TRAINEE WORKBOOK

PREPARE AND SERVE ESPRESSO COFFEE

SITHFAB005

HOSPITALITY GROUP TRAINING

ELEMENTS AND PERFORMANCE CRITERIA

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1. Organise coffee workstation	1.1 Complete mise en place for coffee service to enable efficient work flow and easy access to ingredients, equipment and service- ware 1.2 Place ingredients in correct containers and conditions to maintain freshness 1.3 Prepare espresso machine and grinder for service according to manufacturer instructions
2. Select and grind coffee beans	2.1 Select coffee beans and grind to appropriate particle size according to relevant factors 2.2 Complete test extractions before service to ensure correct particle size of grind and assess and adjust according to relevant factors 2.3 Adjust grind regularly throughout the service period according to relevant factors 2.4 Monitor efficiency of grinder for correct dose and grind during use and resolve or report issues 2.5 Clean grinder as required during or after the service period.
3. Advise Customers and take espresso coffee orders	3.1 Provide information and recommendations about types of coffee beverages and accompaniments 3.2 Identify customer preferences and take orders
4. Extract and Monitor quality of espresso	4.1 Select and prepare appropriate service-ware 4.2 Select correct filter basket and clean, dry and dose it with required amount of ground coffee 4.3 Tamp ground coffee to make even and level cake 4.4 Flush group head before attaching group handle to extract espresso 4.5 Monitor quality of extraction during service period and make adjustments 4.6 Monitor efficiency of espresso machine during service and resolve or report issue

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5. Undertake milk texturing process	5.1 Select cold milk and appropriate milk foaming jug to fulfil customer orders 5.2 Purge the steam wand every time before texturing 5.3 Texture milk according to type of milk and coffee beverage 5.4 Visually and aurally monitor and adjust the texture and temperature 5.5 Clean the steam wand on the outside and purge every time after texturing 5.6 Combine foam and milk through swirling, ensuring even consistency 5.7 Pour milk immediately after swirling, according to the coffee beverage
6. Serve Espresso Coffee beverages	6.1 Present coffee beverages attractively and without drips and spills 6.2 Serve coffee beverages promptly at the required temperature and with appropriate accompaniments 6.3 Minimise waste to maximise profitability of beverages produced
7. Clean espresso equipment	7.1 Clean espresso machine and equipment thoroughly and safely according to organisational procedures and manufacturer instructions 7.2 Maintain water filtration system according to organisational procedures 7.3 Refer faults and maintenance issues requiring technical specialists to supervisor 7.4 Use energy and water resources efficiently when preparing coffee beverages and cleaning to reduce negative environmental impacts

FOUNDATION SKILLS

Skill	Description
Reading skills to:	• Interpret organisational documents or diagrams that relate to: • Safety data sheets (SDS) and product instructions for cleaning chemicals • Organisational procedures for operating, cleaning and maintaining equipment • Read beverage menus and standard recipes for espresso coffee beverages
Writing skills to:	• Write orders and basic notes on customer

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	preferences
Oral communication skills to:	• Use active listening and open and closed probe questioning to determine customer preferences and offer suitable products
Numeracy skills to:	• Visually estimate amounts of milk and make adjustments to doses of ground coffee
Problem solving skills to:	• Identify deficiencies in espresso extraction and make adjustments to ensure a quality product
Planning and organising skills to:	• Sequence the preparation of beverages and their components to efficiently serve customers
Technology skills to:	• Use coffee grinders and espresso machines, identifying faults and maintenance issues as they arise

PERFORMANCE EVIDENCE

Evidence of the ability to complete tasks outlined in elements and performance criteria of this unit in the context of the job role, and:

- Prepare and present each of the following espresso on three different occasions within commercial timeframes:
  - caffe latte
  - cappuccino
  - espresso (short black)
  - flat white
  - long black
  - piccolo latte
  - mocha
  - ristretto
  - short and long macchiato
- monitor quality indicators for extraction as listed in the knowledge evidence during preparation of the above espresso coffee beverages and make adjustments to restore extraction to required standard
- present the above espresso coffee beverages and accompaniments demonstrating consistency and quality of:
  - appearance
  - aroma
  - body
  - crema on top of the espresso
  - flavour
  - taste
  - strength
  - volume
- use the correct equipment, ingredients and measures to prepare the above espresso coffee beverages.

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KNOWLEDGE EVIDENCE

Demonstrated knowledge required to complete the tasks outlined in elements and performance criteria of this unit:

- major types and characteristics of espresso coffee beverages specified in the performance evidence
- different types of milk, their characteristics and uses for different types of coffee beverages
- characteristics of different types of beans, blends and roasts
- mise en place requirements for preparing coffee beverages
- methods and techniques for preparing and serving espresso coffee beverages grinding coffee beans
    - measuring dose by sight, electronically, manually and mechanically
    - tamping
    - extracting espresso
    - texturing milk
    - sequencing orders for the preparation of coffee beverages
- quality indicators for espresso coffee extraction:
    - changes in colour of crema
    - changes in flow texture
    - cake of used ground coffee
    - water pressure during extraction
- available options to meet specific customer preferences relating to:
    - accompaniments
    - blends
    - service-ware
    - strength
    - sweeteners
    - type of:
        - beans
        - milk
- factors relevant to quality of espresso coffee:
    - ambient humidity
    - consistency of used coffee grounds
    - crema on top of the espresso
    - quality and rate of espresso flow
    - steam pressure during foaming and steaming of milk
    - taste
- extraction rates for the different espresso coffee beverages specified in the performance evidence
- how and when adjustments are required to the following to ensure quality of espresso coffee:
    - dose
    - grind
    - tamping technique
    - water flow
    - water pressure
- organisational procedures and industry standards for:

