SPARCS @ CCMMS
Jennifer Robison, Veronica Catete, Anne Watson, Jimmy Lewis, Mark Draelos, William Lahti
(jrobiso, vmcatete, amwatso3, jelewis, mtdraelo, wjlahti)@ncsu.edu

Introduction

What is SPARCS?
SPARCS (Students in Programming Robotics and Computer Science) is a middle school outreach program aimed at introducing computer science topics to young students (5th – 8th grade). SPARCS at Centennial Campus Middle School is in its third year and is the original site of the SPARCS outreach program. This year a second SPARCS was launched at Durham Nativity School.

SPARCS Goals
• Increase interest in pursuing a career in computer science
• Give students an advantage if they do choose to pursue this career path
• Focus on motivating minority students

This year we have an additional focus on improving the logistics of the SPARCS program. This includes better contact with parents through a new website and better data collection for analysis of results.

Activities

The SPARCS program includes eight Saturday sessions where students learn a different topic each time. Planned activities for this year include:

• **CS Unplugged** – students learn basic computer science concepts through games and projects that do not require a computer.

• **Web Design** – students learn the basics of HTML and how to create their own webpages

• **Security** – students learn several basic encryption methods and also why it is important to keep their digital information safe

• **Alice Programming** – students are introduced to object oriented programming using the drag-and-drop Alice programming environment developed by CMU.

• **LEGO Mindstorms** – students continue to explore programming concepts as well as the use of sensors and motors when working with LEGO Mindstorms robots

Results

From the first three sessions (CS Unplugged, Introduction to Alice Programming, and Control Structures in Alice) we have found that overall students are highly engaged in the sessions and are both learning and enjoying the activities.

Conclusions

So far, this year looks promising. Improvements to the program since the previous year appear to be having positive results on students enjoyment and continued enrollment in the SPARCS program. More data will be necessary to determine the impacts conclusively. Additionally, we hope to determine whether:

• Student perceived measures of learning correlate to actual learning of content

• Students are positively encouraged to consider careers in computer science

• Students of different demographics prefer specific activities