How to make a lasting impression… the perfect cup of coffee.

THE ELEMENTS OF BREWING PERFECTION

WATER

Fresh, good-tasting water is essential since it makes up more than 98 percent of a cup of coffee.

Mineral content can affect taste. For best results, water should not exceed these parts per million (ppm) of dissolved minerals:

- Ideal – 50-100 ppm (50-100 mg/L) or 3 to 6 grains of hardness
- Acceptable – Below 300 ppm (300 mg/L) or 18 grains of hardness

Brewing perfect coffee starts with clean equipment. Make sure your brewer is free from any contamination or odors that might affect the coffee.

TEMPERATURE

The temperature of the water during brewing affects flavor and extraction.

- Ideal Water Temperature – 195º - 205ºF (92º - 96ºC)

TIME

The brewing time or the time water is in contact with coffee grind determines the amount of coffee material extracted, the major component affecting flavor.

TURBULENCE

Turbulence is created as the water passes through and over the coffee. It should cause the particles to separate and create a uniform flow of water around them for proper extraction.

FILTRATION

Paper filters produce the clearest cup of coffee. BUNN filters are:

- Porous enough to allow free flow of the extracted coffee solubles.
- Made from oxygen processed paper for best coffee flavor.
- Strong enough to prevent collapsing.

CLEANLINESS

Make sure these are clean and free from lime and hard water deposits.

- Serving area
- Sprayhead/Funnel
- Servers
- Water Reservoir/Pitcher

Combining these elements for optimum flavor, productivity and profit is a science, a science that BUNN has been exploring for over 50 years.

THE SCIENCE OF THE BREWING PROCESS

THE BREWING PROCESS

Understanding the brewing process is essential to controlling the qualities that create the ideal coffee drinking experience.

Wetting

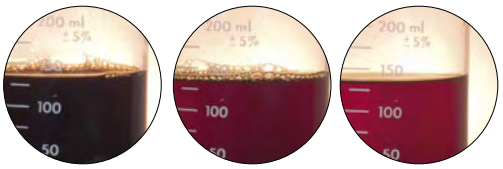
The grounds begin to absorb the hot water from the sprayhead and release gasses from the coffee. For consistent extraction from all parts of the coffee grounds, you must evenly wet the entire bed of coffee in the first 10% of the brew cycle time.

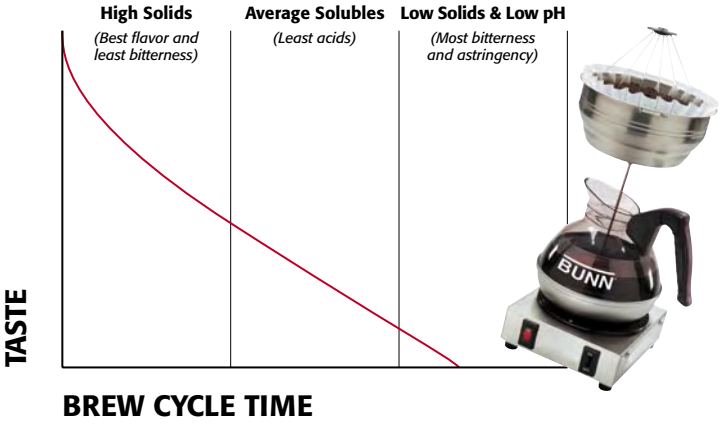
Extraction

The water-soluble materials dissolve and move out of the coffee grounds and into the water. The best flavors are extracted at the-beginning of the process as seen in the Brew Cycle Time table.

Hydrolysis

Through this chemical reaction, the materials created during extraction break down further into water soluble proteins and sugars.





MATCH THE GRIND TO BREW TIME

The brewing or water contact time is primarily determined by the grind size and bed depth. A longer brew time is required for the water to penetrate the larger grind particles.

The recommended brewing contact times for each grind size are shown here.

Brewer Cycle Timing

Your equipment's brew cycle delivery time assists in determining the recommended coffee grind to produce a perfect cup. Experiment with a coarser or finer grind to attain the flavor profile you prefer for your coffee.