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    - service-ware used for espresso coffee beverage presentation
    - accompaniments used to enhance beverages
    - presentation of beverages:
        - latte art
- appropriate environmental conditions for storing coffee beans, ground coffee, milk and other ingredients to:
    - ensure food safety
    - optimise shelf life
- essential features and functions of different espresso machines and grinders used to prepare espresso coffee beverages:

    - sizes and types of filter baskets and tampers
    - purging the steam wand
    - flushing the group head
    - cleaning and maintenance methods and procedures
    - symptoms of faults in espresso machines and grinders
    - safe operational practices and dangers of working with steam
- basic maintenance and cleaning methods for espresso grinders, machines and equipment:
    - back flushing the machine
    - brushing out doser chamber
    - pouring hot water to clean drainage pipes
    - using correct and environmentally sound disposal methods for coffee making waste
    - washing drip trays
    - washing and drying:
        - bean hopper
        - group handle and filter basket
    - wiping down entire machine
    - wiping outside of steam wand and nozzle and purging inside with steam
- content of safety data sheets (SDS) for cleaning agents and chemicals, or workplace documents or diagrams that interpret the content of SDS.

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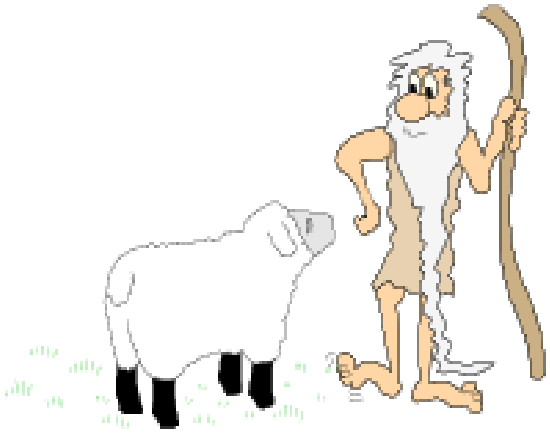
THE STORY OF COFFEE

According to a coffee history legend, an Ethiopian shepherd named Kaldi found his goats dancing joyously around a dark green leafed shrub with bright red cherries in the southern tip of the Arabian Peninsula.



Kaldi soon determined that it was the bright red cherries on the shrub that were causing the peculiar euphoria and after trying the cherries himself, he learned of their powerful effect.

The stimulating effect was then exploited by monks at a local monastery to stay awake during extended hours of prayer and distributed to other monasteries around the world. Coffee was born.

Despite the appeal of such a legend, recent botanical evidence suggests a different coffee bean origin. This evidence indicates that the history of the coffee bean began on the plateaus of central Ethiopia. The tribesmen there ate the berries or crushed them to a pulp, which was added to food.

Roasting and grinding beans was made popular in the 13th century when the Arabs began mixing coffee with water. The Arabs tried to control the supply of coffee but some green coffee beans were smuggled out of Arabia. Soon coffee was being grown in Egypt, Turkey and North Africa.

When coffee arrived in Europe, coffeehouses became meeting places for people. The church was worried that coffee would turn people away from religion and tried to have coffeehouses banned. They called coffee the 'devil's drink'.

The first coffeehouse opened in England in 1637. Women were originally banned from drinking in them.

In the 18th century, coffee was being grown in Java, which is now called Indonesia, by the Dutch. The French were also growing it in the Caribbean. The coffee seeds were taken to South America, and Brazil also began to grow coffee.

Coffee is now drunk all around the world and is made in many different ways

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GROWING COFFEE

Coffee mainly grows in tropical areas with a lot of rainfall. The plant can grow seven metres high but is usually kept at two metres high.

The strongly smelling plant takes three to five years to produce fruit. The fruit can ripen at different stages of the year, which can make harvesting impossible. Brazil is the only place where all the fruit ripens at the same time

HARVESTING COFFEE

The fruit (or 'cherries') ripen from green to a deep red in six to eight months.

The beans are inside the fruit and are separated from the skin of the cherries by either the 'wet' or 'dry' method.

The 'wet method' is used for high quality handpicked beans. The cherries are crushed to remove the outside skin and then soaked for one to two days. They are then dried.
Lastly the thick outer skin is removed to show a green coffee bean.

The 'dry method' is the older method of harvesting the beans. The cherries are left in the sun for two to three weeks to dry evenly. Then a machine is used to remove the outside skin. The beans are then sorted by hand.

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TYPES OF COFFEE BEANS

There are three main species of coffee plant, producing different styles of beans.

Arabica

Arabica is the most widely cultivated plant. It is rich and aromatic in taste. It is grown in South America, East Africa and Indonesia, making up to 75% of coffee sold. It is prone to disease.

Robusta

Robusta is named after its taste. It is easier to grow than Arabica but some people find the flavour unpleasant. It is blended with Arabica and is cheaper to buy.

Liberica

Liberica is the toughest of all the plants and can grow at sea level. It is often used for instant coffee blends.

Espresso is a blend of several different types of coffee bean. Coffees are blended to achieve sweetness, aromatics and smoothness desired in espresso based beverages. You can create your own blends or purchase from suppliers.

