



## Programming with Alice Workshop

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Westminster College runs a math, science, and computing summer camp for middle school girls called AWE+SUM. The core of AWE+SUM is a set of workshops that apply these domains through creative hands-on experiments and exploration. One of the most popular workshops is called "Programming with Alice", which introduces the girls to programming concepts and basic gaming fundamentals through Carnegie Mellon University's Alice 3D Authoring System. Alice's storytelling elements make loops and conditionals relevant, and the characters in Alice make object-oriented design and methods intuitive. The girls even learn about parallel programming and some basics of 3D graphics, including manipulating 3D objects and camera control. Most importantly, the girls leave the camp with a positive image of programming and computers.

### Day 1: 90 minute session

- Introduce girls to the Alice programming environment and calling methods with parameters (using the standard Alice tutorial).
- Girls complete the remainder of the tutorial and a second tutorial individually, learning how to write their own methods and how 3D characters are composed.
- Girls work in self-selected pairs to build their own virtual worlds and write their own stories (programs).

### Day 2: 90 minute session

- Review topics from first day and clarify confusing areas: positioning new characters in a virtual world, parameter passing, and modify timing of actions.
- Introduce new topics: programming in parallel, writing loops, conditionals.
- Girls work in pairs, completing their programs. Some have time to write a second program.

### Day 3: 45 minute session

- Most pairs elect to share programs with the entire camp.
- All girls take home Alice software on CD.

The AWE+SUM website:

<http://www.westminstercollege.edu/camps/> and click on *AWE+SUM* link

### More about Alice:

The Alice 3D Authoring System is a freely available programming environment that is useful for teaching programming. Its drag and drop interface precludes syntax errors. Alice comes with several tutorials that demonstrate its potential for creating interactive 3D virtual worlds. It also includes a database of 3D characters and worlds. All characters come with a suite of basic methods and functions, facilitating the creation of a new user's first program.

To download and learn more about Alice:

<http://www.alice.org>

<http://www.aliceprogramming.net>