

# Emission Spectra and Flame Test Notes

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

## Electrons and Light:

- we have been writing configurations for electrons in their \_\_\_\_\_
- electrons do not always stay in their \_\_\_\_\_ (\_\_\_\_\_)
- electrons can move to a \_\_\_\_\_ which we call an \_\_\_\_\_

## Producing Light:

- when electrons move from their \_\_\_\_\_ to an \_\_\_\_\_, they \_\_\_\_\_
- they do not stay in the \_\_\_\_\_ forever, they will move back down to their \_\_\_\_\_
- when electrons move back down to their \_\_\_\_\_, they release a \_\_\_\_\_ called a \_\_\_\_\_
- the electron \_\_\_\_\_ energy and moves from the \_\_\_\_\_ to an excited state -- \_\_\_\_\_ to a \_\_\_\_\_

## Draw:

- the electron \_\_\_\_\_ energy (a \_\_\_\_\_) and moving from the \_\_\_\_\_ to the \_\_\_\_\_ -- \_\_\_\_\_ to a \_\_\_\_\_

## Draw:

## Emission Spectra:

- each element produces its own \_\_\_\_\_ based on the \_\_\_\_\_ in the atom
- we can \_\_\_\_\_ elements in stars far away by the emission \_\_\_\_\_ it gives off

### Types of Spectra's

Which elements are in the unknown sample?



**Flame Test & Emission Spectra Lab:**

**Name:** \_\_\_\_\_ **Period:** \_\_\_\_\_

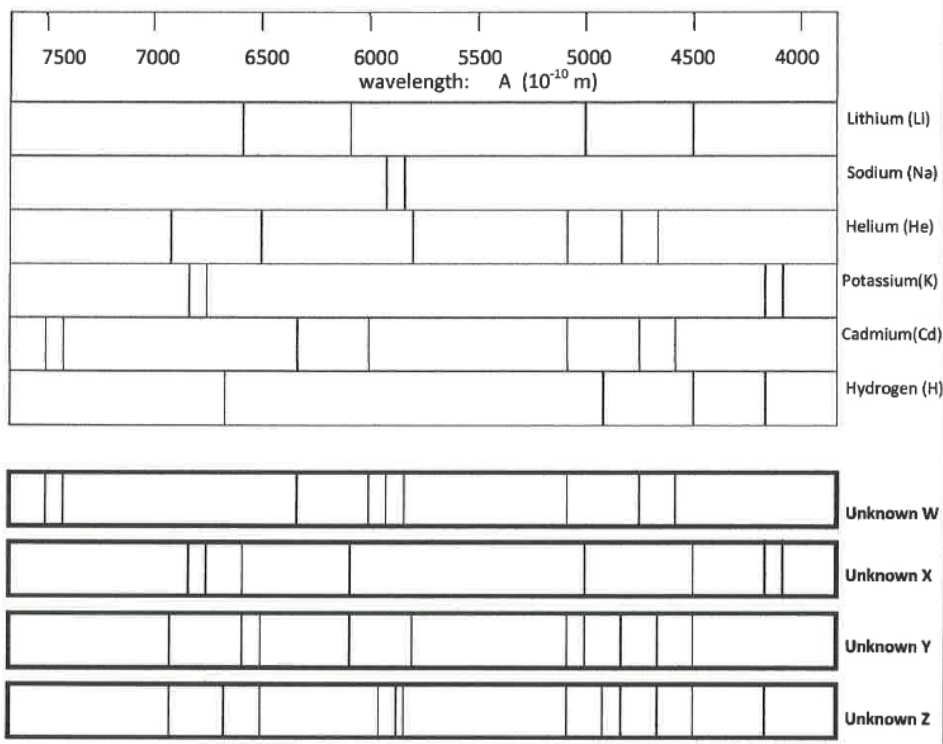
**Purpose:** In this experiment you will observe the color that various metallic elements impart to a Bunsen flame. You will then view the flame through a spectroscope and observe the spectra of each of these elements that are visible to the human eye.

1. Put on your safety goggles. If you have long hair, make sure it is pulled back.
2. Adjust the flame of the Bunsen burner to about six inches in height and one that gives off a maximum of heat. Which type of flame is the hottest?
3. Get out a medium-sized beaker and fill it half-full of water.
4. Get a Bunsen burner from the bottom cabinet and light it.
5. Take a wooden splint from the container at your table. Dip it into one of the sample containers to get a small crystal on the end of it. (NOT a big clump!)
6. Carefully place the wood splint into the Bunsen burner flame and observe the color. Do NOT let anything drip onto the Bunsen burner.
7. Place the wood splint into the beaker of water you prepared earlier.
8. Repeat this for all of your known and unknown chemicals.
9. Turn off your Bunsen burner. Replace the lids on all of your samples. Throw away your used wood splints and clean up your area before you remove your safety goggles.

Flame Test Observations:

Metal or metallic ion	Characteristic color of flame
Barium	
Calcium	
Lithium	
Potassium	
Sodium	
Strontium	
Copper	

Post Lab Questions: Determine the elements present in the unknowns:



Unknown W: \_\_\_\_\_

Unknown Y: \_\_\_\_\_

Unknown X: \_\_\_\_\_

Unknown Z: \_\_\_\_\_

