

eRAPPER

Monthly Newsletter of the Maryland Association of Science Teachers
April 2010

Editor's Note

Welcome back! Ah, spring! Warm weather, blooms everywhere, MSA, HSA, AP...then before you know it, graduation!!

With all of the spring activity, our colleagues still managed to find the time to put together some wonderful items to share. You will see a new demonstration this month, some great advice for post-test strategies, 2 websites to bookmark and a new minute of science review.

Please take the time to look these over and let us know what you think. Also, please take a few minutes to provide some suggestions on topics you would like to see covered in future issues.

As summer approaches, some are looking for ways to advance their professional development. JCVI has provided MAST with some information about an offering they are providing this year.

MAST is offering an opportunity on National Lab Day that looks like fun as well as fascinating!! (I'll be there. I hope to see you as well!!)

Let me know what you think! I love hearing from my colleagues all over the state.

Thank you very much for your time, attention and participation.

Donna

Donna Balado, Carroll County • dmbalad@carrollk12.org





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President's Message

The Space Shuttle Discovery landed a couple of days ago in Florida. Space Shuttle landings are not typically big news anymore. Sure, we saw headlines this week because the landing was delayed due to weather, and the approach took the Shuttle over a very large swath of the continental U.S. The bigger, Shuttle-related news centered on the fact that there are only three Shuttle missions left. It's hard to believe, and tough to swallow, that the Shuttle program has reached the end of its lifetime. We've seen so many successes, and collectively felt the sting of disaster. It is difficult to let go of such a potent symbol of American ingenuity, courage, and scientific knowledge.

Though space exploration has often served as the "hook" for interest in science, other stories in the news recently have provided us further rationale on the importance of the public's understanding of science and technology. First, there was the tragic mine disaster in West Virginia. Lives were lost in the dangerous search for hard-to-reach coal seams. Second, more human lives were lost and there is the potential for significant environmental damage due to the explosion and sinking of an off-shore oil drilling platform in the Gulf of Mexico. Both industries are absolutely vital to the U.S. standard of living and economy, and, fortunately, accidents of this magnitude are a rarity. Nonetheless, the incidents serve as reminders to us that our Earth is delicate, and its stewardship must remain a top priority for us all. Education is key to ensuring a sufficiently high level of commitment to its protection.

Frighteningly, however, we, as educators, are keenly aware of the dire state of education budgets for the coming year. Cuts in many school programs have already been made, and more are, undoubtedly, on the way. Yet, we cannot allow these circumstances to deter us from our mission to ensure our schools' graduates are scientifically literate and ready to be active, responsible citizens. There are several unique, low- and no-cost opportunities for us to keep science education on the forefront, and I encourage you to join in wherever you can.

May 6, 2010 will bring you an opportunity to visit the National Library of Medicine at NIH as a part of MAST's Continuing Education Event series, and May 12 is the first National Lab Day. If you have not yet registered your interest in these events, please be sure to go to MAST's website (www.emast.org) or the NLD website (<http://www.nationallabday.org/>) to learn more about how to get involved.

Other exciting opportunities are available as a part of the inaugural USA Science and Engineering Festival that runs from October 10-October 24, 2010 and centers on Washington, DC. See the many activities, contests, and other resources available through this program at <http://www.usasciencefestival.org/>.

Lastly, of course, remember the National Science Teachers Association Regional Conference on Science Education is in Baltimore from November 11-13, 2010. This is an unparalleled opportunity for you to learn from and to network with science education peers from Maryland and from around the nation. Registration will open soon, and additional information is available at the NSTA website (www.NSTA.org).

Science literacy is absolutely vital for all of our students. Our future depends on it. I encourage you to seize the opportunities presented to us in the coming months to help move Maryland students that much closer to this worthy goal.

Warmest regards



mcwelle@carrollk12.org

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The April E-rapper features two sites for you to bookmark for future use in your instruction.

http://www.youtube.com/watch?v=uydzT_WiRz4

My 6th grade students are always amazed that we do Math in Science, and some find it difficult to DO Math in a science class, so I am always looking for quick lessons to help them remember how to find mean average, or averages from data collected in labs. For those school systems that allow you to use youtube, this is a quick lesson with music, cool beat, and great graphics. Don't be surprised if you are humming the catchy theme tune the rest of the day though.

For those of you that use the periodic table this is a great interactive site.

