

Making the Connection

Working with Elementary Schools to Build the
Next Generation of Makers, Tinkerers, and
Roboticists

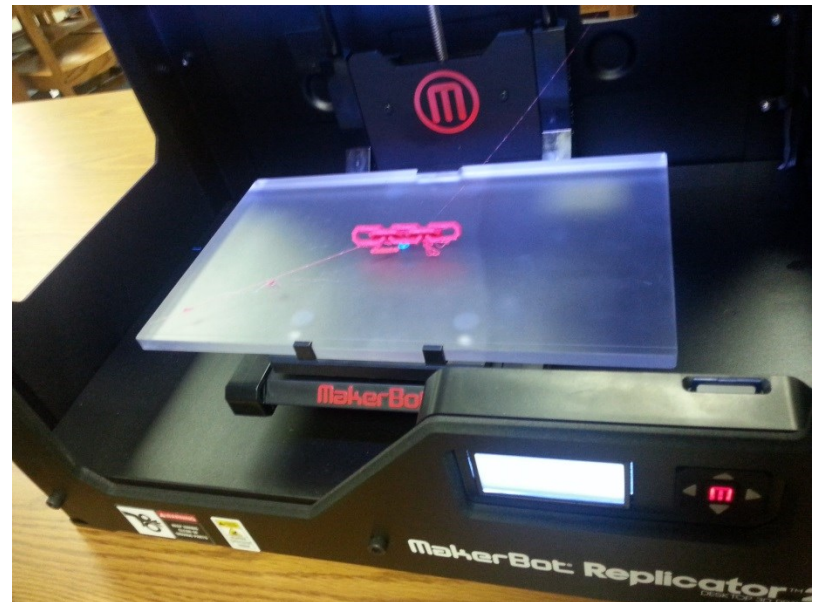
Overview

- The Case for STEM Education
- Why focus on elementary school?
- Volunteer opportunities in elementary STEM Education
- Contact Information

The Need for STEM Education

- STEM-related jobs are predicted to grow at a faster rate than other sectors.
- There is rising concern over a potential shortage in available workers to meet the demand.

(http://www.esa.doc.gov/sites/default/files/reports/documents/stemfinallyjuly14_1.pdf)



CAN We Meet the Demand?

- Although women made up more than 50% of the population in 2010, and the percentage of minorities is increasing in the overall population, these changing demographics are not reflected in current job and education statistics.

(http://www.nsf.gov/statistics/wmpd/2013/pdf/nsf13304_digest.pdf)



Unprepared Students?

- Nearly 18% of Hispanic students dropped out of high school in 2013 (<http://www.statisticbrain.com/high-school-dropout-statistics/>)
- Nearly half of high school dropouts cited boredom as the leading factor in their decision to drop out.
- (http://www.huffingtonpost.com/2013/10/03/sundance-infographic-americas-school_n_4032373.html)



Why Focus on Elementary School?

- Struggling third grade students are more likely to drop out of high school than their peers.
- Struggling students who live in poverty are 13 times more likely to drop out of high school than their peers.

(<http://www.aecf.org/Newsroom/NewsReleases/HTML/2011Releases/DoubleJeopardy.aspx>)



Dropout Prevention

Starts in elementary school.



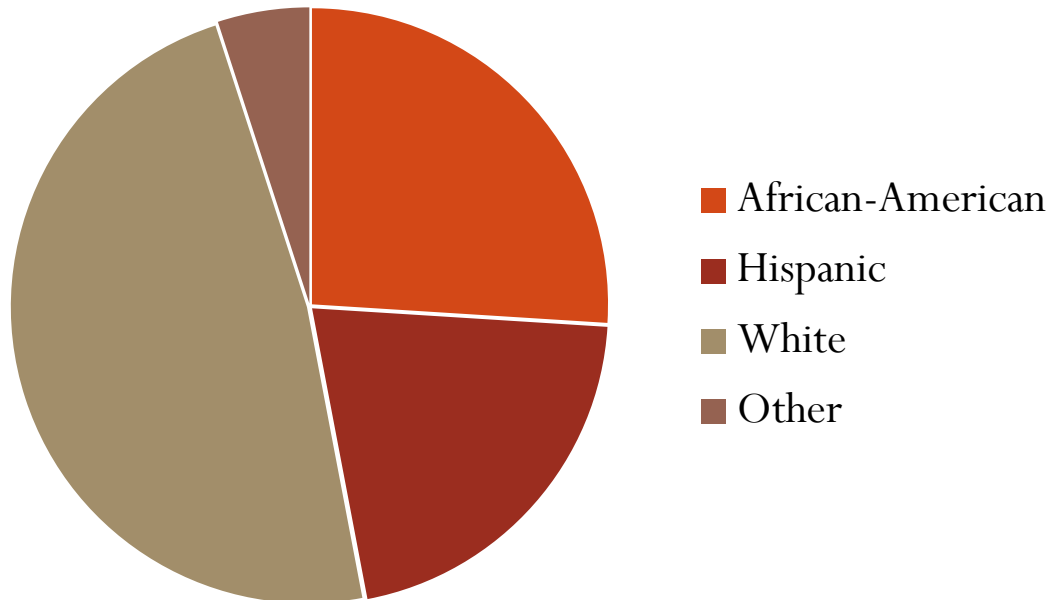
Creating Change With STEM Disclaimer



A Little About Our School

We are a full Title I school in Western Orange County. Our population is rural/suburban.

