Name: _____ Period: _____ Date: _____

Laboratory Procedures Assignment – Teacher Edition

I. True or False

Decide whether the given statement is true or false. If the statement is false, provide an explanation to make the statement true and correct.

1. Laboratory techniques are processes and practices that are recommended for using various equipment in the laboratory.

_____

2. A pipette is used to transfer large amounts of liquid in a vessel.

_____

3. It is necessary to keep the stopper from the reagent bottles hanging when transferring its content.

_____

4. Grasp the reagent bottle on its neck when pouring it.

_____

5. Use a stirring rod to transfer liquids in a narrow-mouthed container.

_____

6. A filter paper is porous material that separates liquid from solid residue.

_____

7. When transferring liquids to a test tube, it should be held at an eye level.

_____

8. A beaker is more accurate in measuring volume of liquid than a graduated cylinder.

_____

9. In heating, Bunsen burner is used when there is a need to use blue flame in heating substances.

_____

10. A Bunsen burner uses denatured alcohol in order to function.

_____

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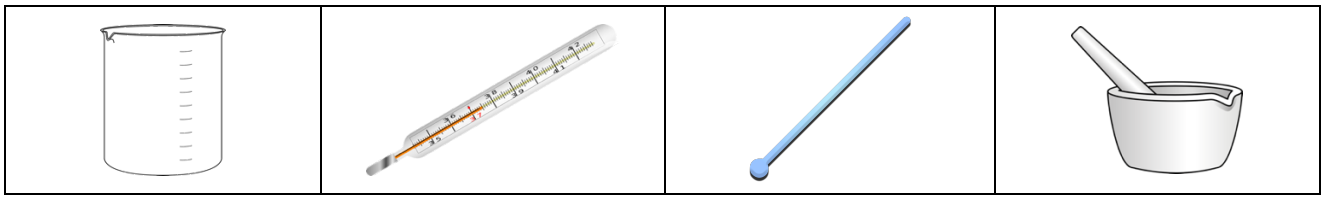
Laboratory Procedures Assignment – Teacher Edition

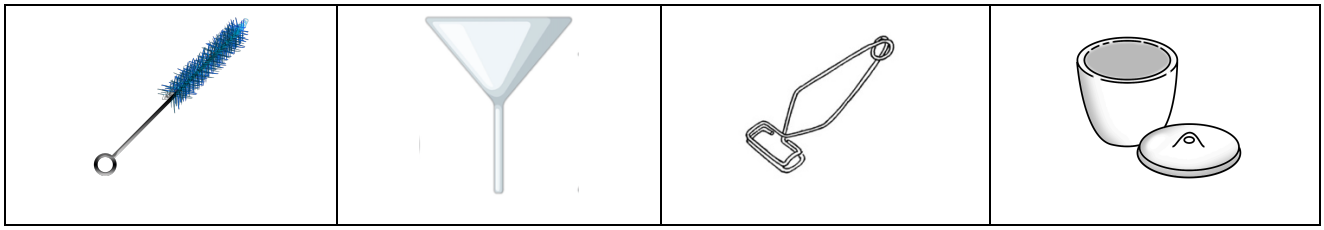
II. Identification

Encircle the laboratory equipment used to perform the following laboratory operations.

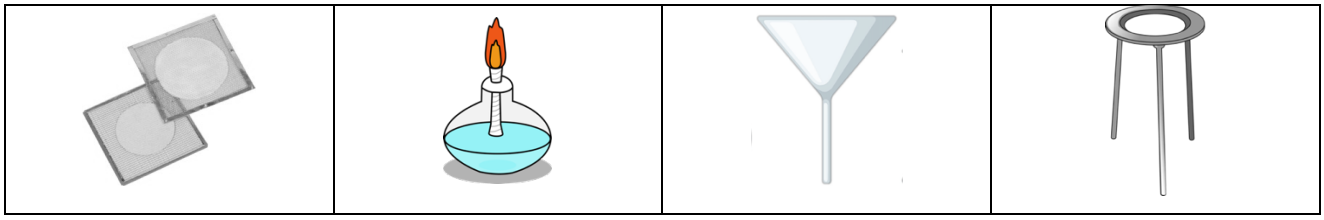
1. Transferring liquids to a wide mouthed container