<http://www.chemicool.com/elements/iron.html>

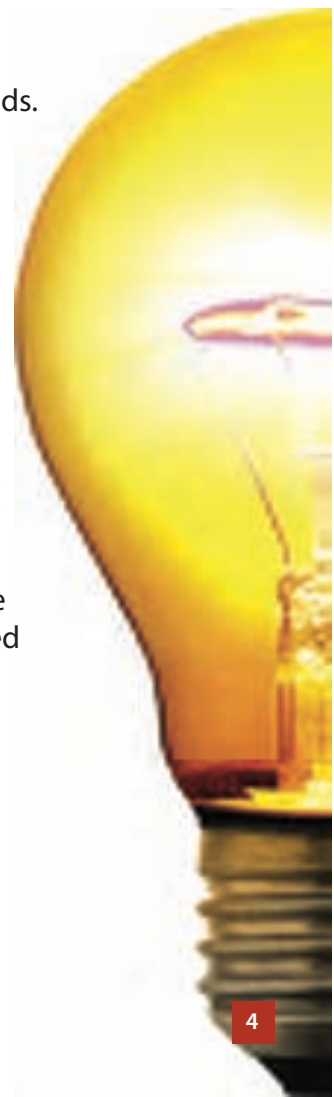
Although it has a lot of advertisements, we have gotten to the point where we ignore the ads. Click on an element. When the screen comes up, the element and these items are listed on the right of the screen:

- General Information
- Energies
- Oxidation and Electrons
- Appearance and Characteristics
- Reactions
- Compounds
- Radius
- Conductivity
- Abundance and Isotopes

The video on iron shows how iron reacts to oxygen. Students can see characteristics of the element, harmful effects, color, number of shells, and all the properties you would ever need to know. This is a great review tool for students. As a teacher feature one element a day. Bookmark this site chemistry teachers, it is definitely "One stop shopping" for periodic table instruction.

Jackie Geer, Montgomery County

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TEACHER TO TEACHER

It won't be long before AP tests, senior exams, and HSAs are behind us. When testing season ends, what do you do with the time until the last day of school? Here are some tips:

1. **Maybe it is time to join forces with another science course and go cross-curricular!**
After the HSA, biology teachers at my school do labs that involve chemistry in order to get students excited for next year. From making ice cream to playing crime scene investigators, students get exposed to new facets of science while having fun.
2. **Get to those labs and projects you did not have time for.** If you are anything like me, there are so many activities to choose from and never enough time. Instead of moving forward, bring concepts back to the foreground to wrap up the year. Last year, my students designed their own labs to test how canned, fresh, and frozen pineapple enzymes affected gelatin. They had fun and got one more review of enzyme structure and function.
3. **Tie popular culture to scientific ethics.** Who says a movie day is a blow-off day? There are tremendous teacher resources for making movies into meaningful scientific discussions. "GATTACA," "X-Men," "October Sky," and "Over the Hedge" are just a few movies science teachers love for learning.

Do you have a question you want answered or advice that would help other teachers? Email us back and your ideas may appear in a future column!

Vikki Bol, Calvert County



The Witches' Potion

This demo is positively too cute. Great for elementary school and middle school students, but believe it or not, high schoolers love it too. If you have difficulty getting your hands on phenolphthalein solution, contact me at grfuhrm@carrollk12.org, and I'll arrange to get it to you. Most fitting around Halloween, but is fun anytime of the year – Have fun with it.

Materials

2-500 mL beaker

4-250 mL beakers

phenolphthalein

3 M ammonia clear

3 M acetic acid

Substitutions

2 large, clear containers

4 tall glasses

colorless household ammonia

vinegar

Procedure

1. Prepare four 250-mL beakers and label them 1-4.
 - o In 1 and 3, put 5 drops of phenolphthalein.
 - o In #2 and #4 put 5 drops of ammonia

If you prepare these ahead of time, cover them to reduce evaporation.

2. In one of the large beakers, put 20 drops of vinegar. Fill the other large beaker with water.
3. Choose 5 volunteers: 4 witches and someone to read the poem.

Read: "Four witches made quite a commotion When I invited them to create a potion.

Into four glasses went the magic brew,"

STOP

continued on next page –

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The Witches' Potion – continued

4. (Fill each glass 1/4 - 1/2 full with water. All will be clear and colorless).

Read: "And into a rage the first witch flew: She shrieked, 'There's no magic in this drink.

To cast a spell, it must be pink!' The second witch laughed, 'The pink is here.

Pour your brew in--the color will appear!'"

