

E=mc²
*Engaging More
 Community Connections*



Volume 6: Issue 2

March/April 2014



Upcoming Events & Programs: **Robotics Academy**

Registration Opens: March 3, 2014

June 24 – 27, 2014

The 4-day Robotics Academy (9am-4pm, daily) at Auburn University is aimed at rising 7th – 9th grade students interested in robotics. Working in teams, students will engage in real-world design challenges that will culminate in a friendly competition on the last day of the academy.

Students will be introduced to the engineering design process, the importance of notebooks and technical writing, as well as gain hands-on experience programming and building robots using VEX robotics kits. All aspects of the camp are applicable outside of the Robot Academy: the design process and technical notebooks are a vital part of professional engineering, the programming portion teaches logic that is applicable to any other programming language, and the VEX robotics control system is used in other robotics competitions such as BEST Robotics. All necessary materials, including motors, gears, pulleys, wheels and axles, and microcontrollers will be available for student use during the academy.

Registration forms and full course descriptions will be available at

www.auburn.edu/cosam/roboticsacademy

For more information contact:

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Science Matters Registration

Registration Opens: Monday, February 3rd

Science Matters is a summer enrichment program for elementary students in rising grades 1-6 offering youngsters a supercharged science experience. The program allows participants to explore the world of science through real experiments, technology and art projects, and hands-on, make-n'-take activities. During this action-packed program, kids can design and build, dabble in the art of chemistry, "become a flight specialist", see amazing critters, and more! Science Matters offers six different science-themed weeks for rising 1st-4th graders to choose from and four weeks for rising 5th-6th graders to enjoy. Parents may choose between the Regular Day option from 8am-3:30pm or the Extended Day option from 8am-5pm. Prices range from \$170 –\$240 per week/child. Multiple week discounts are available. Courses fill on a first-come-first-serve basis, so be sure to register today!

Upcoming Events and Programs (cont'd.)

Science Matters – Summer Dates/Courses

Week 1 – May 27 – 30, 2014*

1st – 2nd Grade: My Sensational Senses – Aleesa Zutter

3rd – 4th Grade: Branching Out – Dr. Bruce Zutter

3rd – 4th Grade: Farm to Food – Rebecca Balkcom

Week 2 – June 2 – 6, 2014

~~4st – 2nd Grade: "Bugging" Out – Cathryn Albright COURSE IS FULL**~~

3rd – 4th Grade: Slimy Science: The Encore – Gina Watkiss

5th – 6th Grade: Amusement Park Adventure – Andrew Click

Week 3 – June 16 - 20, 2014

~~4st – 2nd Grade: Ticket to Travel – Amanda Morley COURSE IS FULL**~~

3rd – 4th Grade: Culinary Chemistry – Rachel Newman

5th – 6th Grade: Hot Wired – Frank Ware

Week 4 – June 23 – 27, 2014

~~4st – 2nd Grade: The Body Shop – Amanda Morley COURSE IS FULL**~~

3rd – 4th Grade: The Hunger Games – Hilary Boyd

5th – 6th Grade: Toying with Physics – Dr. Bruce Zutter

Week 5 – July 14 – 18, 2014

1st – 2nd Grade: Jurassic Park – Aleesa Zutter

3rd – 4th Grade: LEGO Mania: Part Deux – Frank Ware

5th – 6th Grade: Healthy as a Horse – Casey Johnson

Week 6 – July 28 – August 1, 2014

~~4st – 2nd Grade: Rock Your World – Cathryn Albright COURSE IS FULL**~~

3rd – 4th Grade: Do you See What I See? – Hilary Boyd

3rd – 4th Grade: The Underground Uncovered – Andrew Click

*This four-day camp is offered at a reduced rate.

** This course is filled to capacity, but participants can register to be placed on the wait-list

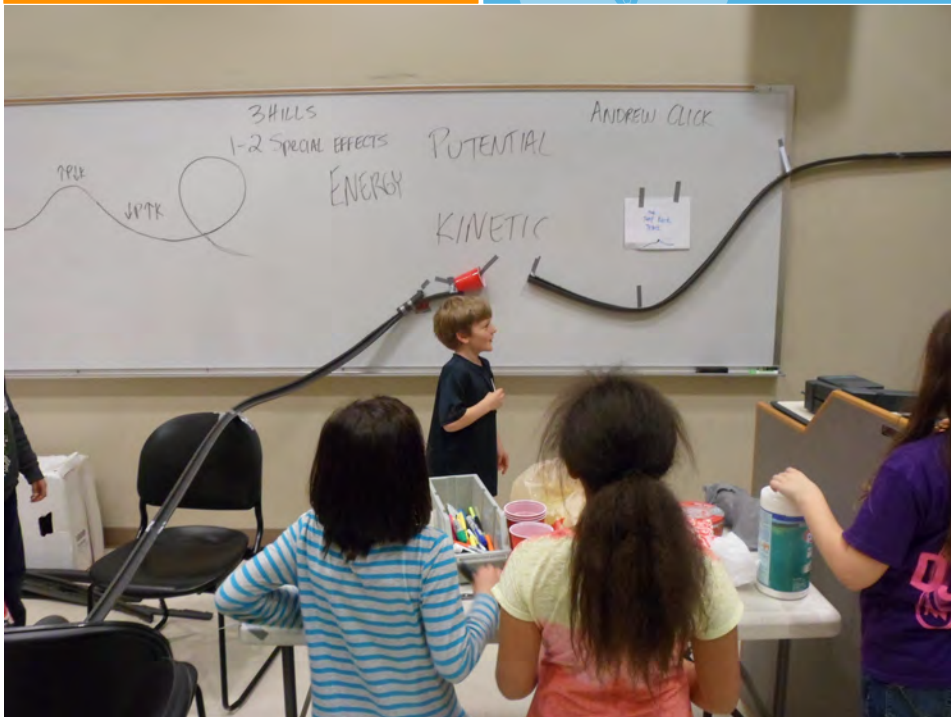
Registration Information:

Course descriptions, registration forms, and parent information is available at:

www.auburn.edu/cosam/sciencematters

For additional information contact:

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Outreach Calendar

March

- 1 M.S. Science Olympiad
- 20 GEARSEF

April

- 10 GUTS
- 25 AU Explore

GUTS

Getting Under the Surface

Space Still Available in April for 4th – 6th graders!

GUTS is an evening program for 1st – 6th grade students and their parents or grandparents. Each evening session includes dessert followed by a 90-minute science activity featuring a “Getting Under the Surface” theme designed to demystify the science of topics ranging from DNA to creatures in the deep sea to how batteries work. The mission of GUTS is to enhance science literacy and engagement within our community by providing relevant science activities to students and their parents.

Thursday, April 10

4th – 5th Grade: ~~Anatomy in Action (Aleesia Zutter)~~ FULL
 4th – 6th Grade: Boy, Oh Boy, Oh Buoyancy (Dr. Bruce Zutter)

Registration forms and full course descriptions is available at

www.auburn.edu/cosam/guts

For more information contact:

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Activity of the Issue

A Battery that Makes Cents

Materials:

- Pennies (4)
- Nickels (4)
- Mild dish soap
- Vinegar (any kind, 1/4 C.)
- Salt (1 Tbsp.)
- Small bowl
- Small plate (ceramic, plastic, or Styrofoam™; not paper or metal)
- Digital multimeter (any kind that reads mA and mV)
- Paper towels (2)

What to do:

1. In a small bowl, mix together 1/4 C. of vinegar (electrolyte) and 1 Tbsp. of salt (ions).
2. Using scissors, cut up a paper towel into small squares, each approximately 1 cm x 1 cm.
3. Place the small squares to soak in the bowl of salt-vinegar solution, and set them aside.
4. Gather some pennies and nickels, wash with a mild detergent (like dish soap), and dry. This is just a preliminary step to remove dirt and grime.
5. Start building your stack on a dry paper towel on your plate. Put down a penny first, then place a square of vinegar-soaked paper towel on top, and then add a nickel. Keep repeating the layers until you have a stack of four coins (alternating pennies, wet paper towel pieces, and nickels), making sure you end with a nickel on top.
6. Attach the leads of the multimeter to the two ends of the battery by touching one lead to the penny on the bottom and the other to the nickel on the top. Measure the voltage produced by your battery (in

millivolts, mV). You can also measure the current produced (in milliamps, mA).

7. Repeat the experiment, each time building a battery with a different number of coins. One important rule is to always start with a penny and end in a nickel, so the number of layers of pennies and nickels will always match. Why do you think this is necessary?
8. Record your data in a data table.
9. Make a graph of your data. What trends do you observe?

Extension:

1. Compare different coin combinations to see which ones work and which ones don't:
 - Penny - Dime
 - Nickel - Dime
 - Nickel - Quarter
 - Penny - Quarter
2. Try other electrolyte solutions to see which ones work and which ones don't:
 - Plain water
 - Salt water
 - Lemon juice
 - Soda water
3. Try making batteries out of other things, like potatoes or fruits.

This activity was developed by ScienceBuddies.

For more fun experiments visit:

<http://www.sciencebuddies.org>



Since the last issue

Elementary Science Olympiad

- 1st Place: Ogletree Elementary School (Team 6)
- 2nd Place: St. Luke's Episcopal School (Team 21)
- 3rd Place: Mt. Gap Elementary School (Team 17)
- 4th Place: Wrights Mill Road Elementary School (Team 23)
- 5th Place: Geneva Middle School (Team 2)
- 6th Place: Pick Elementary School (Team 7)
- 7th Place: Highlands Elementary School (Team 3)
- 8th Place: St. Luke's Episcopal School (Team 9)
- 9th Place: Highlands Elementary School (Team 25)
- 10th Place: Pick Elementary School (Team 20)

For more information about Science Olympiad visit our webpage

www.auburn.edu/cosam/scienceolympiad



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