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CHARACTERISTICS OF COFFEE

Coffee is grown in many parts of the world:

Brazil	Coffee from Brazil has a mild smooth flavour and is used for instant coffee
Cameroon	Coffee from Cameroon is known for its great body, nice syrupy acidity and a real earthy volcanic profile. There are some chocolate tones and a finish that is slightly fruity, reminiscent of currants.
Colombia	Colombian coffee has a rich, full flavour, with well balanced acidity.
Costa Rica	Costa Rican coffee has a fine flavour with sharp acidity
Dominican Republic	Dominican Republic coffee is strong and full-bodied
Ecuador	Coffee from Ecuador has a sharp flavour with a thin body, and is used in blends.
El Salvador	Coffee from El Salvador has a slight flavour, mild body and is of inferior quality.
Ethiopia	Ethiopian coffee has a full body, excellent aroma and a strong winey flavour.
Guatemala	Guatemalan coffee is mild, with good acidity and aroma.
Haiti	Haitian coffee is rich, yet mild and has a sweet flavour.
Hawaii	Hawaiian coffee is mellow, with a smooth flavour and slight acidity. Hawaiian coffee is declining in production.
India	Indian coffee has a smooth, soft flavour with a delicate aroma.
Jamaica	Jamaican coffee is balanced, with a smooth body, flavour and aroma. Jamaican coffee is very expensive and many people think it is the perfect coffee.
Java	Javanese coffee is full and mellow.
Kenya	Kenyan coffee has a great full flavour with mild acidity
Mexico	Coffee from Mexico is light and rich with fine acidity.
Papua New Guinea	Coffee from Papua New Guinea is similar to Kenyan coffee – good full flavour and mild acidity.
Sumatra	Sumatran coffee is like Java coffee -full and mellow.
Tanzania	Tanzanian coffee has a mellow flavour with slight acidity.
Venezuela	Venezuelan coffee is delicate sweet; light bodied and has a fine flavour.

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COFFEE ROASTING

Coffee beans are green before they are roasted, and it is the process of roasting that gives the coffee its flavour and aroma.

Chemical changes take place to the beans during the roasting process. Caramel is formed and oil and gases are released.

There are different types of roasting and different beans are used for some methods.

Different types of coffee roasting

Coffee beans are roasted to different stages. Each stage of roasting creates beans with their own colour, flavour and aroma.

	Description
Light/pale	This is a light brown bean with a delicate flavour and aroma. Milk can be added to this coffee.
Medium	This coffee has a stronger flavour, and can be taken with or without milk.
Dark	This is also called double roast or continental roast. It has a strong bitter taste, and is best served black.
Italian/ Espresso	These beans are roasted to the point of being burned.

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COFFEE TERMINOLOGY

Like wine, coffee has a list of terms that describe its characteristics. These are very helpful to know especially if your establishment stocks several kinds of coffee. The table below provides you with a guide to the terms used and their meanings.

Coffee Terms:

Acidity	Sharp, pleasant quality that gives coffee a bite or tang
Aroma	The smell of the coffee, e.g. lacking, faint, moderate, strong
Baked	Beans roasted too long or at too low a temperature
Bitter	Harsh flavour from beans being roasted too long
Body	Texture of the coffee, e.g. watery, thin, buttery, oily, rich, smooth
Dirty	Unclean smell and taste
Flavour	The combining of aroma, acidity and body
Fruity	Tainted taste from overripe beans
Grassy	Tainted flavour from beans not being properly dried
Green	Beans before roasting
Harsh	Unbalanced flavour
Mellow	Well-balanced flavour
Wild	Extreme flavour

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STORING INGREDIENTS

It is vitally important for workers within the Hospitality industry to ensure the food safety of all ingredients used. This includes all ingredients used in the making of espresso coffee beverages. Further information on Food safety can be found in Use Hygienic Practices for Food Safety SITXFSA001 which is the pre requisite for this unit.

Coffee:

Green coffee beans (ones which have not been roasted) will keep indefinitely. Once coffee is roasted it begins to lose its aroma. After two weeks it will have lost all aroma if it has not been stored correctly.

Roasted coffee beans can be packaged into bags with valves that allow gases to escape from the beans without air getting in. Coffee packed this way will stay fresh for up to six months.

Alternatively coffee can be sold in vacuum bags or bricks; coffee in vacuum packs will stay fresh until opened.

Ground coffee loses its flavour even more quickly. It should be ground in small quantities and used as soon as possible. Ground coffee should be stored in air tight containers out of direct sunlight, to be used for test shots, but shouldn't be served to customers as it isn't fresh.

Coffee should never be stored in the fridge or freezer.

Once opened, coffee should be stored in an air tight container at room temperature, as moisture and air rob coffee of it's delicious oils.

Milk:

Milk should be stored in the refrigerator at 0-4°C out of the temperature danger zone observing FIFO. It should remain in the fridge until required, and returned back to fridge once no longer needed, to maintain food safety.

Sugar:

Sugar can come in a variety of forms; loose, single serve sachets, sweeteners etc. This should be stored when not in use in air tight containers in the dry storage area

Chocolate syrup and other flavourings:

These accompaniments and flavourings should be stored in the cool room or refrigerator at 0-4°C out of the danger zone once opened. Unopened containers can be stored in the dry storage area.

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GRINDING COFFEE

Coffee has to be ground before it is brewed. For espresso coffee beverages the grind needs to be fine. A fine grind means that a larger surface area is exposed to the water.

Coffee grinders can be manual or electric. It does not matter which one you use as long as the 'fineness' of the grind can be adjusted. Always follow the manufacturers' instructions on how to operate the grinders correctly; most cafes' limit the amount of people authorised to adjust the grind to ensure consistency and accuracy.

Small changes to the grind can make big changes to the extraction of the coffee, too coarse and the coffee will be weak with little crema. Too fine and the coffee will take longer to extract resulting in a burnt bitter taste.

As ground coffee doesn't stay fresh for a long time (approximately 30 mins), coffee should be ground "to order" The best coffee is tamped and extracted as quickly as possible.

It is important that the Barista monitors the amount of coffee required to fill the group handle visually and adjusts throughout the service period, as relying solely on the grinder to dose accordingly is insufficient.