STOP

5. (Have Witch #1 pour her water into the glass of Witch #2. The phenolphthalein will react with the ammonia and turn bright pink, indicating the presence of a base.)

Read: "The third witch shrieked, 'We need more!' And gave her brew to Witch number Four."

STOP

6. (Have Witch #3 pour her water into the glass of Witch #4. The phenolphthalein will react with the ammonia and turn bright pink, indicating the presence of a base).

Read: "Now there are two glasses of pink, But no one asked me what I think!

I'll invoke my powers to make it clear- 'Be Gone Pink!' 'Watch it disappear!!'"

END

(Pour both glasses with the pink solutions into the glass container with vinegar. The acid will neutralize the base and the liquid will be colorless again

Gary Fuhrman, Carroll County



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Science Reviews

Seasons in a minute



The Earth is divided into two hemispheres; the Northern Hemisphere and the Southern Hemisphere. The Northern Hemisphere is located north of the Equator and the Southern Hemisphere is located south of the Equator. The Earth is also tilted on an axis. This axis allows the Earth to experience its seasons. During 6 months of the year, the North Pole is tilted directly towards the sun and therefore, experiences 24 hours of sunlight. In contrast, at the same time, the South Pole is directed away from the sun and therefore experiences 6 months of night. There is also an area of the Earth known as the Mid-Latitudes. In this region temperature and precipitation may change during the seasons, but there is not a large change. Most of the Earth experiences four different seasons: Spring, Summer, Fall, and Winter.



Based on your knowledge of the Earth and Seasons, which statement best describes why there are four different seasons on Earth.

- a. The rotation of the Earth.
- b. The revolution of the Earth.
- c. Earth has 2 hemispheres.
- d. Because we have a Moon.

Carl Bilotta, Frederick County

MAST ANNOUNCES ANOTHER ROUND OF EXCELLENCE AWARDS

The Maryland Association of Science Teachers annual award program recognizes excellence in science teaching, administration, and outreach in Maryland. Each year, the Maryland Association of Science Teachers honors a group of people who have made outstanding contributions to science education for the State of Maryland. Awards are presented in the areas of elementary school science, middle school science, senior high science, college science, science education administration, and science outreach. If you know someone who deserves to be recognized for his or her contributions in one of these areas, we encourage you to submit a nomination packet.

Below, you will find the nomination packet. It is also available from our website www.emast.org. So many wonderful people who have earned this award never receive it because no one takes the step to nominate them.

The nominee and nominator do not need to be MAST members. Winners receive statewide recognition, a monetary award, and a year membership in MAST. ***Application packets are due on Friday, May 14, 2010 to:***

Carl Bilotta
c/o Deer Crossing Elementary School
10601 Finn Drive
New Market, MD 21774

240-236-5900
Carl.Bilotta@fcps.org



*MARYLAND ASSOCIATION OF
SCIENCE TEACHERS
AWARD FOR EXCELLENCE IN
SCIENCE EDUCATION 2010*

Candidate's Name:

Home Address:

City:

State:

Zip:

School/Institution:

School Address:

City:

State:

Zip:

School Phone Number:

Home Phone:

Fax:

Email:

Type of Institution:

Public

Private

LEA/County:

Name of Supervisor:

Email:

Name of Principal:

Email:

Name of Local Newspaper:

Signature of Candidate

Signature of Nominator

Print Name of Nominator

Candidates Information:

- I. Years of Service**
- Teaching Elementary
- Other (specify) Middle/Junior High
- Senior High
- College
- Administration/Supervision
- Museum/Outreach

PLEASE COMPLETE THIS SECTION ON ADDITIONAL SHEETS. This section may be completed by the nominator or nominee. (May be submitted electronically.)

- I. Chronological Professional History (list most recent first)
- Dates Position
- II. Professional Memberships (Educational and Scientific)
- III. Provide examples of your activities in science teaching/education which demonstrate excellence in science education in the following areas: (may be submitted in outline form)
- A. Innovative Approaches
- B. Leadership
- C. Professional Activities and Growth
- D. Other
- IV. Attach additional information (references, letters, articles, etc.) to this form when you submit the packet. (Letters of recommendation may be sent electronically)

Return the nomination packet by Friday, May 14th, 2010 to:

**Carl Bilotta
C/o Deer Crossing Elementary School
10601 Finn Drive
New Market, MD 21774**

**240-236-5900
Carl.Bilotta@fcps.org**

Educational Opportunities

USA Science & Engineering Festival

Celebrate Science at the first ever USA Science & Engineering Festival – Sign Ups are Now – For more information visit www.usasciencefestival.org

More than 400 of the nation's leading science and engineering organizations are already part of the first USA Science & Engineering Festival. This new model for celebrating science and engineering includes two weeks of science events in VA, MD and D.C. from October 10-24, 2010 culminating in a two-day Expo on the National Mall. All events are free to the general public and the entire nation will join in through nationwide contests and satellite events.

