



AUBURN UNIVERSITY

COLLEGE OF SCIENCES
AND MATHEMATICS

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Engaging More
Community Connections



Volume 7: Issue 4



COSAM Outreach Newsletter
September/October 2015

Upcoming Events & Programs

AMP'd

September 19, 2015 & January 23, 2016

The Auburn Mathematical Puzzle (AMP'd) challenge is held each fall for middle school and each winter for high school. The event is a problem solving challenge in which student teams work together while answering real mathematical puzzles. The focus of AMP'd is for students of all math ability levels to engage in math in a way that is fun, interesting, and different from a traditional math class. AMP'd has two separate competitions—one each for middle and high schools. Information about AMP'd can be found at www.auburn.edu/cosam/ampd.

Middle School AMP'd

- **Date:** September 19, 2015
- **Contact:** Kristen Bond: 334-844-5769 or kristen.bond@auburn.edu

High School AMP'd

- **Date:** January 23, 2016
- **Contact:** Josh King: 334-844-8123 or josh.king@auburn.edu

Registration for High School AMP'd is currently open!



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Upcoming Events



War Eagle BEST

War Eagle BEST is the local BEST Robotics hub for schools located in East Central Alabama and West Georgia. The program is co-hosted by the College of Sciences and Mathematics and the Samuel Ginn College of Engineering at Auburn University. Each fall, 20+ local schools design, build, and program a robot from a kit of raw materials. The six-week-long program culminates in a one-day, sports-like competition. For more information about War Eagle BEST including dates/locations and public viewing of the event, visit www.wareaglebest.org.

2015 Competing Teams

A-2-Z Homeschool	Alabama Christian Academy	Central Educational Center	Eastwood/Cornerstone School
Edward Bell Career Technical Center	Evangel Christian School	Glenwood School	LAMP High School
Lanett High School	Lee-Scott Academy	Loachapoka High School	Marbury High School
Millbrook Middle School	Montgomery Catholic Preparatory School	MPACT High School	Opelika High School
Opelika Middle School	Saint James School	Smiths Station High School	Southside Middle School
Spencer High School	Springwood School	Tallassee High School	Wetumpka High School

G.U.T.S.

Getting Under the Surface Registration Opening Soon!

G.U.T.S. is an evening program for 1st-6th grade students and their parents or grandparents. Each evening session includes snacks followed by a 90-minute science activity featuring a “Getting Under the Surface” theme designed to demystify science topics—this fall focusing on the science of the spooky and gross. The mission of G.U.T.S. is to enhance science literacy and engagement within our community by providing relevant science activities to students and their parents. The cost of attendance will be \$10 per parent/child team. For more information, contact Josh King at josh.king@auburn.edu or 334-844-8123.



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Outreach Calendar

September

- 19 Middle School AMP'd
- 19 Robotics Merit Badge Day
- 27 War Eagle BEST Mall Day

October

- 10 War Eagle BEST Competition
- 27 G.U.T.S.

Science Olympiad

Registration Now Open!

Visit <http://www.alabamaso.org> to register!

Science Olympiad is a one-day sports-like science competition involving approximately 2,000 Alabama K-8 students each year. Auburn hosts two separate Olympiad events each year – one for middle school students and a separate event for elementary students. For more information, contact Kristen Bond at Kristen.bond@auburn.edu or by phone at 334-844-5769, or go to www.auburn.edu/cosam/scienceolympiad.

Elementary S.O. – Saturday, February 20th, 2016
Middle School S.O. – Saturday, February 27th, 2016

Activity of the Issue

Home-made Rock Candy* (super-saturated solutions)

Materials:

- A clean wooden skewer or chopstick
- A clothespin
- 1 cup of water
- 2-3 cups of sugar
- A tall narrow glass or jar

What to do:

1. Clip the wooden skewer into the clothespin so that it hangs down inside the glass and is about 1 inch (2.5 cm) from the bottom of the glass
2. Get a helpful adult!
3. Pour the water into a pan and bring it to boil.
4. Pour about 1/4 cup of sugar into the boiling water, stirring until it dissolves.
5. Keep adding more and more sugar, each time stirring it until it dissolves, until no more will dissolve. This will take time and patience and it will take longer for the sugar to dissolve each time. Be sure you don't give up too soon. Once no more sugar will dissolve, remove it from heat and allow it to cool for at least 20 minutes.
6. NOTE: While it is cooling, some people like to dip half of the skewer in the sugar solution and then roll it in some sugar to help jump-start the crystal growth. If you do this, be sure to let the skewer cool completely so that sugar crystals do not fall off when you place it back in the glass.



