

# Flame Test Lab

Name \_\_\_\_\_

## Materials

- Goggles
- Water
- Q-tips
- Various metal compounds
- Matches
- Bunsen burner

## Procedure

1. Light the Bunsen burner at your first station.
2. Dampen a Q-tip in water. Then obtain a **small** sample of the compound at your station by dipping the Q-tip in the crystals.
3. Heat the Q-tip in the flame BRIEFLY and be careful *not to drop any crystals or pieces of the Q-tip onto the Bunsen burner*.
4. Record your observations and take a picture\* of the flame test.
5. Extinguish the Q-tip in the beaker of water and place it in the waste tray.
6. Leave the burner lit and CAREFULLY move to the next station **when directed to do so by Mrs. Hainer**.
7. Repeat steps 2 through 6 for the remaining compounds.

## Data

Ion	Flame Color/Observations
Cu	
K	
Li	
Na	
Ba	
Ca	
Sr	
Unknown #1	
Unknown #2	
Unknown #3	

## Analysis

1. List the element(s) that produced the *most* easily identified colors.
2. Which element(s) are *least* easily identified? **Explain** your answer.
3. Identify the unknown samples based on your observations.

Unknown #1 \_\_\_\_\_

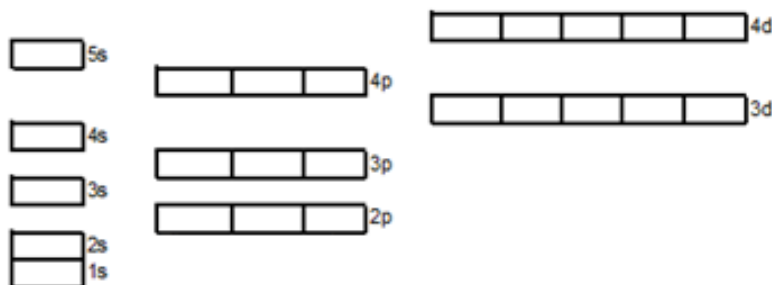
Unknown #2 \_\_\_\_\_

Unknown #3 \_\_\_\_\_

4. Would flame tests be useful for detecting an individual metal element present in a mixture of metals? Explain your answer.
5. All of the colors of visible light have different energies. List the metallic elements used in the flame tests in order of *increasing* energy of the light.

## Practice

6. Complete an orbital diagram for an atom of *calcium*.



7. Write an electron configuration for a *copper* atom.
8. Determine the noble gas notation for *strontium*.