Here are three great opportunities to get involved right now:

“Why Science is Cool” Video Contest for K-12 Students—in partnership with The Kavli Foundation

The Kavli Foundation, which awards one of the most prestigious science awards in the world (similar to the Nobel Prize), will honor student journalists who enter the USA Science & Engineering Festival's “Why Science is Cool” video contest. Winners will receive cash prizes for their school and the top videos will be featured during the Expo and at other events. Getting your students to create a video can be a great classroom project! Bring out your students' creativity by having them create fun, educational and “contagious” videos that will spread their enthusiasm for science! Submission Period 4/1-7/15. To learn more visit:

http://www.usasciencefestival.org/index.php?option=com_content&view=article&id=92&Itemid=102

You Can Do The Rubik's Cube Tournament - Winners Will Meet Erno Rubik

DC, MD and VA K-12 teams will be competing for the fastest time to collectively solve 25 Rubik's Cubes. The top six finalists will compete for the championship at the USA Science & Engineering Festival Expo on the National Mall on 10/23. Free workshop for teachers on May 8 and the first 30 who sign up will get a free You Can Do the Rubik's Cube prep kit for their classrooms. Prizes range from \$100 to \$1,000 and will be awarded by Dr. Erno Rubik, inventor of the Rubik's Cube. Deadline for Entries: 5/31. To learn more, visit:

http://www.usasciencefestival.org/index.php?option=com_content&view=article&id=88&Itemid=93

Apply to host a Nifty Fifty Scientist at Your School

Fifty of the most accomplished and kid friendly scientists and engineers will visit middle and high schools in the greater DC area. Apply to host a speaker through the Festival website. View speaker bios at

http://www.usasciencefestival.org/index.php?option=com_content&view=article&id=74&Itemid=95

Questions? Please email Ruth Kiefer at rkiefer@mindspring.com

Educational Opportunities

Discover Genomics with J. Craig Venter Institute

The J. Craig Venter Institute is pleased to announce the *DiscoverGenomics! Science Education Program* 2010 Summer Professional Development Program for Science Educators:

- **Genomics Course for Educators** is designed to give science educators a thorough understanding of genomics so that their students can become familiar with this rapidly developing and multifaceted field. GCE will be presented in both San Diego, CA and Rockville, MD.
- **DG! Curriculum Workshop** provides educators an opportunity to learn firsthand the scientific techniques currently employed in laboratories, such as DNA isolation, gel electrophoresis, paper chromatography, and protein analysis. In addition, participants will be eligible to participate in the Mobile Laboratory Science Education Program. The Curriculum Workshop is only available in Rockville, MD.

Each course is limited to 10 participants. Stipends are available for the Maryland courses through a generous donation from Life Technologies Foundation and are available through an anonymous sponsor in California. For more information or to register, visit www.jcvi.org.

Educational Opportunities



Save the Date

**Celebrate Science Education
through Summer PD Institutes
in New Orleans**

- Urban Science Education Leaders Institute
August 2–5, 2010
- Featured Speakers: Dr. Bernard A. Harris, Jr.,
and Dr. Adriane Dorrington.
- Elementary Education Institute
August 5–7, 2010
- Featured Speakers: Rodger Bybee, Linda Froschauer,
Tim Cooney, Steve Rich, and Christine Royce.

For more information on the summer institutes or to register, email
Damaris Blondonville at urbanscience@nsta.org or elementaryinstitute@nsta.org

NSTA National Science Teachers Association

Urban Science Education Leaders Institute:

Developing leaders in urban districts who will assist in building capacity to improve teaching and learning of science in elementary and middle schools.

Who Should Attend: Teams (5-person team required) including 1 District Science Coordinator, 1 Building Administrator-Principal/Assistant Principal, and 3 Teachers.

Fees: \$5,500 per team of 5 (\$1,100 per additional team member). Fee covers registration, program materials, 4 nights lodging, continental breakfast and lunch daily.