Each cafe is different in regards to the amount of coffee for a single shot; this usually is between 7-9 grams.

Adjusting the grind

An experienced barista will be able to assess the quality of the grind, visually, by touch, by smell and by flavour.
If the grind needs to be adjusted it needs to be done carefully. Ensure the dosing chamber of the grinder is empty, make small adjustments and only grind enough for one coffee, check and if correct continue to make coffees for customers, if not then make further adjustments.
It is important to note that unless you have been authorised to carry out these adjustments it is best to report the issues to your supervisor.

Environmental factors

Humidity and temperature play an important part in the extraction of coffee. Humidity is the amount of water in the atmosphere. Coffee absorbs moisture from the air; the density of the grind will affect how much moisture the coffee absorbs, thus affecting the extraction time of the coffee, so the grind may need to be adjusted to compensate for changes
Temperature doesn't affect coffee to the degree that humidity does, but it is important to ensure that it is stored correctly, out of direct sunlight until you are ready to brew.

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Dosing the coffee

Once you are happy that the grind is correct you then need to dose correctly.

1. Select the single or double group handle, ensure they are clean and dry.
2. Turn the grinder on for approx 10 seconds to grind sufficient beans for the coffees on order.
3. Dose the coffee into the group handle, filling the basket and levelling off by tapping gently on the tamp mat. Ensure the coffee evenly fills the group handle, use a spatula or the back of your finger to ensure even distribution, without applying pressure
4. Tamp the coffee, placing the group handle onto the tamp mat, and applying an even amount of pressure.
5. Knock the sides of the group handle gently with the tamper and press down again, twisting the tamper gently in the group handle.
6. Ensure the tamp is even – an uneven tamp will result in and uneven extraction e.g. one side of the double group handle will pour nicely and the other will drip, resulting in a short pour.

Barista's will use a variety of methods to assist them in measuring the dose required, depending on the equipment within their cafe:

- **Sight –** visually monitoring the amount of coffee in the group handle
- **Electronically –** using scales to weigh the amount of coffee in the group handle – this is good for initial set up prior to service, but would slow down service greatly if done for each order.
- **Mechanically –** as mentioned previously some grinders are automatic, and are set to dose the required amount, some actually weigh the amount of coffee too as they dose.
- **Manually –** traditional grinders that require the barista to dose manually, in combination with sight.

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Brewing coffee

When it comes to brewing the coffee you need to follow these basic rules:

- Always keep the coffee-making equipment clean.
- Always use fresh water.
- Always use fresh coffee grounds.
- Always use quality coffee.
- Brew the coffee for the correct amount of time - under-brewing causes the coffee to be weak and sour, while over-brewing makes coffee bitter.

The methods used to brew coffee will vary from one establishment to another. How a particular establishment makes coffee depends on its equipment (type and size), the recipes it uses, and the quality of ingredients.

To create the perfect espresso, you must have the correct dose, tamp and grind.
Once your group handle is perfectly 'packed', lock it into the machine and activate the machine's pump.

Pressurised water is forced through the freshly ground coffee.

If you achieved the correct dose, tamp and grind, you will have a beautifully golden, creamy espresso.

Once the pump is activated it should take 4 seconds for coffee to appear. The following table identifies the problems which may cause the coffee to appear too quickly or take too long to appear.

	DOSE	TAMP	GRIND
1-4 seconds	Not enough coffee	Not enough pressure on tamp	Too coarse
4 seconds	PERFECT!	PERFECT!	PERFECT!
More than 4 seconds	Too much coffee	Too much pressure on tamp	Too fine

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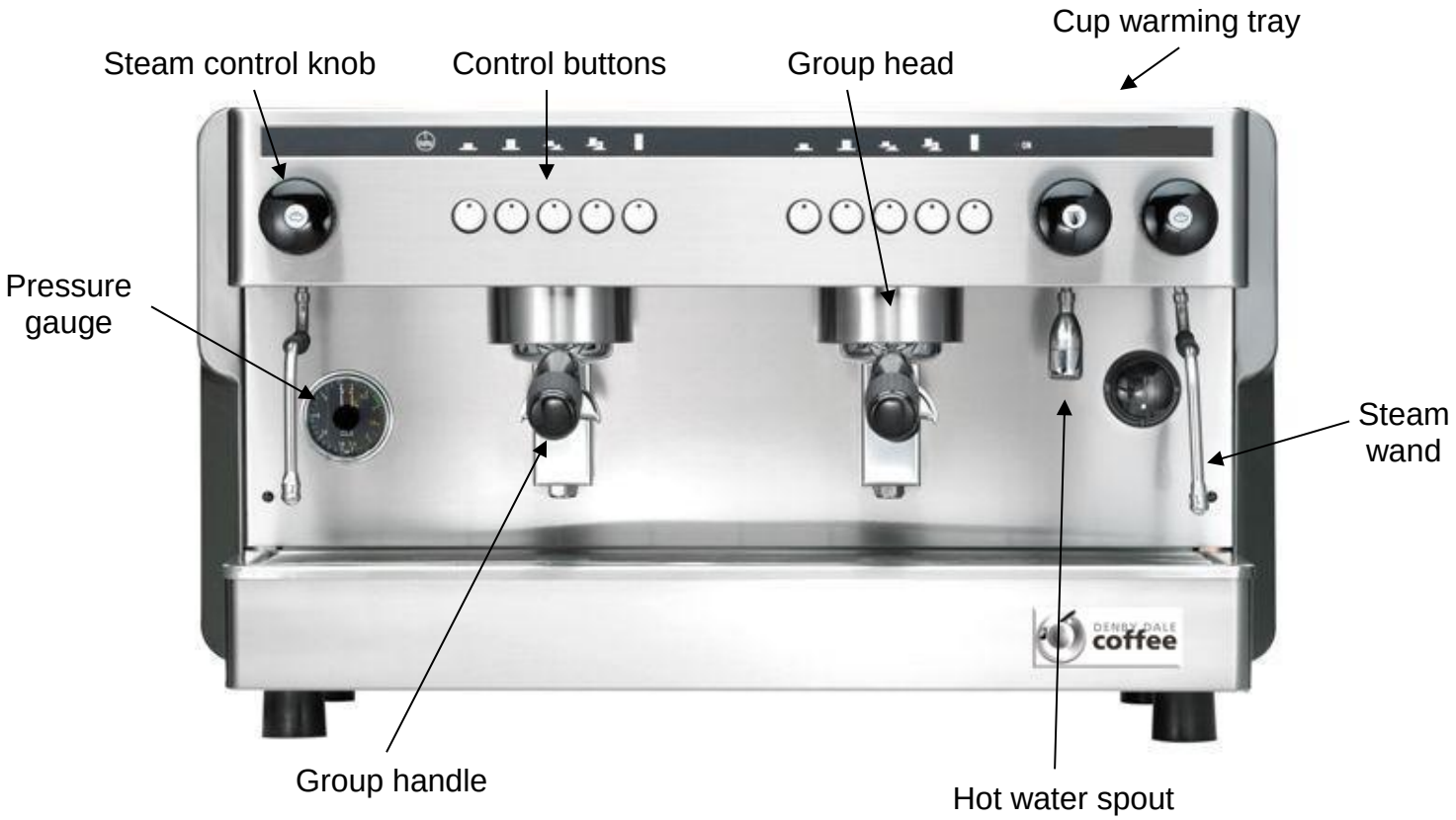
ESPRESSO COFFEE MACHINE

