Scientific Investigation: Safety Matters

Overview: Safety is essential in all aspects of life. Scientists know the importance of starting with the end in mind and making sure that all steps of experiments are completed properly.

Procedure:
-Begin by asking students, "What is safety?" Then, have student's identify what they know about safety, prior experiences or examples. Brainstorm a list and write on the board.
-Next, have students be more specific to safety when completing a science lab. Provide students with pictures/words of safe and non-safe examples and have them sort as a large group.
-Introduce lab safety rules by playing a video to engage the students' attention. A catchy video works best, such as science lab safety rules found at http://www.youtube.com/watch?v=ycl0rqEv7kw .
When the video is over ask the students to identify the rules that were mentioned in the video. Using the safety examples previously listed by the class, identify which rule corresponds to each example.
-Give each student a copy of *Lab Safety Rules* poster to place in the front of the science section of the notebook or folder. (Preferably place in a protective sleeve to have for reference throughout the year.
-Pair students with a partner. Prepare a lab with a variety of lab equipment and other items that are not part of a science lab. Have the students identify items and equipment in the lab that are safe and items that are unsafe.

Examples of questions to ask the students:
-"Which shoes should you wear when conducting an experiment?" (Have different shoes for the students to pick from.)
-"How should you smell chemicals." (Demonstrate wafting.
-"How should I wear my hair?" (Provide pictures of examples and non-examples for students to choose from.)

ASOL Covered in this Activity: 8 S-SI 3 The student will demonstrate an understanding of scientific reasoning, logic, and the nature of science by planning and conducting investigations in which

a) Chemicals and equipment are used safely

Materials Needed:
-internet
-projector and screen
-lab materials- objects/pictures of beakers, goggles, shoes, hair ties, apron
-Lab safety rules (below)
-Safety Quiz (below)

Instructional Setting:
This activity is best taught in the general education science lab classroom. It can be taught in a resource classroom, but it is best practice to have typical peers involved.

Community Connections and/or Peer Interaction:
-Peer interaction involved with the "mock" lab.
-Provide additional opportunities to discuss the bigger concept of safety as it pertains to their safety in the community and at home.

Functional Activity/Routine:
-Students could conduct a small experiment.
-Reinforce the concept of safety across settings.

Strategies to Collect Evidence:
-Safety Quiz
-Anecdotal records of the students during the lab activity
-Photographs of students identifying safety procedures
-Sort picture examples of safe and non-safe behavior.

Specific Options for Differentiating this Activity:
-Use pictures and objects for students to make choices if they have limited verbal ability.

Resources:
Slowley, M. Science Lab Safety Rules (March 13, 2010). Retrieved from http://www.youtube.com/watch?v=yclOrqEv7kw

Science Lab Safety Rules Poster, 2012. Adventures with a Purpose

Lab Safety Rules

1. ALWAYS wear an apron or protective clothing when working with chemicals.
2. ALWAYS tie back loose hair.
3. ALWAYS wear goggles or safety glasses to prevent getting materials in your eyes.
4. ALWAYS read the labels on chemicals and heed all warnings.
5. NEVER eat, drink, or smell the chemicals. Rather carefully "fan" the fumes to your nose.
6. NEVER look directly into a test tube or flask. Look at the contents from the side.
7. NEVER play around during experiments.
8. ALWAYS wash your hands after handling lab materials.

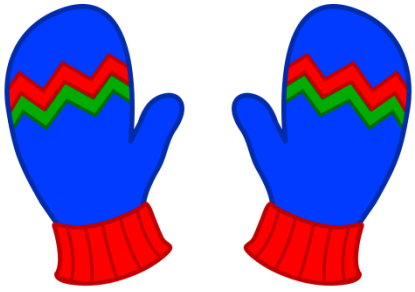
Safety Quiz

8S-SI3 (SOL PS.1) The student will demonstrate an understanding of scientific reasoning, logic, and the nature of science by planning and conducting investigations in which

b) Chemicals and equipment are used safely

Circle the Equipment you need to conduct experiments safely.

1.  

2.  

3.  

Circle the pictures that show students using chemicals and equipment safely.