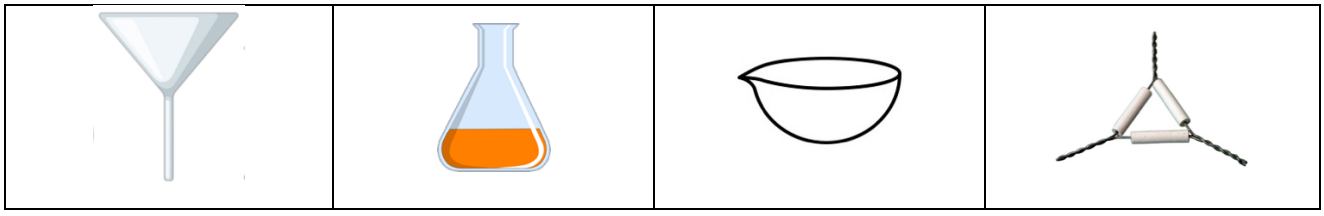
2. Transferring liquids to a narrow-mouthed container



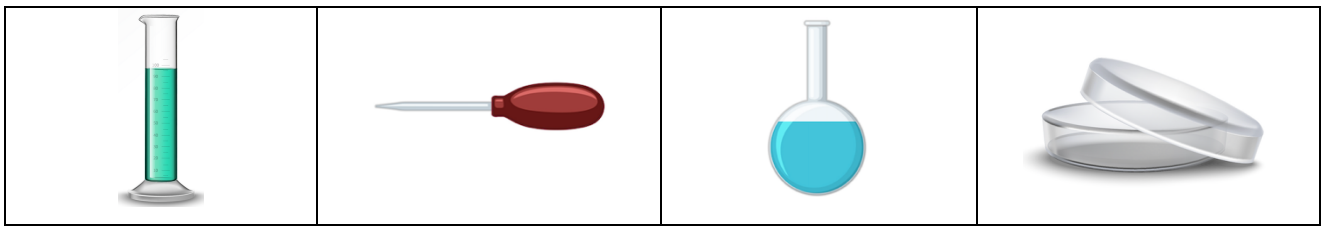
3. Heating substances in a beaker



4. Filtering heterogeneous mixture



5. Measuring volume of solid through water displacement method



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Name: _____ Period: _____ Date: _____

Laboratory Procedures Assignment – Teacher Edition

III. Sequencing Events

Arrange the steps in performing each laboratory procedure. Write the correct **number** of steps on the blank.

Transferring Liquids Using a Stirring Rod

_____ Slowly pour the contents from the reagent bottle onto the stirring rod.

_____ Hold the stirring rod upright and let it touch the lip of the empty beaker.

_____ Prepare the vessel and stirring rod as well as the reagent bottle with liquid substance.

_____ Open the reagent bottle and hold it in the middle with the palm covering the label.

Filtering

_____ Wet the filter paper with water until it perfectly fits in the glass funnel.

_____ Fold the filter paper into a cone shape.

_____ Pour the contents of the mixture to be separated onto the funnel with filter paper.

_____ Insert the filter paper in the glass funnel.

_____ Place the funnel with filter paper in a flask with its tube inserted inside.

Heating a Substance in a Test Tube

_____ While heating, move the test tube back and forth.

_____ Hold the test tube with the substance to be heated with a test tube holder.

_____ Light the alcohol lamp using a matchstick.

_____ Heat the test tube just below the surface of the liquid but not at the bottom.

Measuring Mass Using a Triple Beam Balance

_____ Check if the pointer is aligned with the zero mark to check if it is calibrated.

_____ With the pan empty, move the three sliders on their leftmost positions.

_____ Add the total mass of the three riders to determine the mass of the object.

_____ If the balance is not calibrated, turn the adjustment knob on the left side, under the pan.

_____ Move the slides starting from 100-gram, to 10-gram, then to 1-gram.

_____ Once the balance is calibrated, put the object to be measured on the pan.

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Laboratory Procedures Assignment – Teacher Edition

