Lesson Plan

Teacher: Darlene Winans

Date: September 2013

Subject / grade level:
Intro to Computers Grade 9
Computer Science Club Grades 9-12

Class Time: 38 minutes

Lesson Time: (2) Class Periods

Materials: Alice Software
Computers/projection equipment standard to the layout of the computer lab
island tutorial.a2w
islandTutorialFinal4-up.pdf

NYS Learning Standards for Math, Science, and Technology

Standard 1. Analysis, Inquiry, and Design: Students will use mathematical analysis, scientific inquiry, and engineering design, as appropriate, to pose questions, seek answers, and develop solutions.

Standard 5. Technology: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.

Standard 6. Interconnectedness: Common Themes: Students will understand the relationships and common themes that connect mathematics, science, and technology and apply the themes to these and other areas of learning.

Standard 7. Interdisciplinary Problem Solving: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.

Common Core Standards are woven throughout the lesson in the promotion of literacy and application of critical thinking skills to solve problems.

Lesson objective(s):
The purpose of the lesson is introduce students to Alice and to promote membership in the Computer Science Club.

Differentiation strategies to meet diverse learner needs:
- Wait time
- Handouts/visual aids
- Multimedia presentation

ENGAGEMENT
- Teacher may be wearing Alice T-Shirt
- Introduce “Island Tutorial” by showing and playing the finished world
- Students should ask questions like “How do I make the object/character do that?” or “How can you make the characters appear in the world?”

EXPLORATION
- Concepts: The Dummy Camera, Methods, Events, Vehicles, Do Together, Comments
- Teacher will demonstrate how to construct the Island Tutorial while students follow along.

EXPLANATION
- Students may ask questions as we go along, especially if they do not follow instructions precisely. Answer student questions by asking them questions that help them “debug” on their own. Example:
  - Question: “My heroine won’t get in the boat.”
  - Teacher: “Did you use heroine.getInBoat? or world.getInBoat? How will that change the character interaction?”

  Explain the concepts named above as the tutorial is explored:
  - Dummy camera: Saves the location of your camera view.
  - Method: the verb, or the action, you want your object to do.
  - Method editor: large, rectangular tan window where you tell your characters/objects what to do (what methods to perform).
  - Events: Take place in the event editor window at the top right corner of the screen. Events are used to tell our program when it should call our methods.
  - Vehicle property: used to synchronize the movements of two objects
  - Do Together: tells the program to run the methods we call simultaneously.
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- Comments: used to explain the line or lines of code below. They do not interfere with the running of the program, they are just used for the program author to explain what’s happening in the code.

### ELABORATION

- Students will complete the tutorial world. All concepts illustrated in instruction should be running in their world.
  - Extension:
    - Students add more scenery to the world.
    - Students make coconuts fall from the tree when the spacebar is pressed.
    - Students change the color of the boat (changing color and texture)
    - Students figure out how to change the weather, such as making a foggy sunset.

### EVALUATION

- Teacher will observe students as they are working in the Alice world
- Teacher will view student-created worlds to evaluate student achievement of the lesson objectives
- Teacher will encourage students, especially those who excel or are enthusiastic about Alice, to join the Computer Science Club.