**Subject Area(s):** Chemistry

**Computer Science Tools:** SNAP

**Activity Title:** Flame Test Identification with SNAP

**Grade Level:** 10th - 12th

**Time Required:** Part I: 5 minutes; Part II: 20 minutes

**Recommended Group Size:** 1 person

**Summary:** Students will simulate flame tests of various elements using SNAP; they will observe the colors produced by the element in a flame. There are two options: a SNAP program in which students can practice and study “FlameTests.xml”, and a SNAP module set up as an in-class quiz “FlameTestsQuizzes.xml”.

**Educational Standards:**

NC Essential Standard for Chemistry 1.1.3: Explain the emission of electromagnetic radiation in spectral form in terms of the Bohr model

**Computer Science Connection:** SNAP will be used to model and simulate flame tests. Teachers have the option of allowing students to modify the code to add flame tests of other elements.

**Keywords:** Flame test, emission spectra, SNAP

**Materials List:**

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

**Teacher Notes:**

* Part I of the module is intended as a self-study tool for students. They can access the SNAP program from home and use it in their studies.
* Part II is an assessment tool. Students will follow the program’s instructions in answering the questions. Questions will be asked at random and questions will only be removed from the question pool once they are answered correctly. The quiz will restart itself until students answer all 5 questions correctly with fewer than 5 incorrect attempts. When they have completed the program, the instructor can check the total number of correct and incorrect answers for scoring purposes if they would like.
* If being used for scoring, make sure students do **not** restart the program and that they leave the final screen displayed. If students are sharing screens The instructor should check the score before the next student takes the quiz.
* Teachers have the option of allowing students to add more elements to the practice module in Part I as an enrichment exercise.

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