Ethnicity



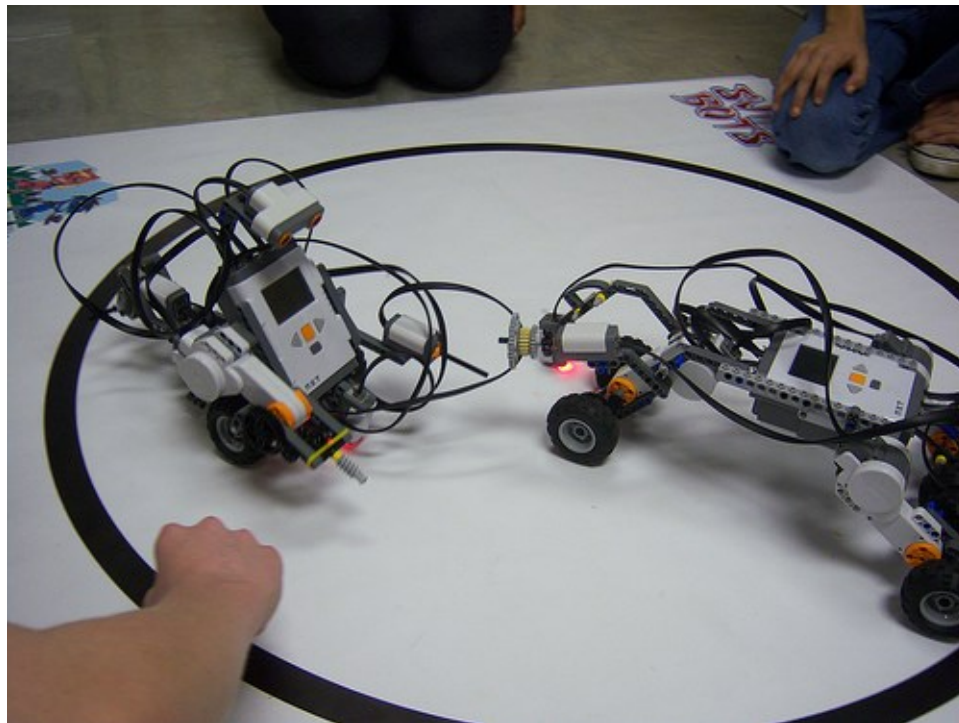
- Approximately 63% of our students receive free or reduced lunch.

10%

Percentage of students identified for special services (EC, AIG, ESL)

Robot Camp

- In 2009-2010, ZERO fifth graders from our school registered for biotechnology classes at the middle school.
- Students saw STEM courses as “for smart kids,” not for them.



Robot Camp



A Typical Robot Camp



A Typical Robot Camp



Results?

- Students sign up for middle school technology courses at rates that are comparable to rates for other courses.
- One student has gone on to join the high school robotics team.
- A student who was considering dropping out started asking about the math courses he'd need to take in order to be ready for high school.

Dropout Prevention Takes a Community

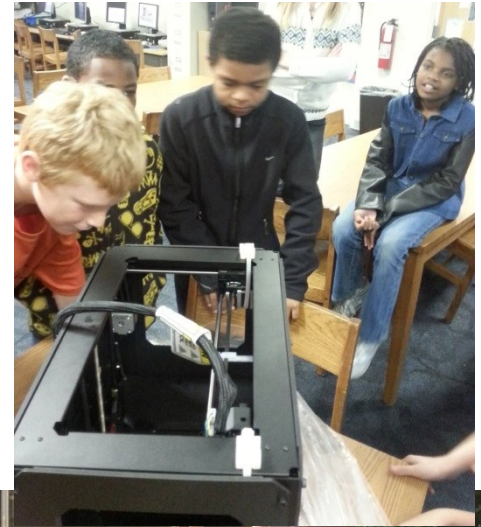
Family Math and Science Night

February 13, 2014



Dropout Prevention is Fun

Maker Club: afterschool program
offered on alternating Thursdays.



Get Involved!

- Contact Mark Dickerson with Orange County Schools to learn about registering as a volunteer (Robot Camp/Maker Club)
 - Phone: 919-732-8126
 - Email: mark.dickerson@orange.k12.nc.us
- Contact your local school to offer your services as a volunteer

Contact Me

- Kristin Bedell
- Email: kristin.bedell@orange.k12.nc.us
- Telephone: 919-563-5112 x42900
- Important Dates:
 - Math and Science Night is February 13, 2014 from 5:30-8:30pm (volunteer registration NOT required)
 - Robot Camp is February 22, 2014 from 9-3 (volunteer registration required)