Measuring Volume of a Solid through Water Displacement Method

_____ Fill the graduated cylinder with adequate water.

_____ Record the volume of water prior to submerging the object.

_____ Find a graduated cylinder that is large enough to hold the object being measured.

_____ Subtract the volume of the water alone from the volume of the water with submerged object.

_____ Put the solid to be measured in the graduated cylinder with water.

_____ Record the volume of water with submerged solid object.

IV. Providing Explanations

Answer the following questions.

1. When is pipetting best used?

_____

_____

2. In pipetting, why should the tip of the pipette not touch bottom of the container of liquid being transferred?

_____

_____

3. Differentiate the following terms:
    a. Filtering and decanting

_____

_____

    b. Decant and supernatant

_____

_____

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Laboratory Procedures Assignment – Teacher Edition

c. Filtrate and sediment

_____

_____

d. Gas valve and collar

_____

_____

e. Yellow flame and blue flame

_____

_____

4. Why is pumice stone added to a beaker when boiling liquids?

_____

_____

5. Why is yellow flame considered dangerous?

_____

_____

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Name: _____ Period: _____ Date: _____

Laboratory Procedures Assignment – Teacher Edition

I. True or False

Decide whether the given statement is true or false. If the statement is false, provide an explanation to make the statement true and correct.

1. Laboratory techniques are processes and practices that are recommended for using various equipment in the laboratory.

   True

2. A pipette is used to transfer large amounts of liquid in a vessel.

   False. A pipette is used to transfer small amounts of liquid in a vessel.

3. It is necessary to keep the stopper from the reagent bottles hanging when transferring its content.

   False. The stopper must be held between fingers and not kept loose until the transfer is complete.

4. Grasp the reagent bottle on its neck when pouring it.

   False. The reagent bottle must be held in its body when pouring its content.

5. Use a stirring rod to transfer liquids in a narrow-mouthed container.

   False. A funnel is used to transfer liquids in a narrow-mouthed container.

6. A filter paper is porous material that separates liquid from solid residue.

   True

7. When transferring liquids to a test tube, it should be held at an eye level.

   True

8. A beaker is more accurate in measuring volume of liquid than a graduated cylinder.

   False. A graduated cylinder is more accurate in measuring volume of liquid than a beaker.

9. In heating, Bunsen burner is used when there is a need to use blue flame in heating substances.

   True

10. A Bunsen burner uses denatured alcohol in order to function.

    False. A Bunsen burner uses gas in order to function.

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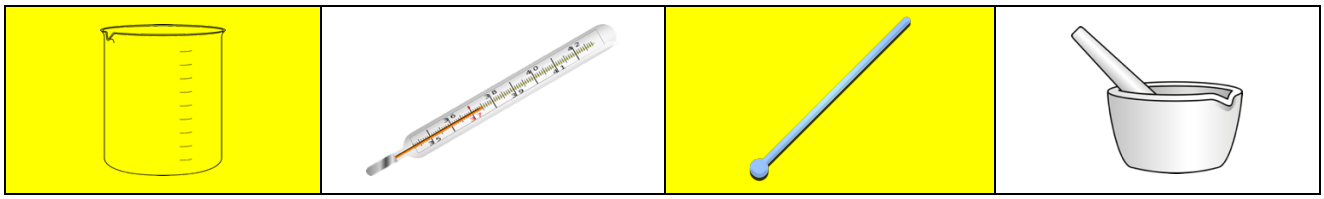
Laboratory Procedures Assignment – Teacher Edition

