

AWE+SUM

**Programming in Alice
workshop
for middle-school girls**

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AWE+SUM camp overview

- **Four day residential camp for girls entering eighth grade**
- **Two different sessions each summer (one June, one July)**
- **40 girls per session**
- **Female professors and counselors**
- **STEM workshops, including:**
 - **building tuned wind-chimes**
 - **analyzing the solubility of vitamins**



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AWE+SUM camp overview

- **Non-academic activities, including:**

- yoga, swimming, hiking
- self-esteem workshop

- **\$50 fee is only cost to girls**

- **One camp funded by Utah (ASTEC)**
- **Second camp funded by:**
 - Chase Bank
 - Mathematical Association of America
 - Rocky Mountain NASA Space Consortium
 - private donors



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Remainder of Presentation

- 1. Recruiting Campers**

- 2. Alice Workshop**

- 3. Follow-up with Campers**



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AWE+SUM - recruitment

Information sent:

- mailings to all Utah public schools
 - science teachers' conference
 - Utah MESA program
 - Native American tribal leaders
 - churches with black congregations
- We ask teachers to recommend “especially those who may not be performing in math and science classes at their true ability level”



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Programming with Alice Workshop

- Longest and most popular workshop
- Storytelling Alice
 - provides a platform for telling stories
 - drag-and-drop programming interface
 - stencils tutorials
 - free download - girls take home Alice CDs



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First Day of the Workshop (90 minutes)

- **Intro to Storytelling Alice**

- **Tutorials teaching:**

- how to call methods
- pass parameters
- write new methods
- place 3D objects in virtual world



- **Work in pairs to build new world and write a program**



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Second Day (another 90 minutes)

- **Review topics from previous day**

- **Introduce new topics**

- programming in parallel
- writing loops
- event-driven programming (conditionals)
- adding titles, multiple scenes

- **Pairs complete their programs**

- **Some girls “sneak back” to work on programs**



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Last Day

- Completed programs shown on a “big screen”
- Parents invited
- Post-camp questionnaire

Statement	Pre-Camp Average	Post-Camp Average
I am likely to go to college someday.	4.84	4.95
Math and science can be fun.	4.00	4.23
I am interested in a career involving math or science.	3.87	4.05

* typical camp results (not statistically significant)



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Follow-up

- January reunion
 - occurs before girls register for high school classes
 - invited speaker from industry
 - discussions on taking four years of math and science in high school (only two years are required in Utah)



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For More Information

- **AWE+SUM camp**

people.westminstercollege.edu/faculty/hhu

- short handout about Alice workshop
- CCSC SW region paper with details

- **Alice**

<http://www.alice.org>

- BOF, workshops at SIGCSE
- many summer workshops



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