



The ICT4me Curriculum

About ICT4me

ICT4me is an after school and summer curriculum for middle school youth to develop ICT fluency, interest in mathematics, and knowledge of information, communication, and technology (ICT) careers. This problem-based curriculum capitalizes on youth interest in design and communication technologies. ICT4me provides structured interactions with ICT professionals, including having youth participate in engineering design and development teams. ICT4me's promotes a train-the-trainer approach to building capacity in informal ICT learning.

Build IT vs. ICT4me

ICT4me is a derivative of the Build IT curriculum co-developed between SRI International and Girls Inc. of Alameda County. Questions about the Girls Inc. implementation of Build IT can be directed to them at <http://www.girlsinc-alameda.org/about/contact>.

SRI is no longer supporting the development of ICT4me, so the curriculum materials are offered as is.

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Electronic Versions of Materials

Electronic versions of all materials in this unit are available for download from the website at <http://ict4me.sri.com/>.

Contact Information

Please contact the SRI International Inquiry line for questions about ICT4me.
<https://www.sri.com/contact/form>

ICT4me

Unit 5 Scope and Sequence

Designing and Programming a Game

Big Ideas

- Collaboration involves a strategy for dividing tasks associated with a solution into pieces that can be worked on individually and reassembling the work products into a cohesive whole to form the solution (NRC, SCANS).
- Leadership involves teaching others new skills, communicating ideas to justify a position and convince others, and supporting a vision that may challenge the status quo (SCANS).
- To troubleshoot a problem in an information technology system, application, or operation, it is essential to have some expectation of what the proper behavior should be and how it might fail to be realized (NRC).
- Algebra: represent patterns in tables, with graphs and with symbolic expressions.

Essential Questions

- How do you decide what to build?
- What is programming?

Mapping the Big Ideas

Session/Core Activity	Description	IT Professional	Performance Tasks	Collaboration	Leadership	Troubleshooting	Algebraic Thinking
Week 1: Programming vs Playing games	Youth play with educational games and begin programming a game, using software such as Scratch or Stagecast.			X	X		
Week 2: Learning Stagecast with Pond Life	Youth use coordinate geometry to understand how engineers and designers plan movement and location of characters.			X	X	X	X
Week 3: Field Trip & Selecting Your Team	Youth go on a field trip during which they learn about game design and careers in IT.	X		X	X		

Week 4: Principles of Game Design	Youth analyze 2 games to uncover principles of game design and they begin learning how to develop their games formally.		X	X		
Week 5: Designing the big game	Youth design and create a map for the Big Game.		X	X		
Week 6: Prototyping & Storyboarding	Youth (in pairs) create a rapid prototype and then storyboard stages of their game.		X	X		
Week 7: First week of Programming	Youth begin programming stages of their games.		X	X	X	X
Week 8: Second week of Programming	Youth continue programming their games.		X	X	X	X
Week 9: Third week of programming	Youth continue programming their games.		X	X	X	X
Week 10: Testing Stages	Youth write instructions for their stages and provide feedback to other teams.	Mini	X	X	X	X
Week 11: Fifth week of programming	Youth continue programming their games.			X	X	X
Week 12: Sixth week of programming	Youth continue working on their games.			X	X	X
Week 13: Re-assembling Humpty Dumpty	Youth design a map of the whole game, explaining how their separate games fit together.	Full			X	X
Week 14: Prep for Family Tech Night	Girls create and practice their presentations for FTN.		X	X		
Week 15: Family Tech Night	Girls share their game with the families and guests.	X		X	X	