Look at the main parts of an espresso machine:



Part	Description
Cup warming tray	To store cups and glasses on to keep warm for service
Pressure Gauge	Used to monitor the water pressure of the machine
Steam control knob	To turn the steam wands off and on
Steam wands	Used for texturing the milk
Group handle	This is filled with the freshly ground coffee, dosed and tamped correctly. The group handle can either have one spout (for a single shot) or two (for a double) these are then locked into the group head.
Group head	This is where you place the group handle, and pressurised water is expressed over the grounds of coffee.
Hot water spout	This is where you dispense hot water from for Long blacks
Control buttons	These buttons are programmed to express the correct amount of water for your espresso coffee beverages. Some machines have many buttons, but usually only 2 are used regularly, for small (regular cups) or large (take away). There is usually a free pour button also.

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Other terms you will need to be familiar with are:

Backflush	Cleaning using the blind or blank filter in the group handle. The water is forced back through the group head filter and coffee grounds are forced out of the filter and down the drain.
Blind filter	Metal coffee filter insert without holes. Used in the cleaning process to force the water back through the group head to clean the coffee residue from the machine.
Filter plug	A black rubber disc that fits into the group filter / handle
Group filter	Metal coffee filter disc that sits in the group handle. Used to pump hot water through the coffee whilst preventing the grind from entering the cup.
Group handle	The term given to the part of the espresso machine that holds the coffee filter and coffee grounds. The water is pumped to the group handle and passes through the coffee.
Knockout Box	Container used to hold used coffee grounds. It usually has a wooden or plastic bar to use for removing or knocking out the used grounds
To tamp coffee	Means to press/compress coffee into the group handle using the tamping attachment, which may be loose, or an integral part of the grinder.
Under extraction	Means lack of coffee and flavour in the brew
Over extraction	Means a bitter flavour development in the coffee.
Froth	The use of steam to heat and texture the milk
Crema	The caramel coloured layer that should be present on top of all espresso coffee
Shot	A single 30ml extraction of espresso

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MILK

We have already discussed the hygiene and food safety issues earlier in the workbook including the safe storage of milk.

Equipment required

Jugs used for the foaming and texturing of milk for espresso coffee beverages should be metal and cleaned regularly. These should be stored in the refrigerator to be kept cold. Cold milk and cold jugs help in the texturing process, as they make the process faster, which is more efficient and helps to create a more velvety foam.

It is useful to have a variety of jugs, of different sizes to ensure that there is always a clean jug when you need one. Also having a separate labelled jug for lactose free milk or soy is also required to meet customer dietary requirements and/or preferences.

Thermometers are used in some cafes to ensure the consistency of the temperature of the milk. When learning to texture milk it is a good idea to use a thermometer to ensure the correct temperature of above 60°C is achieved.

Types of milk commonly used to produce a variety of coffee types

Your customers may request their coffee is made from a particular type of milk product:

- Hi Low
- Soy
- Skim
- Full cream
- Cafe milk e.g. Riverina Fresh
- Almond

Full cream produces the best quality product but you must always make coffee to the customer's preference.

