**Unknowns Lab Teacher Notes**

Set up 6 pipettes in a ziploc bag for each lab group.

Have 2 pipettes of each of the following solutions:

* Vinegar (dilute with a little water)
* Baking soda solution (1 tablespoon of baking soda in 200mL of water)
* Alum solution (find alum at the grocery store in the spice section) (1 teaspoon of alum in 200mL of water

Label 3 of the pipettes with letters (example: A,B,C, etc.)

Cut an overhead transparency into 4 squares. Put 2 squares in the ziploc bags with the 6 pipettes

One of the students will get the letters and one will get the numbers.

Students will not talk during the lab. They can communicate by “texting” each other on white notebook paper.

Students should make observations about what they see when they mix the chemicals together and drop some on the transparency squares.

They should observe the following

|  |  |  |  |
| --- | --- | --- | --- |
|  | Vinegar | Baking Soda | Alum |
|  |  |  |  |
| Vinegar | X | Bubbles | No reaction |
|  |  |  |  |
| Baking soda | Bubbles | X | White precipitate |
|  |  |  |  |
| Alum | No reaction | White precipitate | X |
|  |  |  |  |

Make yourself a Key to refill the pipettes and for grading. When you fill your pipettes, put your chemicals in a beaker labeled with X, Y, and Z so that you can refill quickly during and between classes and the students will not know what the actual chemicals are. A sample key is given below:

X – Vinegar

Y – Baking Soda

Z – Alum

1 – X A – Z

2 – Y B – X

3 – Z C – Y

4 – X D – Y

5 – Y E – X

6 – Z F – Z

Students should write up their procedure using the scientific method and include a key of which pipette numbers match which letters in their group.