***Milk Steaming*** (Alternate title: Steam It Don’t Scream It.)

* **LATTES**
  + Pour cold milk into steaming pitcher (amount will depend on size of drink make sure to not pour to much in though as we don’t want to have a lot left over, with time you’ll gain mad milk managing skills). Don’t forget to clip your thermometer onto the side.
  + Before you begin steaming make sure to clear your steam wand, (Two quick lasts will be fine) this clears excess water from the wand which will adversely affect steaming.
  + Now place the steam wand into the pitcher until the head is completely submerged. You want to keep the wand close to the side of the pitcher but not touching and have the pitcher at a slight angle (Between 20°and 45°). The angle will help create a swirling motion in the milk while steaming which will help with producing micro foam.
  + Now you will pull the steam wand lever all the way down to the stop, this will allow you to have both hands free for the milk steaming.
  + To froth the milk and get a small amount of micro foam, simply pull the head of the steam wand slightly out of the milk until you here a slight sucking sound. You only need to do this for a few seconds as we only want a thin layer of foam for a latte. It is essential to do this early on while the milk is still cold to get proper foam. You also don’t want to pull the head out so far that large bubbles begin to form or milk starts spraying everywhere.
  + After you’re done frothing your milk submerge the head of the wand back in remembering to keep it near the side of the pitcher (but not touching, this will cause a loud high pitched noise) at about a 20° to 45°angle, this will help create a swirling motion in the milk that will help prevent large bubble formations and ensure even heating of the milk.
  + Throughout this whole process we always want to keep an eye on our thermometer, remember that frothing has to be done early on while the milk is still cold. We are going to shut off the steam wand when our thermometer reaches 140°F. The residual heat will cause the temperature to continue rising to about 155°F. A little hotter is fine but remember that milk scalds at 185°F and is no longer servable. Of course if we don’t steam the milk hot enough it will be to cold.
  + Once we have removed the steam wand from the pitcher blow out the steam wand like we did at the beginning to remove any milk that has gotten inside the head and wipe down the steam wand cleaning off the milk that has been left on the wand.
  + Take the pitcher and tap it on the counter a couple times and swirl it, this will help break up any larger bubbles that may have developed during steaming and then swirl the milk a few times. Swirling helps bring out the sheen of the foam and helps prevent the foam from separating from the milk, which would cause problems when pouring.

**Resteaming Milk**

* + Milk can be resteamed once and only once but to do so you must introduce half the amount of fresh cold milk to the pitcher. This is the main reason why milk management is so important as milk is the most expensive component going into the drink.

***Milk Steaming Continued***

* **CAPPUCINOS**(The process for steaming a cappuccino and a latte are exactly the same except for the frothing step. Just like in the latte frothing we are going to slightly break the surface of the milk to introduce air but this time instead of stopping after only a few seconds, we are going to continue “stretching” the milk.)
  + Pour cold milk into steaming pitcher (amount will depend on size of drink make sure to not pour to much in though as we don’t want to have a lot left over, with time you’ll gain mad milk managing skills). Don’t forget to clip your thermometer onto the side.
  + Before you begin steaming make sure to clear your steam wand, (Two quick lasts will be fine) this clears excess water from the wand which will adversely affect steaming.
  + Now place the steam wand into the pitcher until the head is completely submerged. You want to keep the wand close to the side of the pitcher but not touching and have the pitcher at a slight angle (Between 20°and 45°). The angle will help create a swirling motion in the milk while steaming which will help with producing micro foam.
  + Now you will pull the steam wand lever all the way down to the stop, this will allow you to have both hands free for the milk steaming.
  + To froth the milk and get a small amount of micro foam, simply pull the head of the steam wand slightly out of the milk until you here a slight sucking sound. Now slowly lower the milk pitcher making sure that you’re not introducing to much air, you will notice that the volume of milk has begun expanding as you lower the pitcher. Your are now “stretching” the milk and are creating more and more foam for your cappuccino. It is essential to do this early on while the milk is still cold to get proper foam. You also don’t want to pull the head out so far that large bubbles begin to form or milk starts spraying everywhere.
  + Once we have about doubled the volume of milk we’re done frothing. Submerge the head of the wand back in remembering to keep it near the side of the pitcher (but not touching getting to close to or touching the side will cause a loud high pitched noise) at about a 20° to 45°angle, this will help create a swirling motion in the milk that will help prevent large bubble formations and ensure even heating of the milk.
  + Throughout this whole process we always want to keep an eye on our thermometer, remember that frothing has to be done early on while the milk is still cold. We are going to shut off the steam wand when our thermometer reaches 140°F. The residual heat will cause the temperature to continue rising to about 155°F. A little hotter is fine but remember that milk scalds at 185°F and is no longer servable. Of course if we don’t steam the milk hot enough it will be to cold.
  + Once we have removed the steam wand from the pitcher blow out the steam wand like we did at the beginning to remove any milk that has gotten inside the head and wipe down the steam wand cleaning off the milk that has been left on the wand.
  + Take the pitcher and tap it on the counter a couple times and swirl it, this will help break up any larger bubbles that may have developed during steaming and then swirl the milk a few times. Swirling helps bring out the sheen of the foam and helps prevent the foam from separating from the milk, which would cause problems when pouring.