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Method for steaming milk

You need to be able to steam and froth milk for the service of coffees, such as the flat white, cappuccino and café latte. Here are some points for steaming milk:

Equipment:

- An espresso machine already on and warmed up.
- A stainless steel jug, which is kept icy cold.
- Very cold milk. – milk should always to stored in the fridge at 0-4◦C. Milk needs to be returned to the fridge immediately after use.
- Thermometer

Method:

1.	Pour the fresh, cold milk into the jug (try to steam only as much milk as you need at a time, but never fill the jug more than half way).
2.	Purge the steam wand for about 3 seconds to bleed off excess moisture.
3.	Place the tip of the steam wand just below the surface of the milk, opposite the jug's handle, and without it touching the sides. You can use the lip of the jug to support the wand.
4.	Tilt the jug slightly towards you so that the enters the milk at a 45° angle and turn on the wand to start heating the milk. This will make the milk go into a whirlpool motion. If there is a screeching sound alter the angle of the jug until the sound disappears
5.	As the milk rises (expands) lower the jug so the steam wand sits closer to the surface of the milk
6.	Check the temperature (either with the thermometer or your hand at the bottom of the jug)
7.	Immerse the steam wand completely into the milk
8.	Continue to heat the milk until it reaches 60°C and then turn off the steam wand. Listen to the sound of the milk texturing, if it sounds unpleasant then alter the position or turn off to avoid overheating.
9.	Clean the steam wand immediately with a damp cloth (colour coded), purge the wand
10.	Swirl the milk and keep it moving to give it a shiny appearance
11.	Pour immediately – milk that sits around on the bench for a while will cool and go into the danger zone and will also cause the milk and foam to separate.

Hint: The frothing process is achieved by forcing steam through cold milk, not by boiling the milk. If the jug becomes too hot to touch, turn off the steam because the milk has been burnt. Discard immediately! Do NOT use!

Safety Tips: Remember to turn the steam wand all the way on to ensure you have sufficient pressure to texture the milk. Be careful steam and hot milk are dangerous; ensure that you are confident in texturing the milk and the use of the steam wand. When purging ensure you do it away from the body and warn

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anyone else on the machine of what you are doing. Always follow your training and the manufacturer instructions for use of the coffee machine and grinder.

Milk Coffee vs Black Coffee

Coffee orders will include both coffee requiring milk and coffees without milk. It is important to ensure that all customer orders are done in the correct sequence so that all customers receive a consistent quality coffee.

Coffee's that require milk should always be made first as the milk helps to hold the beverage together whilst the black coffee is made. If made the other way around the crema on the black coffee would start to disperse and wouldn't be appropriate to serve to the customer.

If an order comes in for milky coffee's requiring foam e.g. Cappuccino or Latte, and a Flat white – always pour the foamy coffee first – the cappuccino then the flat white, to ensure that sufficient foam is attributed to each coffee correctly.

There are many tips that can be learnt within industry, and each cafe will have their own method. Just ensure that the methods used within any venue you work in are hygienic and produce a quality product.

How to make espresso coffee:

Espresso coffee is made, or poured, using the following method:

1. Use a one-spout filter holder.
2. Fill the filter holder with approximately 7-9 grams of finely ground coffee..
3. Level the coffee, clean the coffee grounds off the rim and the top of the lugs filter head.
4. Use a tamper to press the coffee firmly, using a twisting motion
5. Quickly run some hot water through the group head to clean any old grounds and warm the surface.
6. Lock the filter holder into the machine, and place a warmed demi-tasse cup or glass under the spout.
7. Push the button for the espresso setting - pour for approximately 27- 32 seconds, to produce 30 mls. of coffee.

Result: A small cup/glass containing 30mls of hot, black coffee with a golden head of coffee crema. The coffee crema, comes from the extraction process and adds a hint of bitterness to the coffee.

Important Note: if you over extract (i.e. more than 30 mls. per 7grams) the coffee will be unpleasantly weak. (Over-extraction shows as whitish streaks or foam on top of the coffee). If you under extract the coffee will be unpleasantly bitter

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An average coffee has:

- Dosage – 7-9 grams of coffee per serve
- 30-35ml of coffee poured from the above dose is considered to be a standard espresso
- Length of time to extract a standard espresso is between 27-32 seconds

If extraction takes longer than 27-32 seconds this can indicate the grind is to fine or the quantity of coffee is too large.
If extraction time is less than 23 seconds the grind is too course or the quantity of coffee is too small.

Coffee styles and service methods

Espresso coffee is used as a basis for European or Italian style coffees such as:

Espresso	Cappuccino
Short Macchiato	Café Mocha
Long Macchiato	Long Black
Flat white	Ristretto
Café Latté	Piccolo Latté

Short Macchiato (traditional)

The word Macchiato is Italian for stained, or tainted. Traditionally this coffee is an espresso with a dash of milk and foam to stain the coffee, thereby creating 3 layers.

- A measure of espresso coffee
- Add a dash of heated milk
- Top with a teaspoon of foam

The West Australian alternative is known as a **Short Macchiato** and is made as follows:

- A measure of espresso coffee
- Pour creamy textured milk into the glass filling to the top and leave 1cm of foam
- Draw crema to the surface of the coffee

Serving style

The macchiato is served in a glass (100ml glass) or demi-tasse cup with a paper serviette and a spoon on the saucer.

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Long Macchiato (traditional)
. A long macchiato is made from:

- Place 100mls of hot water into a latte glass.
- Extract 60 mls (a double measure) of espresso coffee on top of water.
- A tablespoon of cold milk and a dollop of foam.

The West Australian **Long Macchiato (topped up)** is made as follows:

- Extract 60 mls (a double measure) of espresso coffee into a Latte glass.
- Pour creamy textured milk into glass leaving 1cm of foam.
- Draw cream to the surface of the coffee.

Serving style
The macchiato is served in a glass with a paper serviette and a spoon on the saucer.

Long Black
A long black coffee is the largest black coffee on the menu and is made as follows:

- Place 120 mls of hot filtered water into a cappuccino cup
- Extract 50-60mls of espresso (double espresso) onto the water.
- Serve immediately

It is important that the hot, filtered water is poured **first** so that the clean water carries the flavours of the espresso and the crema is maintained.

Serving style
The long black is served in a cup with a spoon on the saucer.