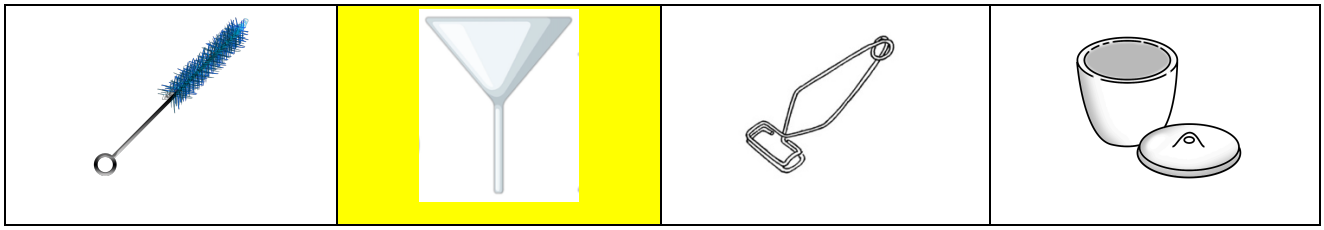
II. Identification

Encircle the laboratory equipment used to perform the following laboratory operations.

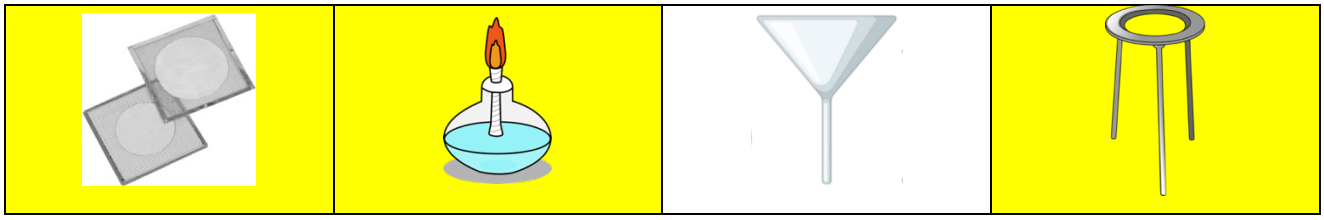
1. Transferring liquids to a wide mouthed container



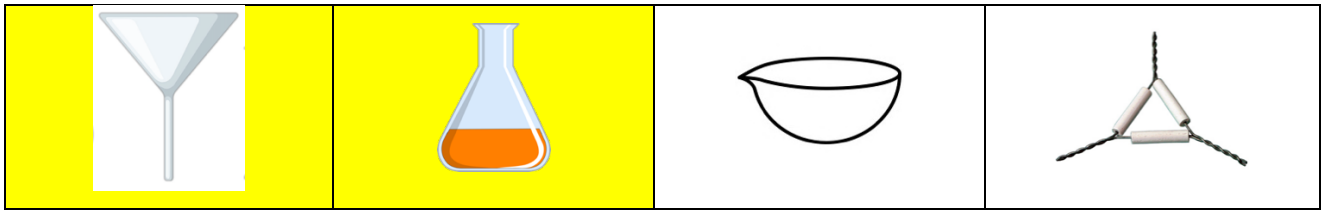
2. Transferring liquids to a narrow-mouthed container



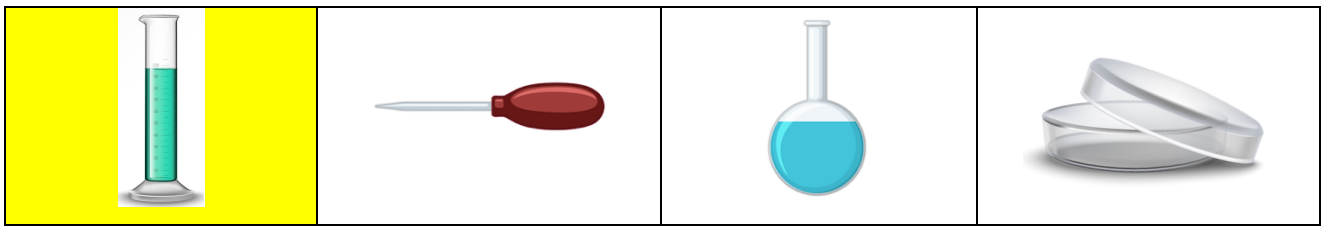
3. Heating substances in a beaker



4. Filtering heterogeneous mixture



5. Measuring volume of solid through water displacement method



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Name: _____ Period: _____ Date: _____

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III. Sequencing Events

Arrange the steps in performing each laboratory procedure. Write the correct **number** of steps on the blank.

