**Introduction/Motivation:** The production of fireworks relies upon the fact that different elements will produce different colors when exposed to a flame. This principle is also a helpful tool when it comes to determining the identity of a mystery element through a flame test. In this activity, you will simulate the flame tests of five different elements using SNAP.

**Materials List:**

Computers with access to SNAP which can be accessed from <https://snap.berkeley.edu/snap/snap.html>

**Background:** You will need to be able to use a computer that can access SNAP

**Pre-Assessment:** Discussion at beginning of class that reviews the electromagnetic spectrum and the source of light

**Lab Activity:**

Part One:

1. Open the “FlameTests.xml” SNAP file.
2. Work your way through the program by testing each element and recording the color of the flame produced when the element is put into the Bunsen burner.
3. Repeat as often as needed. This is designed to be a study tool.

Part Two:

1. When you reach the laboratory practicum portion of your quiz, please go to an open computer.
2. Open the “FlameTestsQuizzes.xml” SNAP file.
3. Proceed through the program by answering the questions posed by the program. You may test each salt available as often as you would like. The program will keep track of your right and wrong answers. There are 5 questions and they will be asked at random. A question will only be removed from the question pool once you have answered it correctly. After getting 5 correct answers the quiz will restart itself until you answer all five questions correctly with fewer than 5 wrong answers.
4. Once you have successfully completed the quiz, do not shut off the program. Let your teacher know that you have finished the quiz.

**Analysis:**

|  |  |
| --- | --- |
| Salt | Color of Flame |
| Aluminum chloride |  |
| Sodium chloride |  |
| Copper (II) chloride |  |
| Potassium chloride |  |
| Calcium chloride |  |

**References:**

Appalachian State University RET Program 2014, [www.cs.appstate.edu/ret](http://www.cs.appstate.edu/ret)