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Flat white
Australia's standard flat white is served with 1/2cm foam to create a good body and texture. A good flat white is made as follows:

- A measure of espresso coffee
- Pour creamy, textured milk into the cup and fill to the top to leave 1/2cm of foam.
- Draw cream to the surface of the coffee.

NB: take care that no froth from the milk is present. The coffee should leave a visible dark ring around the edge of the cup.

Serving style
The flat white is served in a standard cup with a teaspoon on the saucer.

Caffé Latté
Also called 'café au lait', Café Latté means milk coffee.

It was designed as a morning drink and traditionally had a large portion of milk, often served in a large bowl cup so that the customer could dip their breakfast pastry in their coffee.

The Caffé Latté is designed to line the stomach with milk so that it is easier to drink more espresso throughout the rest of the day.

Serving style
A Café Latté is served in a glass with a paper serviette and a parfait spoon on the saucer.

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Latte Art

Some experienced Barista's enhance their coffees with Latte art, where they draw the crema to the surface of the coffee and with the flick of their wrist and moving the jug they can produce sometimes amazing art work in the top of the coffee.

Cappuccino

Traditionally cappuccino is made from one third milk, third coffee, third foam and is not sprinkled with chocolate or anything else. The name Cappuccino comes from the Capuchin monks as the brown of their robes resembled the brown of the Cappuccino's crema.

Cappuccino - Australian alternative is made as follows:

- A measure of espresso coffee into a cappuccino cup
- Pour dense creamy foam and milk onto the espresso
- Top up cappuccino with milk
- A sprinkling of drinking chocolate

Serving style

A cappuccino is served in a standard cup, with a teaspoon on the saucer and sprinkled with powdered drinking chocolate.

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Café Mocha

The Port of Mocha was one of the original ports to start exporting coffee to other countries including England and France. The Mocha beverage is the combination of one of the oldest accompaniments for coffee –chocolate- and is made in the same fashion as a Latte but with a shot of chocolate.

The mocha is made as follows::

- Place 10-15mls of chocolate sauce in Latte glass
- A measure of espresso coffee (use the heat of the coffee to 'melt' the chocolate sauce, but ensure it is mixed)
- Pour creamy, textured milk into the Latte glass and fill to the top to leave 1cm of foam
- Draw crema to the surface of the coffee and half sprinkle to suggest half coffee, half chocolate.

Serving style

The mocha coffee is served in either a glass or standard cup, with a paper serviette and parfait spoon on the saucer.

Ristretto

A Ristretto is traditionally a short shot of Espresso. It still requires the same amount of ground coffee to be put into the group handle as a regular espresso, however only the first 15-20ml is to be extracted, and then you stop the water flow. The first part of an extraction is most concentrated and more sweet as the grounds has less time against the heat of the machine to cause the bitter taste. Also fewer coffee compounds, such as caffeine are extracted.

Serving style

Serve in an espresso cup or glass. Ensure to serve promptly to avoid the crema dispersing.

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Piccolo Latte

When translated from Italian it means ‘baby latte’. A Traditional Piccolo latte is a single Ristretto shot (15-20ml) served in a 100ml glass and then topped up with warm silky milk. It is very similar to the ‘topped up’ short macchiato, but using a Ristretto shot. It is sometimes also referred to in Australia as a ‘low-tide latte’.

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ACCOMPANIMENTS AND GARNISHES

There are a number of accompaniments and garnishes that can be served with espresso coffee beverages. Please ensure that you follow the standard recipe for the establishment in which you work to ensure consistency of product to the customer.

Accompaniments can include:

- Chocolates
- Biscotti
- Sugar/sugar substitutes such as sweeteners, honey
- Flavoured syrups – caramel, mint
- Liqueurs
- Hot or cold milk on the side

Garnishes can include:

- Chocolate sprinkles
- Cinnamon sprinkles
- Latte art
- Marshmallows

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MAINTAINING ESPRESSO EQUIPMENT AND MACHINERY.

Hygiene and equipment maintenance

Equipment used in your workplace is designed to make your job easier. All equipment must be treated with care, as most of it is expensive and to ensure it lasts. For equipment to achieve its maximum life, it needs to be maintained regularly. Cleaning is an important part of equipment maintenance. Equipment should always be cleaned and serviced according to the manufacturer's instructions.

Hygiene

It is important that all equipment in your establishment be kept clean. If equipment is not hygienic it can cause food poisoning. Cleaning of equipment is an integral part of all training and learning and should be considered as important as learning how to make coffee. It is important that your work practices ensure equipment is cleaned and sanitised on a regular basis.

Colour coded cloths should be used throughout service to keep the coffee machine and surrounding area clean and tidy. One cloth should be used only for the steam wands, and should be kept on the cup warming tray away from the bench, and another to wipe the drip tray, and bench down throughout service to maintain a professional image of the establishment.

Every establishment has its own procedures for maintaining and cleaning equipment. Find out what these procedures are for your establishment. If you are not sure how to clean any equipment, ask your supervisor. If your supervisor is unsure, you should ask him or her to contact the manufacturer.

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CLEANING THE ESPRESSO MACHINE

It is important to clean the espresso machine at least once a week with a non-toxic detergent; the frequency of the cleaning will depend on the number of coffees your establishment's produces. Some components of the espresso machine need to be cleaned more regularly.
Make sure you follow the manufacturer's instructions and SDS for cleaning.

Back flushing the group heads

The group heads should be cleaned at least once a day with a special brush. Before turning the machine off at the end of the day, back flush each group by inserting the blind filter (a filter without the filtering 'holes') in the double spout filter holder instead of coffee.
Start the coffee cycle and lock the filter holder into the head. Repeat this process two or three times until the water becomes clear.

