

Day 3 Outline

Objectives:

- Students learn about event handling.
- Students will practice making their own methods.
- Students will develop an interactive animation

Talking points:

1. Recap the programming concepts that we've learned
 - a. Default flow of control
 - b. Altering that with *doTogethers*, *loops*, *if/else*
 - c. Terms such as objects, methods, parameters
2. Talk about how some programs run like our animation, that is the code is written and executed. Other programs work differently, that is rather when they run, they don't do anything but rather wait for the user to do something. Demonstrate with a word processor – it just sits there waiting for me to do something.
 - a. Since “wait” means something else, we actually say that the program is “listening” and what it's listening for are called “events.”
 - b. Demonstrate some events in the word processor – key stroke, mouse click, push a button
 - c. We're going to do “event processing” in Alice
3. Create a new world with the outer space template.
4. Add from the Sci-fi Gallery, a *kangarooRobot* and an *alienOnWheels*.
5. Make it so that when we click on the *kangarooRobot*, it hops up, turns one revolution, and returns to the surface.
6. Add a *bow* method to each *kangarooRobot*.
7. When the letter 'b' is typed, call the *kangarooRobot's* *bow* method.
8. Have them write the *bow* method for the *alienOnWheels* and add it to the action that is to occur when the letter 'b' is typed.
9. Show how the camera can be tied to the arrow keys.
10. Change it so that the *alienOnWheels* responds to the arrow keys.
11. Make the camera “follow” the *alienOnWheels* by setting the camera's vehicle.
 - a. The hard way is to move the camera behind the alien and then set the camera's vehicle.
 - b. Te easy way is to turn the *alienOnWheels* around and position the camera behind it, and then set the camera's vehicle.
 - c. Either way, this gives the illusion of the user “being” the *alienOnWheels*.
 - d. Demonstrate how to add events for the individual arrow keys in order to control the speed with which the objects move through the scene. (Use the sample programs *BoatCourse.a2w* and *BoatCourseControlled.a2w*) (I showed them how to add *Shapes* and change their color – but they could use anything for their obstacles.)

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12. The students are to create a new world, setting up objects to form an obstacle course. They are to set up an object that is to navigate through the obstacle course, with the camera looking at it from the obstacle's perspective. (Actually from just behind the object – the camera's vehicle is the object.)