Title of Lesson: Coding Lab Safety

2014 SC Science Standards:
8.S.1A.2 Develop, use, and refine models to (1) understand or represent phenomena, processes, and relationships, (2) test devices or solutions, or (3) communicate ideas to others.
8.S.1B.1 Construct devices or design solutions using scientific knowledge to solve specific problems or needs: (1) ask questions to identify problems or needs, (2) ask questions about the criteria and constraints of the device or solutions, (3) generate and communicate ideas for possible devices or solutions, (4) build and test devices or solutions, (5) determine if the devices or solutions solved the problem and refine the design if needed, and (6) communicate the results.
8.S.1A.3 Plan and conduct controlled scientific investigations to answer questions, test hypotheses, and develop explanations: (1) formulate scientific questions and testable hypotheses, (2) identify materials, procedures, and variables, (3) select and use appropriate tools or instruments to collect qualitative and quantitative data, and (4) record and represent data in an appropriate form. Use appropriate safety procedures.

Objectives: I can create a code and program a 3D virtual world with Alice software to demonstrate my knowledge of lab safety.

Materials Needed: Alice 2.4 Software, Computers (1 per group or student), paper

Text: Learning to Program with Alice – Third Edition by Dann Cooper Pausch

Duration: 2 or 3 – 50 minute class periods

INSTRUCTIONS FOR IMPLEMENTING LESSON

Setting the Stage (Generate Interest, Review/Background): Show video on lab safety rules.

Acquisition of Skills:
Day 1: Model: Explain how to create a storyboard about a lab safety rule using different formats.
   Guided: Complete a storyboard as a class on one lab safety rule.
   Independent Practice: In groups or individually create story board for given lab safety rule.

Day 2: Model: Explain how to add characters to a given world, move, turn, think, say to illustrate lab safety concept.
   Guided: In given world, add characters then turn, move, think and say to illustrate the guided storyboard from yesterday.
   Independent Practice: Complete animations for lab safety rule using storyboard from day before.

Closure (Review Objectives, Homework)
Day 1: Discuss all lab safety rules and critique others storyboards.
Day 2: Submit final world to teacher for grading on rubric. Show to class.

(Modified from: http://www.yale.edu/glc/tangledroots/form.pdf)
Assessment/Labs:
Storyboard and virtual Alice world