Remove the filters from the filter holder by carefully prizing the filter rim from the filter holder with a spoon. Wash carefully with hot water and if required soak in chemical, as directed by the manufacturer. Ensure thoroughly dried.

Brushing out the dosing chamber

The dosing chamber on the grinder needs emptying of any ground coffee and cleaning with a brush. Place any leftover ground coffee in an air tight container to be used for test extractions for the following day. Try not to get any water in the doser chamber, as this will cause the ground coffee to clump.

Bean hopper

Empty any beans left in the hopper back into the bag and place in an airtight container. Wash out the hopper and thoroughly dry.

Cleaning Group Heads

These should be regularly flushed throughout service, but at the end of the day these should be flushed through and a small brush is used to clean the underside of the group head to remove any coffee particles. By flushing through with water this also helps to clean through the drainage pipes below the drip tray, of any dirty coffee water.

Washing Drip trays

The drip trays can be removed and washed, these then need to be dried and returned to the machine once the bottom of the drip tray has been wiped down.

Steam wands

These should be cleaned and purged after every use. At the end of the day purge the wands and wipe down. Nozzles can be removed and cleaned with a

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narrow brush to remove any caked on milk inside.

Wiping down entire machine

Once everything else has been cleaned, wipe over the full machine to ensure clean. Most machines are stainless steel, so it is important to ensure they are polished and left smear and water mark free. Point the steam wands down towards the drip tray and turn off the machine

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EQUIPMENT PROBLEMS

Never operate faulty equipment. You could be badly hurt. Put a warning tag on the equipment, so others know that the equipment is faulty.

From time to time you will have problems with equipment. It is important that the faults are reported as soon as possible. That way they can be fixed quickly.

Each establishment will have its own system of reporting faulty equipment.

Troubleshooting in coffee making

Problem	Possible Causes	How to fix it
Dark layer of crema	1. Overdose – too much coffee 2. Tamping too hard 3. Coffee ground too fine 4. Equipment dirty 5. Water temperature too high	1. Check dosage 2. Tamp softer 3. Adjust grinder 4. Clean the equipment 5. Call service technician
Pale layer of crema	1. Under dosed 2. Not tamped hard enough 3. Coffee ground too coarse 4. Stale or oxidised coffee 5. Water pump pressure too low 6. Water temperature too low	1. Increase dosage 2. Tamp harder 3. Adjust grinder 4. Grind fresh coffee 5. Call service technician 6. Call service technician
Coffee tastes weak	1. Coffee dosage too low 2. Not tamping hard enough 3. Dosing compartment nearly empty 4. Coffee grind too coarse 5. Too much water used 6. Water temperature too low	1. Check dosage 2. Tamp harder 3. Fill to over half full 4. Adjust grinder 5. Adjust water quantity 6. Call service technician
Coffee tastes too strong	1. Coffee dosage too high 2. Tamping too hard 3. Coffee grind too fine 4. Not enough water used	1. Check dosage 2. Tamp softer 3. Adjust grinder 4. Adjust water quantity
Coffee tastes rancid	1. Stale coffee 2. Espresso machine not clean 3. Grinder not clean 4. Water	1. Use fresh coffee beans 2. Clean espresso machine 3. Clean grinder 4. Ensure good water is used
Thin layer of crema	1. Underdosed 2. Coffee ground too coarse 3. Stale coffee 4. Pump pressure too low	1. Check dosage 2. Adjust grinder 3. Use fresh coffee beans 4. Call service technician

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Espresso too cold	1. Machine not ready 2. Cups/glasses not pre-warmed 3. Water temperature too low	1. Check pressure 2. Warm cups/glasses 3. Call service technician
No crema	1. Stale coffee 2. Incorrect pump pressure 3. Water hardness	1. Use new coffee beans 2. Call service technician 3. Contact service technician to replace water softening device
Gaps in the layer of crema	1. Coffee ground too coarse 2. Stale coffee 3. Pump pressure too low 4. Equipment dirty 5. Blunt grinding discs or burrs	1. Adjust grinder 2. Use fresh coffee beans 3. Call service technician 4. Clean equipment 5. Contact technician to check discs or burrs
Lack of milk foam	1. Incorrect heating technique such as: • Trying to reheat milk • Cooking or boiling milk • Steam wand too far into the milk	1. Practice your technique • Throw away any left-over milk • Do not over heat the milk • Insert steam wand just under the surface of the milk
Wet cake after extraction	1. Coffee grounds too fine 2. Too much pressure applied to tamp	1. Check and adjust the grind 2. apply even pressure to the tamp

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ENVIRONMENTAL CONSIDERATIONS

How can you use energy and water resources efficiently when preparing coffee and cleaning equipment, in order to reduce the environmental impacts?

- Reduce the amount of water used for cleaning specific equipment and also eliminate unnecessary re-cleaning of equipment.
- Change cleaning procedures to begin cleaning before using water
- Check for leaks, report and have them repaired.
- Ensure regular service – every 3 months – major service every 6 months- to ensure equipment is operating efficiently.
- When purchasing equipment, choose energy efficient and eco friendly machines
- Ensure you have received adequate training and are confident in making coffee, steaming milk and cleaning the equipment to reduce waste of coffee, and milk.
- Ensure problems (e.g. those mentioned in the troubleshooting table) are addressed adequately and in a timely manner
- Follow organisational procedures and manufacturer instructions
- Ensure machine is switched off at end of day(some cafe's leave their machines on overnight to save energy and time setting up)
- Recycle used coffee grounds/pucks – can be used for compost and in worm farms
- Use any leftover ground coffee (if set up correctly and follow the "grind as you go " rule there shouldn't be much) for seasoning the machine and completing test shots, rather than throwing in the bin.
- Use recycled paper take away cups and trays.

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