**Resteaming Milk**

* Milk can be resteamed once and only once but to do so you must introduce half the amount of fresh cold milk to the pitcher. This is the main reason why milk management is so important as milk is the most expensive component going into the drink.
* ***Common Mistakes While Steaming Milk***
  + Large Bubbles in the milk
    - Brought the head of the steaming wand to far out of the milk
      * This will introduce to much air to fast. We need to use 4 of your 5 senses (sight, smell, sound and touch) while steaming to ensure proper technique. You will need sight and sound when frothing, sight to see if you’ve pulled the head out to far causing large bubbles and after some experience we will be able to tell by listening to the sounds it makes.
    - Head of the steam wand not fully submerged into the milk when we turned the steam wand on. Be sure that the head is completely submerged before turning on the steam wand, check to make sure you have submerged it past the seam where the head screws into the wand. One way to ensure this also is to place the wand all the way in until it reaches the bottom of the pitcher and then back it out just a bit, this of course won’t work though if you have a large steam pitcher.
    - Not creating the swirling motion in the milk
      * The swirling helps ensure even heating of the milk but it will also help break down some larger bubbles in the process, evenly and gently introducing air can also help break up bubbles as the get pulled into the area of the steam wand.
    - Loud Screaming noise while steaming
      * Didn’t introduce enough air while frothing or need to introduce just a bit more. The noise can be created by to much pressure inside the milk and can be a sign that we are damaging the sugars in the milk while we’re steaming it
      * Another cause of noise is getting to close to the walls of the pitcher, this can cause a high pitched sound caused by harmonic resonance between the two metals.

**Shiny, Hot, Bad!⁺**

I cannot emphasize those three little words enough. The espresso machine is filled with a double walled boiler that brings water to over 200°F and enough pressure to create steam. It is covered with lots of chrome plated brass to ensure constant even heat which is great for making quality drinks but can also cause severe burns if we don’t respect and pay attention to the machine. For this reason we will treat anything on the machine that is **Shiny** as if it were **Hot**. We have to respect the machine and its ability to cause injury to ourselves and our guests. Simply remember the prhase: **Shiny, Hot, Bad!** ⁺Special thanks goes to Armando Escobar with CrimsonCup Coffee and Tea™ for this simple but very useful phrase

***Espresso*** (It’s been called the new Black Gold and for good reason)

One important thing to note about espresso: It is volatile! Once ground or brewed the quality begins to go downhill rapidly.

* Whole bean
  + Whole bean in a sealed bag as it is shipped is good for about two week
  + Once you have opened the bag you need to make sure the beans are transferred to an air tight container. With proper storage an open bag is good for about three days.
* Ground espresso
  + It will become unusable after only 15 – 20 minutes. The whole bean once ground now has greater air exposure and begins to go stale faster. Grinds that have been sitting for to long will cause your shot to pull to fast. For this reason we will only be grinding enough espresso as we need for each drink.
* Brewed espresso
  + Think the espresso grinds go bad fast? How about 20-25 seconds for a brewed shot of espresso? It’s not all bad though, once we introduce the espresso to something (Milk or Syrup) it’s life span goes up greatly, this is why if we are making a flavored drink we will put the flavoring in the cup and pull the shot directly into that.

***Pulling a shot of espresso***

For simplicity and ease we will always pull a double shot of espresso, this will create some waste but alleviates extra calibrations and measurements needed throughout the process so. This ensures consistency and speed in the drink making process which can make or break he guest experience. Now let’s grab our portafilter and get ready to brew some espresso!