Bed Depth

The ideal depth of the coffee bed in the brew basket is 1-2 inches (2.5-5.0 cm). If your coffee bed is less than 1 inch, the water may move through it too quickly and under-extract. Water moving too slowly through a bed depth of more than 2 inches (5.0 cm) may cause overextraction and a bitter taste.

THE TECHNIQUE OF BREWING CONTROL

COFFEE BREWING CONTROL CHART

This chart shows the relationship between brewing ratio, strength and extraction. The amount of coffee being extracted and the amount of coffee solubles in the finished cup determines coffee flavor.

Brewing Ratio

The relationship between the amount of ground coffee used per half-gallon of water (as shown by the diagonal red lines) and extraction.

Strength-Solubles Concentration

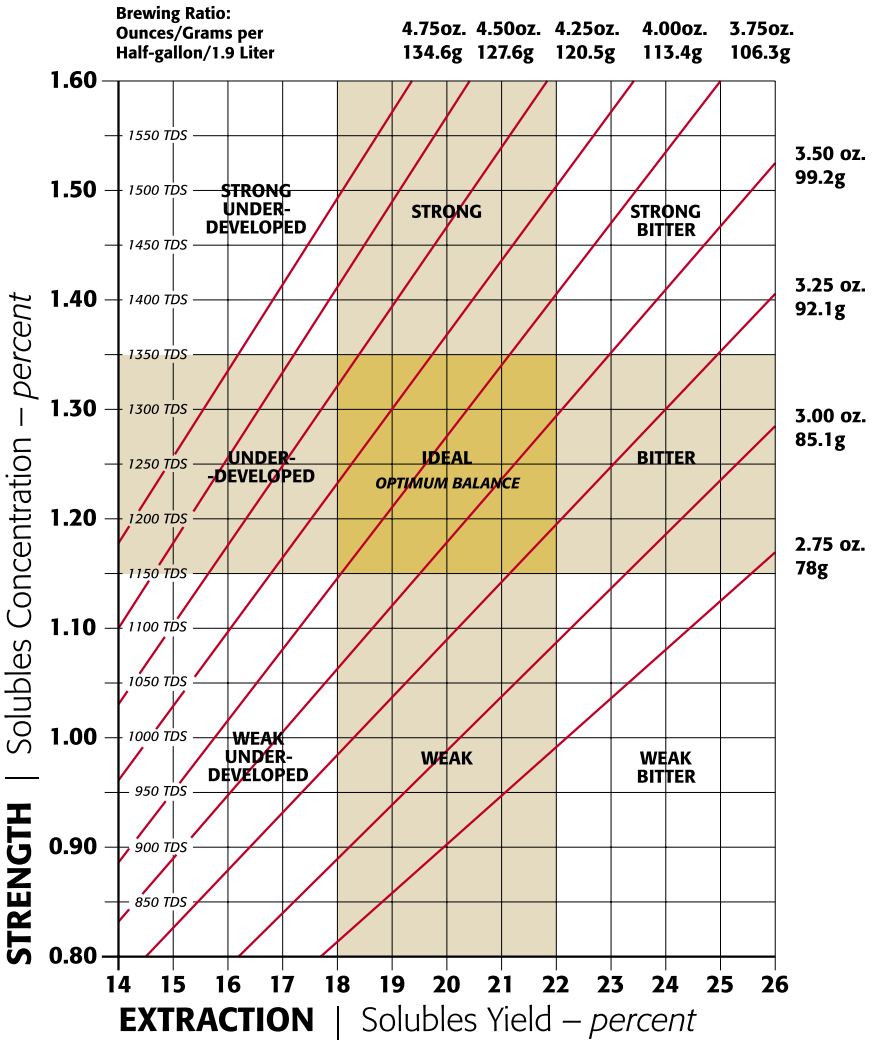
The goal for percentage of coffee flavoring material to the amount of water in the finished cup is 1.15% to 1.35%, measured by your Brew Strength Meter or Hydrometer.

