Science, Technology, Engineering & Math (STEM) QUARTERLY NEWSLETTER

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Summer Edition

WHY TAKE A FIELD TRIP TO AN AMUSEMENT PARK?
By: John Van Horn

Because it’s there! Did you know that for roller coasters, the heights of the drops, the diameters of the loops and the angles of the curves on roller coasters have to be precisely calculated? Similar things are true for other rides. Students can discover the changes in acceleration for these rides by using a simple device called an accelerometer. In fact...

“If Math & Science teachers could design the ultimate teaching laboratory, what would it be like? The laboratory would certainly contain devices for illustrating Newton’s laws of motion, energy transformations, momentum conservation, and the dynamics of rotation. It would consist of large-scale apparatus so the phenomena could be easily observed and analyzed. Oh, and of course, the dream laboratory would allow the students an opportunity to not only witness the laws of physics in operation, but also feel them!

Well, this dream laboratory does exist and is as close as Six Flags Great America! At Six Flags Great America, virtually all the topics included in the study of mechanics can be observed operating on a grand scale. Furthermore, a phenomena, such as weightlessness, that can only be talked about in the classroom, may be experienced by anyone with sufficient courage.” (excerpt from Six Flags Teachers Manual)

Six Flags provides information and activities. Although many of these are aimed at the High School level, some activities can be done by Elementary and Junior High Students.

SUMMER ACTIVITIES FOR YOUR KIDS
By: Angel Edmond

Here are some activities that your kids can do this summer to get them away from the television and their video games. This summer share with your kids some of these ideas on how to have fun during their break.

♦ Go camping or fishing.
♦ Make fossils using clay. You can use items around the house such as coins, leaves or a small toy to have an imprint on the clay.
♦ Treasure hunt – if you have a few kids over to your house set up a treasure hunt for the kids.
♦ Go to the beach and make different figures out of sand i.e. sandcastle.
♦ Blow bubbles.
♦ Go to the zoo, museum or amusement park.
♦ Make and fly a kite.
♦ Learn to play an instrument.
♦ Join a sports or dance team.
♦ Make homemade binoculars from 2 empty toilet tissue rolls.
♦ Take a walk around your house or at a neighborhood park of your choosing.
♦ Get out of the heat and go see a movie.
♦ Look up some craft ideas online to do with your kids.

And at the same time, you can show students how science is interlinked in everything we do!

You can find links to Six Flags for Physical Science/Physics labs and a basic accelerometer below.

Six Flags Math and Science Days
http://www.coasterchild.com/events/events.html


Math Teacher Manual SIX FLAGS GREAT ADVENTURE PHYSICS DAY PACKET www.sixflags.com/.../assets/.../SPFHS%20Physics%20Worbook%202008

Tube Accelerometer http://everything2.com/title/How+to+Build+a+Accelerometer
PEANUT ALLERGIES MAY BE ON THE RISE
By: Kenya Thomas

With summer around the corner, thoughts of indulging in summer's delectable, sweet treats are in many of our minds. Ice cream sundaes topped with plenty of peanuts - -Wait, did you say peanuts? Unfortunately, peanut, tree-nut allergies may be on the rise in children. Due to food processing in plants, foods that may not even have nuts in them, may have remnants of nut proteins in them, because food plants are often multi-product producers. Physicians and research scientists aren’t sure of the exact cause of the rise in allergies presenting themselves. However some believe that it’s just an indication of more clear methods in defining what a tree nut or peanut allergy is.

After consuming a product that has peanuts in it, a child with peanut allergies will have the following symptoms within 2 hours after consumption:

♦ rash
♦ hives
♦ swelling
♦ wheezing

If any of these are experienced, medical intervention should be taken immediately.

Finding out whether or not your child has a peanut allergy is as simple as requesting a skin allergy test from your pediatrician or allergist. A 20 minute test can literally prevent a life threatening reaction.

MIDDLE SCHOOL STUDENTS EXPLORE ROBOTICS!!!
By: Dr. Rosalind Dale, Tabitha Hoskins and Semaj Johnson

Cook County 4-H Robotics Club–- Techno Tigers

The 2009-2010 school year was filled with robotics exploration for the Techno Tigers 4-H Club at Lindop Elementary School located in west suburban Broadview, IL. The after school club met 2-3 times each week during which time they learned how to apply their math, science and technology skills to robotics programming. The Techno Tigers competed in the FIRST Lego League (FLL) Competition on December 19, 2009 at the University of Illinois at Chicago Innovation Center. They were honored with the Teamwork Award for their display of gracious professionalism and outstanding teamwork.