* **Dosing**
  + Place the portafilter into the dosing slot underneath the grinder and turn the grinder on for about 10 seconds to get some grinds into the grinds chamber.
  + Pull the dosing lever all the way forward and carry it all the way back until it stops (don’t let it slap back as this will damage the return spring, it’s expensive to replace and important to proper dosing). The first couple pulls may not result in much as the espresso has not made it around to the dispensing hole but don’t worry. Fill the portafilter halfway and pull it out and tap gently onto the tap pad (not the counter as it will mar up the counter) to help the grounds to lay evenly in the portafilter.
  + Place the portafilter and dose out enough grinds to come almost all the way to the top (if we does out to much we can just brush off the excess.
  + Now we’ll grab out tamper and gently press it down evenly on the grinds until the top edge of the tamper is flush with the top of the portafilter. Take the tamper of and gently tap the side of the portafilter once with the side of the tamper (This will free some of the grounds that are loose and also help the grinds lay evenly in the filter).
  + Place the tamper back onto the portafilter and with firm even pressure push down on the grinds (about 20-25lbs.). Even pressure is important so as to not cause the grinds to become uneven.
  + Once we have given a good even firm press we are going to give the tamper a half twist, this will polish the surface helping lock in the grinds
  + Take the portafilter to your knock box and turn it over halfway to allow any loose grinds to fall off, if there are any grinds on the top edge or “ears” of the portafilter we can simply brush them off with our hand.
* **Brewing (or pulling) a shot**
  + Place the portafilter into the group head, the two ears on the portfilter correspond with two notches inside the group head and allow it to lock into place. To get the portafilter in we will turn the handle a little left of center (where center is pointing straight out from the machine) before trying to place it into the group head, this should allow the portafilter to.
  + We’ll push the portafilter up into the group head until we feel it hit the rubber gasket inside the group head and then turn the handle to the right until it is pointing straight out. The filter should fit snuggly into play, over tightening will cause damage to the group head gasket and under tightening will cause leaks which will adversely affect the brewing process.
  + Press any of the first four buttons directly above the group head to begin brewing the espresso. (Note that there are five buttons directly above each group head. The first four buttons are programmed to shut off after pulling a double shot of espresso, the fifth button is a continuous pull button and will not shot off automatically. We will only use the first four buttons for brewing espresso.)
  + A proper shot of espresso will pull for 23-27 seconds so once the espresso begins pulling from the portafilter we will want to start out stopwatch. Any shorter than 23 seconds and the espresso will be under extracted and will taste weak, any longer than 27 seconds and the espresso will be over extracted and will taste bitter.

**Things to look for while pulling a shot**

* **Crema?**
  + If we were to compare espresso to beer the crema would be the foamy head. It should be a rich dark caramel color and is another way of telling the quality of our shot, if there is no crema the shot is bad. The crema is a layer of micro bubbles and is where all the rich texture and flavor of the espresso is located
* **Rat tail?**
  + While the shot is pulling it should have a slight arch inward from the lip of the pour spout, it will look like a thin rat tail as it is pulling. If there is no tail or it is thick then there is a good chance your shot will pull for to long, if it is to thin or dripping however it is probably going to brew to long.

**Common mistakes that cause a bad shot**

* Old/stale grinds
  + Grinds left in hopper to long
    - Remember to grind only enough for each drink, if it has been 15-20 minutes since our last rink, clear the grind container of any old grinds.
* Improper dosing
  + Not dosing enough coffee into the portafilter
    - This will cause your shot to pull to fast resulting in under extracted and weak espresso
  + Dosing to much
    - This will cause the shot to pull to long resulting in a bitter espresso.
      * Over dosing will also not allow enough room between the brew screen and the portafilter causing grinds to clog the screen and can cause damage over time if done consistently.
* Improper grind setting on grinder
  + There is a micro-adjustment knob on the grinder that sets how fine or how course the espresso will be ground. If the setting it to course it will cause the shot to pull to fast and if the setting is to fine it will cause the shot to pull to long.

***Cleaning the espresso machine***

* **End of day** 
  + **Group Heads**

(We will not be able to use either group head during this process so wait until after close.)

* + - Take the blank (portafilter with the filter that has no holes in it) and place a dime size amount of Caffiza in it
    - Place the portafilter into the group head that you want to clean.
    - Press the down arrow key underneath the digital display once (if the display is working it will read ‘Auto Clean Program’) and press the enter button. The middle button on each group will begin flashing, press the button on the one that has the blank portafilter in it. Once you have pressed the button if will stop flashing and stay solid.
    - The Auto Clean Program with go through the cleaning cycle for a couple minutes.
    - When the first cycle is done the button will begin flashing again. Take the blank portafilter out and dump the water and grinds out and place back into the group head and press the button again. This will help clean out the detergent.
    - After the second cycle has run, we’ll repeat these steps on the other group head.
    - After both group head have gone through the Auto Clean cycle twice take the blank portafilter and place it in the first group head you cleaned and press one of the first four buttons as if you were going to pull a shot of espresso, while this is running gently rock the blank portafilter left and right allowing water to flow out, this will loosen up any grinds that are left and ensure all the detergent has been rinsed out. Repeat this step on the other group head.
  + **Portafilters**
    - Take a flat head screw driver or the tip of a spoon and pop out the filter basket, this will allow us to clean both the portafilter and the filter basket and the. Build up inside the portafilter can affect the taste of the espresso and make for a bad tasting drink.
    - To place the filter basket back into the portafilter simply place the filter basket into the portafilter and press down firmly until you feel it snap into place.