Extraction-Solubles Yield

The ideal percentage of coffee material removed is 18% to 22% of the solubles.

Optimum Balance

Balancing strength and extraction creates the ideal cup of coffee. This standard is designated the "Golden Cup" by the Specialty Coffee Association of America.



USING THE CHART

If you use 4 oz. of coffee and the strength of the brew measures 1.40%, follow the line labeled **4.00 oz.** down the diagonal line to the **1.40%** grid line. This coffee would be **STRONG.** To move your brew into the box labeled **IDEAL,** you need to decrease the extraction by decreasing the brewing time and/or increasing the grind size.

The lasting impression that brings them back.

The warm welcome or the quick cup to go. The specialty creation to savor or the finale of a perfect meal. Rich, aromatic and flavorful, the best coffee begins with perfect brewing and ends with a customer who's looking forward to the next cup.

KNOW YOUR TERMS

Before you learn about brewing the perfect cup of coffee, it helps to know what goes into any cup of coffee. The process of running hot water through coffee removes various materials from the grind. Those materials are:

Soluble Materials: Compounds that dissolve in water.
Non-soluble Materials: Compounds that do not dissolve in water.
Volatiles: Soluble materials that evaporate easily.
Non-volatiles: Soluble materials that do not evaporate, but stay in solution.

When people enjoy a cup of coffee, they are experiencing a combination of the compounds described above. The terms used to describe the coffee drinking experience are:

Aroma: The soluble volatile materials (gases) that evaporate, creating the coffee's aroma.
Taste: The soluble, non-volatile materials (liquids) that are responsible for flavor.
Body: The non-soluble, non-volatile materials (solids) that determine the way coffee feels in your mouth.

BUNN TECHNOLOGY GIVES YOU CONTROL

As a leader in the science of coffee brewing, BUNN offers a line of precision coffee brewing and serving systems featuring the advanced BUNN BrewWISE® System.

With the BUNN BrewWISE® System, you can now control the brewing process to create a variety of coffee recipes from a single origin of bean, or perfect recipes for different blends of beans. It is easier than ever to create the lasting impression that brings customers back.

Pre-infusion: Control over the wetting process

The sprayhead dispenses hot water and then turns off, allowing the wetting phase to complete. Pre-infusion ensures that the coffee will be ready for the extraction phase when the sprayhead turns back on.

Pulse brew: Control over the extraction phase

The sprayhead dispenses hot water then goes through a cycle of turning off and back on. Pulse brew enables you to adjust the flavor of your coffee by extending brew times.

Variable Bypass: Control over brew strength

Bypassing a percentage of the water around the ground coffee allows you to create unique flavors.

Digital Temperature Adjustment: Control over brew temperature

With BrewWISE®, you have the option to set the brewing temperature precisely where you want it. The low temperature brew lock-out feature ensures adequate water temperature.

Extraction Systems: Control over water distribution

From traditional BUNN sprayhead designs to the new BUNN 21-hole sprayhead, you can choose which spray pattern yields the ideal flavor for your taste profile.

HOLDING AND SERVING KNOW HOW

When you brew perfect coffee, it should be enjoyed while flavor and aroma are at their peak. BUNN offers a range of holding and serving equipment designed to keep your coffee at its best.

Ideal holding temperature: 175ºF to 185ºF (80ºC to 85ºC)

Most all the volatile aromatics in coffee have boiling points well below that of water and continue to evaporate from the surface until pressure in the serving container reaches equilibrium. A closed container can slow the process of evaporation.

Ideal serving temperature: 155ºF to 175ºF (70ºC to 80ºC)

Many of the volatile aromatics in coffee have boiling points above 150ºF (65ºC). They simply are not perceived when coffee is served at lower temperatures.

Ideal holding time: 20 minutes in an open top decanter / 60 minutes in a closed container.

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International

Bunn-O-Matic Corporation | 1400 Stevenson Drive, Springfield, Illinois 62703 USA | 800-637-8606 | +1-217-529-6601 | www.bunn.com