7. Have your friendly ADULT carefully pour the sugar solution into the jar almost to the top. Then submerge the skewer back into the glass making sure that it is hanging straight down the middle without touching the sides.
8. Allow the jar to fully cool and put it someplace where it will not be disturbed.
9. Now just wait. The sugar crystals will grow over the next 3-7 days. Add food coloring for colors!

Questions to Consider

1. How do the rock candy crystals form?

*When you make the heated sugar water, you are making a **super-saturated solution**. This means your solution holds more sugar than it normally would when cooler. As the mixture cools, the water no longer has enough energy to hold the sugar molecules, and so the sugar **precipitates** (falls out of the mixture), crystalizing onto the skewer.*

2. How does this relate to making sweet tea?

See if you can come up with this answer on your own!

**This activity and accompanying graphics were developed by "Science Bob" and adapted for this publication. For more experiment ideas visit:*

<http://www.sciencebob.com>



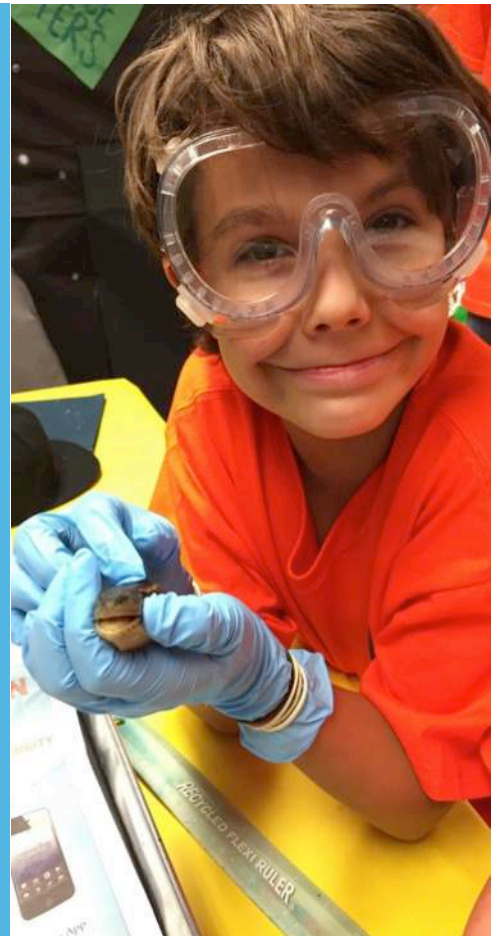
Since the last issue

Science Matters Wraps Up: The 2015 Science Matters Summer Academy for elementary students wrapped up on July 31st. The summer was great and included 19 weeklong courses for rising 1st – 8th grade students. The program impacted over 220 elementary and middle school students with over 415 seats filled! Registration for 2016 will open in early February—be sure to check out our website (www.auburn.edu/cosam/sciencematters) and Facebook page for updates!

Math Science Partnership Project: This summer marked the 3rd and final year of the state funded “Robotics and Engineering Education” grant that to date has impacted over 240 middle school teachers statewide. Following the training, teachers reported a significantly higher confidence level in conducting hands-on, project-based STEM lessons with their students. This summer, we offered three different professional development opportunities for teachers across Alabama:

- Robotics University (Part 1) - Twenty-seven teachers participated in this 4-day training focused on the basics of building and programming VEX robots.
- Robotics University (Part 2) - Sixteen teachers honed their VEX robotics programming skills during this 3-day workshop.
- Save the Animals – Thirty teacher participants learned the engineering design process and how to implement fun, thematic, design-based science modules with their students.

Teachers who participated in these training opportunities received free materials to take back to their classrooms and lots of new ideas on how to implement hands-on learning with their science and math students!



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