Introduction

We partnered with Citizen Schools, a non-profit organization, for an after-school apprenticeship at Lowe’s Grove Middle School in Durham. To ensure a high quality educational experience, Citizen Teachers (CTs) and Team Leaders must plan lessons across the 10 weeks of the apprenticeship, culminating in a final WOW! project presentation.

Resources

Citizen Schools  Alice programming
www.citizenschools.org  www.alice.org
CT Nation
cnation.citizenschools.net
WOW! Showcase
www.wowshowcase.org
Citizen Schools Youtube Channel
www.youtube.com/citizenschoolsonline

Learning Objectives

- 21st Century Skills: Teamwork and Technology
- Introduced algorithms and computer instructions, fundamental concepts of computer programming
- Reinforced technical vocabulary using games and fun activities
- Discussed career paths in computer science, using videos and presentations
- Students will teach back to the community during the WOW!

Conclusions

- Created a curriculum which may be reused in future outreaches
- Taught skills that will, in turn, be shared with a broader community
- The WOW! project focuses the outreach on a concrete end goal
- Formal lesson planning better targets learning objectives and skills

Future Work

- WOW! project scope must be kept small to fit within a realistic timeline
- Share lesson planning experiences with other outreach teams

STARS in Technology: Lesson Planning
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Sample Lesson Plan:

- Opening Ritual – activities with students outside of the computer lab
- Who is a Computer Scientist? – fun intro to diversity in computer science
- Cool Things in Computer Science – videos showing new technologies
- Human Computers! – students work in teams to produce computation
- Alice programming – design of 3D environments and video games

Students use pair programming, Benjamin coaches a pair of students

Britney supervises a team project

Padmashree helps students with a tutorial

Joe leads the Opening Ritual