Transferring Liquids Using a Stirring Rod

4 Slowly pour the contents from the reagent bottle onto the stirring rod.

3 Hold the stirring rod upright and let it touch the lip of the empty beaker.

1 Prepare the vessel and stirring rod as well as the reagent bottle with liquid substance.

2 Open the reagent bottle and hold it in the middle with the palm covering the label.

Filtering

3 Wet the filter paper with water until it perfectly fits in the glass funnel.

1 Fold the filter paper into a cone shape.

5 Pour the contents of the mixture to be separated onto the funnel with filter paper.

2 Insert the filter paper in the glass funnel.

4 Place the funnel with filter paper in a flask with its tube inserted inside.

Heating a Substance in a Test Tube

4 While heating, move the test tube back and forth.

2 Hold the test tube with the substance to be heated with a test tube holder.

1 Light the alcohol lamp using a matchstick.

3 Heat the test tube just below the surface of the liquid but not at the bottom.

Measuring Mass Using a Triple Beam Balance

2 Check if the pointer is aligned with the zero mark to check if it is calibrated.

1 With the pan empty, move the three sliders on their leftmost positions.

6 Add the total mass of the three riders to determine the mass of the object.

3 If the balance is not calibrated, turn the adjustment knob on the left side, under the pan.

5 Move the slides starting from 100-gram, to 10-gram, then to 1-gram.

4 Once the balance is calibrated, put the object to be measured on the pan.

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Laboratory Procedures Assignment – Teacher Edition

Measuring Volume of a Solid through Water Displacement Method

2 Fill the graduated cylinder with adequate water.

3 Record the volume of water prior to submerging the object.

1 Find a graduated cylinder that is large enough to hold the object being measured.

6 Subtract the volume of the water alone from the volume of the water with submerged object.

4 Put the solid to be measured in the graduated cylinder with water.

5 Record the volume of water with submerged solid object.

IV. Providing Explanations

Answer the following questions.

1. When is pipetting best used?

   Pipetting is best used in measuring and transferring small amounts of liquids.

2. In pipetting, why should the tip of the pipette not touch bottom of the container of liquid being transferred?

   When the tip of the pipette touches the bottom of the container, it will prevent the aspiration of liquids and lead to the formation of bubbles.

3. Differentiate the following terms:

   a. Filtering and decanting

      Filtering uses a porous material to separate the components of a heterogeneous mixture while decanting allows the sediments to settle at the bottom of the container before pouring out the supernatant in another vessel.

   b. Decant and supernatant

      Supernatant is the clear liquid that separates from the sediment while decant is the liquid collected upon decanting.

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c. Filtrate and residue

Filtrate is the liquid collected after the mixture passes through the filter paper while residue is the solid substance collected on the filter paper after filtration.

d. Gas valve and collar

Gas valve is used to regulate the amount of gas that enters the barrel of the Bunsen burner while collar is used to regulate the amount of air that enters the barrel.

e. Yellow flame and blue flame

Yellow flame is less hot, highly visible, and has a limited access to oxygen while blue flame is hotter, harder to see, and has an unlimited access to oxygen.

4. Why is pumice stone added to a beaker when boiling liquids?

Pumice stone is added to a beaker when boiling liquids to avoid bumping. It facilitates the formation of bubbles to prevent bumping from happening.

5. Why is yellow flame considered dangerous?

Yellow flame is considered dangerous due to its limited access to oxygen which leads to incomplete combustion. It also produces a lot of soot which can be harmful.

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