**Chem 11 Name(s):\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**The Mole Unit Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Dilutions Block: \_\_\_\_\_\_\_\_**

**INSTRUCTIONS:** This lab MUST be completed by the end of class TODAY! You must work in a group of **TWO** and ONLY in your group. The use of cell phones or other classmates may result in a zero for your group and the other group! Only one lab sheet needs to be handed in per group. All work must be shown *(where necessary)* and **sig figs** count for full marks. You need to **assume** that there is NO solution *lost* when transferring between apparatus. *Note: ALL lab report rules apply when completing this lab!*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Beginning** | **Developing** | **Accomplished** | **Exemplary** |
| **Calculations** | o Calculations ***have not*** communicated understanding of the concepts covered in this lab. | o Calculations ***somewhat*** communicates understanding of the concepts covered in the lab. | o Calculations ***mostly*** communicates understanding of the concepts covered in this lab. | o Calculations ***clearly*** communicates understanding of the concepts covered in this lab. |

**Step#1**: Complete the following calculations **BEFORE** you pick up any apparatus or chemicals. You **MUST** show your work and answer to Lawson before you can begin the lab!

Q: The delightful Mr. Trask dissolved 50.0 g of ammonium phosphide in distilled water to make a 250.0 mL solution. ***What is the concentration of the sol’n?***

Q: The mischievous Ms. Langlois decided to sabotage Trask’s solution by adding 0.11 L of water. What is the resulting concentration of the solution?

**Step#2:** Once that star to the right has been initialed by your teacher, go ahead and pick up the

following apparatus:

**(1)** – 100mL graduated cylinder

**(3)** – 250mL (OR 400mL) Beakers

**Step#3:** DECISIONS, DECISIONS… Now, its time to choose the path… Choose wisely young Chemistry Jedi’s ;)

 **Choose a Starting solution**… *(think elementary school)* or Primary Colours! You are required to place a **precise** amount of ONLY ONE of the solutions in one of your beakers. Your group MUST measure out a precise amount between **35mL – 55mL**. You have your choice of:

**1.69M BLUE solution**

**0.88M RED solution**

**0.420M YELLOW solution sosolution**

 **OR OR**

Data: Draw a line from your chosen sol’n box above to this box and record your precise volume:

What is the resulting concentration of your solution after the water was added:

Calculate the number of moles for your COLOUR:

Determine the number of moles for your COLOUR:

**Step#4:** Add a **precise** amount of water to your solution. Any amount between **25mL – 75mL**. Record your data:

**STEP#5:** DECISION#2: Choose a secondary colour: **You must show your teacher what colour**

 **Your group chose before you can move**

Teacher

Initials:

What primary colour will make this happen? **on to step #6… Get those initials!**

**Step#6:** Go back to the *side bench* to obtain a **precise** amount of the *primary colour* you need in a

second beaker. You must obtain an amount between **60mL – 80mL**. Record data:

Calculate the number of moles for your COLOUR:

**Step#7:** Add the **two** solutions together into one of the beakers. What colour do you observe?

Determine the number of moles for **EACH** of COLOURS:

Calculate the resulting concentration(s):

**STEP#8:** Go make some ‘mud’… Add a **precise** amount of the *final* primary colour available to you. Obtain an amount between **10mL – 30mL**. Add this amount **directly** to your solution from step#**7**. Record data:

Determine the number of moles for **ALL THREE** COLOURS:

Calculate the resulting **[BLUE]**: *Note: “* [BLUE]” = “concentration of BLUE”

**Now, hand in this lab before that bell rings!**