**Practicing Safety Making Coffee in the Lab**

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Partners: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Block: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Purpose**

To practice safe lab procedures by brewing coffee through the drip method. You will also learn the names and set up of commonly used pieces of science lab equipment.

**Materials**

 2x 250 ml beaker(s)

1 x 100ml beaker

Beaker tongs

Ring stand

Funnel

Filter paper

Hot plate

Ring stand

Ring clamp

Ground coffee

Electronic balance

Safety goggles

Spoon/ spatula

Wash bottle filled with water

Stir rod

**Procedure:**

1. Put on safety goggles and clear your desk.
2. Fill a 250ml beaker with 150 ml tap water and place it on hot plate. Set heat to medium high.
3. Take the mass of a 100ml beaker using the scale and *record* the mass in the data chart below.
4. With the beaker still on the scale, add about 3-4 full scoops of coffee to your beaker. Record the new mass (coffee + beaker) in the data chart below.
5. Calculate how much coffee you have by subtracting the mass of the beaker from the total mass (coffee + beaker). Enter this value in the data chart below.
6. Attach ring clamp to ring stand. Place funnel through ring clamp.
7. Flute (fold) a circular filter paper so it fits into the funnel. *Lightly* wet the filter paper with a wash bottle to hold it the filter in place. Do not soak the filter.
8. Place another (empty) 250ml beaker **below** funnel. This will be your collection beaker. Adjust the height of the funnel so the end of the funnel is *just below the top of the bottom beaker*.
9. Pour the coffee grounds from the small beaker into the filter.
10. When the water in the first beaker starts to boil, use the beaker tongs to pick it up and pour hot water slowly into the funnel and filter containing the coffee. Pour a little bit at a time making sure not to overflow the filter. Use the stirring rod to mix the coffee but try not to touch the filter paper or it might tear.
11. When the coffee stops flowing into the collecting beaker, brewing if finished. Clean up. Compost the filter paper and coffee ground. Wash all equipment and return all to proper bins.

**Data and Observations:**

|  |  |
| --- | --- |
| Mass of beaker and coffee grounds |  g |
| Mass of empty beaker |  g |
| Mass of coffee grounds added to the funnel |  g |

Sketch the final set up of your equipment. **Label all the pieces of your equipment.**

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**Discussion:**

1. In your opinion, what TWO lab safety rules were the MOST important for students to follow in today’s lab? Explain and prove reasoning.

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1. Why was it necessary to lower the funnel close to the collection beaker?

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1. If you were to brew coffee in this manner again, what are TWO things you would do to improve your results? Explain by providing evidence and reasoning.

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