On April 24, 2010, the club was one of sixteen groups to compete in the University of Illinois Extension 4-H Roboball Challenge. The hard work and dedication of this novice team was acknowledged as the team placed 4th in the competition. The club was supported by local Extension funds and a grant from National 4-H Council/JCPenney After-school Fund (JCPASF).

FUN FACTS ABOUT PETS

Did you know........

There are more than one million kinds of animals. Most are insects or other animals without backbones. Only about 50,000 kinds of animals have backbones. They include:

♦ 30,000 kinds of fish
♦ 9,000 kinds of bird
♦ 5,200 kinds of reptiles or animals that creep or crawl
♦ 3,200 kinds of amphibians (animals that can live both on land and in water, such as frogs)
♦ 4,000 mammals (animals that have hairy skin and feed their young with milk, such as humans and cows)

From: American Veterinary Medical Association.
**On the Road & Busy**

Science On The Go with the Mobile Science Lab is busy visiting schools and organizations throughout Cook County. We have a waitlist with several schools; however, we are still accepting requests online. To request the Mobile Science Laboratory at your school please visit our website at www.ScienceOnTheGo.uiuc.edu. For more information contact Angel Edmond at 708-449-4320 or edmond@illinois.edu

**DISASTER PREPAREDNESS FOR PETS**

By: Dr. Oye Ajifolokun

Every season comes with its own peculiarity; winter-snow, spring-cold and summer with tornadoes, hurricanes, floods, and fires. Generally however, pet owners must be aware of and adequately prepare for.

To minimize the effects of disaster on your pets, you may consider following these disaster preparedness tips:

- Have a disaster plan ready at all times.
- Provide identification tags for your pets in case of accidental loss for easy recovery.
- Have proof of ownership.
- Keep your pets’ veterinary record.
- Have emergency contact numbers.
- Keep enough food and water that can last for at least 2 weeks.
- Maintain proper hygiene and sanitation and provide good exercise for your pets.

**ASTRONOMY EVENTS FOR THE SUMMER**

By: John Van Horn

For those of you that like to look at the sky, here are a few “happenings” for the summer.

**June 21** - The Summer Solstice occurs in the northern hemisphere at 6:28 am. The Sun is at its highest point in the sky this day and it will be the longest day of the year. This is also the first day of summer.

**June 26** – A Partial lunar eclipse occurs on this date. In Chicago, the moon will be partially eclipsed at moonrise (5:36 am), so it’s an early morning event.

**July 11** - Total Solar Eclipse. The path of totality will only be visible in the southern Pacific Ocean, Easter Island, and parts of southern Chile and Argentina. If you want to see something spectacular, go on a cruise in the Pacific!

**August 13** - Triple Conjunction with the Moon. The planets Venus, Mars, and Saturn will all be close to the thin, crescent moon on this evening. Look to the west just after sunset. Venus is extremely bright; Saturn and Mars are significantly dimmer. (SEE PICTURE)

**August 17** - Here’s an opportunity to easily observe the planet Venus in full daylight. At 11 a.m. the crescent Moon will be right on the meridian directly south at its highest point. The planet Venus will be only 4 degrees away from it, to the lower left. You should be easily able to see Venus in binoculars next to the Moon and, once you’ve got it located, you should also be able to see it with your naked eye. **Estimating degrees:** Hold your hand at arm’s length, and extend your middle, ring, and pinky fingers, with the three fingers touching. The width of your three fingers is about 5 degrees.

**Event of the Summer**

**August 12, 13** - Perseids Meteor Shower. The Perseids is one of the best meteor showers to observe, producing up to 60 meteors per hour at their peak. This year’s shower should peak on the night of August 12 and the morning of the 13th, but you may be able to see some meteors any time from July 23 - August 22. The radiant point for this shower will be in the constellation Perseus. The thin, crescent moon will be out of the way early, setting the stage for a potentially spectacular show. For best viewing, look to the northeast after midnight.

**September 23, 2010** - Neptune will have completed exactly one orbit since its discovery in 1846. It covers 11/164 of its orbit around the sun.
CSI: Elementary
The STEM team now offers a 3 day forensics exploration unit to solve The Case of the Missing Bike. Students will learn and apply a variety of math and science skills used in forensics—speed calculations, map reading, fingerprinting, DNA analysis, and chromatography—to help solve this mystery. If you are interested in learning more about how this program can come to your school, please email Angel Edmond at edmond@illinois.edu

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