freestyle approach to manual coffee brewing. Disclosure: This is the only device that requires a gooseneck kettle.

- **Aeropress** - The Aeropress is a one-cup coffee maker that is equally suited to the first-time brewer as it is to the seasoned professional. There are many ways of brewing with this fun device.
PRO TIPS

- **Grind Fresh** - Grind your coffee just before brewing. If you don’t have a burr grinder, put the blade grinder back in your cabinet and have the coffee ground when you buy it. Use it within 10 days and we promise it will be better than the blade grinder.
- **Bloom** - Adding water to fresh coffee releases carbon dioxide, which causes the coffee to “bloom.” To manage the bloom, add twice the amount of water to the ground coffee (60g of water if using 30g of coffee) and wait 30 seconds before pouring the remainder of the water.
- **Don’t Guess** - A scale is a valuable tool in brewing coffee, but if you haven’t purchased one yet, the following guide can help measure your coffee and water
  - Finely ground coffee
    1 level tablespoon = 6 grams
  - Medium ground coffee
    1 level tablespoon = 5 grams
  - Coarsely ground coffee
    1 level tablespoon = 4 grams
  - Water, 1 milliliter = 1 gram

PRO TIPS

- **Temperature Matters** - Thermometers are nice, but not necessary. Boiled water removed from heat will lose approximately 1 degree Fahrenheit every 12 seconds. This rule-of-thumb can help you find your desired temperature.
- **Make a Mess** - Freshly ground coffee sometimes gives off papery flakes. This is called “chaff” and it is leftover skin from the coffee cherry that once held the bean. It won’t affect the flavor of the brewed coffee, but it can make a mess in your kitchen. However, it is easy to clean; simply wipe up with a damp cloth.
- **Preheat** - Pouring hot coffee into a cold mug will cool the coffee down quite rapidly. Instead of putting your coffee in the microwave to warm it back up (yuck!), preheat the mug with hot water while your coffee is brewing.
BREW METHODS
by DEVICE

Half the fun of manual brewing is trying new things and discovering what you enjoy! Let these recipes be your starting point, but don’t be afraid to experiment.

It’s your coffee - Make it good, folks!
Auto Drip

Recipe Serves 4

Ingredients
- 65 grams coffee, ground medium-coarse
- 1000 grams water

Method
1. Add water to machine reservoir.
2. Add filter and coffee to filter basket, place in the machine, and turn the machine on.
3. Once the machine has started to dispense water onto the grounds, wait for 10 seconds, then turn the machine off. This allows the coffee to bloom so it won’t overflow the basket.
4. Wait 10-15 seconds, turn the machine on again, and allow it to brew until finished
French Press

Recipe Serves 4

Supplies
• 8-Cup French Press
• Pouring Kettle (Recommended)

Ingredients
• 65 grams coffee, ground coarse
• 1000 grams water at 202°F

Method
1. Add coffee to press, start timer, and bloom with 130 grams water.
2. Wait 30 seconds, pour remaining water, finishing at 1 minute and 30 seconds.
3. Put cap and plunger on top, gently submerging the bed of floating grounds just beneath the water’s surface.
4. At 4 minutes, depress the plunger and immediately serve.
Chemex

Recipe Serves 2

**Supplies**
- Chemex
- Chemex Paper Filter
- Pouring Kettle (Recommended)

**Ingredients**
- 40 grams coffee, ground coarse
- 600 grams water at 205°F

**Method**
1. Place filter in Chemex with triple layer of paper on the spout side.
2. Thoroughly rinse filter with hot water.
   Remove filter and pour out hot water.
3. Replace filter, add coffee, and start timer.
   Bloom with 80 grams of water.
4. After 30 seconds, begin pouring, adding half of the remaining water, and finishing the pour around 1 minute and 15 seconds (total water poured is 350 grams). Pour in concentric circles, focusing on the center, but working outwards to ensure all grounds are wet.
5. Allow water to drain until the bed is almost dry (around 2 minutes on the timer), and then pour the remaining water, finishing around 2 minutes and 45 seconds.
6. Allow water to fully drain. Target time for total brew is 3 minutes and 30 seconds.
Recipe Serves 1

**Supplies**
- Hario V60
- V60 Paper Filter
- Pouring Kettle
- Coffee Mug

**Ingredients**
- 20 grams coffee, ground medium-fine
- 300 grams water at 205°F

**Method**
1. Place filter in V60, on top of mug, and rinse with hot water. Pour out hot water.
2. Add coffee to filter and start timer. Bloom with 40 grams of water.
3. After 30 seconds, begin pouring again, in a slow and steady stream, moving in concentric circles. Continue pouring at a consistent rate. After 1 minute and 15 seconds you should have poured approximately 170 grams of water, and by 2 minutes all 300 grams of water should be poured.
4. Allow water to fully drain. Target time for total brew is 2 minutes and 30 seconds.
Recipe Serves 1

**Supplies**
- Aeropress
- Aeropress Paper Filter
- Mug wide enough to fit Aeropress base
- Pouring Kettle (Recommended)

**Ingredients**
- 22 grams coffee, ground coarse
- 200 grams water at 185°F

**Method**
1. Place filter in Aeropress and lock filter screen onto base.
2. Place Aeropress on mug and thoroughly rinse filter with hot water. Remove Aeropress and pour out hot water.
3. Replace Aeropress, add coffee, and start timer. Bloom with 40 grams of water.
4. After 30 seconds, pour remaining water, finishing at 1 minute and 15 seconds.
5. Immediately insert plunger into the top of the Aeropress, but don’t push down.
6. Press down at 2 minutes and 45 seconds, pushing at a rate to finish at 3 minutes.
DISCOVERING YOUR OWN PERFECT CUP

Your own brewing setup, as well as your own tastes, mean that these instructions might not be perfect for you. Use this guide to help you make a cup of coffee that suits your palate.

We suggest starting with one of the recipes in this book, but you can also take virtually any brewing device and start with the following general parameters: medium/coarse grind, 1:15 brew ratio, 205°F water, 4 min total brew time.

To make the coffee stronger, you can:
• make the grind finer
• make the ratio tighter (1:14 instead of 1:15)
• lengthen the brew time

To make the coffee less strong, you can:
• make the grind coarser
• make the ratio wider (1:16 instead of 1:15)
• shorten the brew time

If the coffee is...

• Too weak but with good flavor, increase your brew ratio.
• Too weak with sour flavors, increase brew time or decrease grind size.
• Too weak with bitter flavors, increase brew ratio and decrease time.

If the coffee is...

• Too strong but with good flavor, decrease your brew ratio.
• Too strong with sour flavors, decrease brew ratio and increase time.
• Too strong with bitter flavors, decrease time or increase grind size.
SCALING YOUR BREW

In order to double (or half) a recipe batch of coffee, while keeping the same flavor and intensity it’s best to keep the ratio, time and grind identical to the original batch.

This is easy for the French Press - simply multiply the coffee and water weight by the appropriate factor. For a manually pouring method, you need to also adjust the rate of pour. That is, for a double batch pour twice as fast, for example, in order to keep the total time the same.

The trickiest case is the autodrip machine, which has a fixed rate of pour. In this case, you do have to change the grind, which will also have some effect on the brew time. For a larger batch on a drip machine, make the grind incrementally coarser until you get the desired result. Use a finer grind for a smaller batch.

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