For more information or to register, visit:

<http://www.nsta.org/conferences/2010/uselacademy.aspx?lid=tnav>

Elementary Science Institute:

Moving toward excellence in elementary science teaching for learning

Who Should Attend: Teams comprised of Classroom Teachers, Science Coach/Lead Teacher, Building Administrator (Individuals welcome, teams preferred)

Fees: NSTA Member: \$450 per person Non-Member: \$525 per person. Fee covers registration, program materials, continental breakfast and lunch daily

For more information or to register, visit:

<http://www.nsta.org/conferences/2010/summerinstitute.aspx?lid=tnav>

For more information on each Summer Institute, contact Damaris Blondonville at urbanscience@nsta.org or elementaryinstitute@nsta.org.

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“Charting the Course to Excellence”

Baltimore, MD • November 11–13, 2010

CONFERENCE STRANDS include:

- Teaching Science in the 21st Century
- Embracing the World from our own Backyard: Environmental Education
- Building Tomorrow’s Workforce: Science, Technology, Engineering and Mathematics Educ.

Please Contact Elizabeth McCook, NSTA Baltimore 2010 Program Chair, with your questions at Elizabeth.mccook@fcps.org

Volunteers Needed!!! Contact Lois Waters for details lwaters@bcc.edu

Educate to Innovate – Join National Lab Day

On November 23rd, 2009 President Obama announced National Lab Day as part of the Administration's Educate to Innovate campaign. National Lab Day (NLD) is an effort to bring more authentic, hands-on, discovery-based lab experiences to students.

This year's National Lab Day will culminate in a series of events and activities at the local, regional and national level during the first week of May 2010. But it is more than just a day. It is a nationwide movement to support science, technology, engineering, and math (STEM) education in our schools. It is teachers working with community volunteers and communities rallying around teachers and scientists and other STEM professionals donating their time and expertise to our schools. National Lab Day seeks to foster partnerships between teachers, schools, STEM professionals, volunteers, federal agencies, and professional organizations that will continue long after the first National Lab Day.

NLD Partners

National Lab Day is a partnership between federal agencies, foundations, professional societies, and other STEM-related organizations. The National Science Teachers Association is a founding partner of NLD. The National Institutes of Health, the National Science Foundation, and the Department of Energy are among the federal agencies providing support and expertise. The Jack D. Hidary, Bill and Melinda Gates and the MacArthur Foundations are joining with industry to finance the effort.

Getting Started

It's a simple process to join National Lab Day. Teachers register on the National Lab Day website (www.nationallabday.org) and describe the project they want or need in their classroom. Whether its additional lab equipment, personal mentoring from a scientist, a visit to a working lab, technology support, internships, help with a lesson plan, up-to-date career information, help with a science fair project, or just an extra set of hands for a class project, teachers know best what is needed to improve their students' hands-on learning experiences.

NLD is teacher driven. After posting their projects and requests, teachers will be matched with a list of local volunteers. These volunteers-- university STEM students, local scientists, engineers, STEM professionals and other members of the community who have also joined the NLD hub--will form a local community of support, helping the teacher to achieve desired objectives. The NLD website will also connect teachers to the resources, funding opportunities, and information on relevant programs and events that they need. Teachers can also use the site to connect with volunteers, raise funds, and schedule face-to-face meetings and events.

The Role of Volunteers

Volunteers will be able to browse teacher requests and will be automatically notified of any "matches" to teacher requests. Volunteers can respond to specific teacher requests or they can offer general expertise, resources, and/or assistance.

Learn more about National Lab Day at www.nationallabday.org, and join the scores of teachers who have already signed up to bring more hands on learning to their students.



MAST, NIH, and National Library of Medicine Invites you to a Continuing Education Event:

Expand Your Instructional Tool Kit with Online Resources from the National Library of Medicine (NLM)



United States
National Library of Medicine
National Institutes of Health

May 6th, 5:30 to 8:00 pm at the NIH campus, Bethesda, MD

Program

5:30-6:15 Arrival and a light supper with your colleagues

6:15-6:45 Session 1

6:50-7:20 Session 2

7:25-7:55 Session 3

Sessions Introduce the Following Web Resources:

Block One: Forensic View, Harry Potter's World and Visible Human Project

Learn about creative lesson plans to introduce or reinforce topics such as genetics, forensics, and biology

Block Two: Genetics Home Reference and Medline Plus

Discover resources that help link human biology to health and diseases

Block Three: Tox Town and ToxMap – Hands on session in the computer lab

Explore interactive environmental health sites to learn about the effects of toxicological hazards on human health

Costs: *Free for MAST members*; \$10 for guests, or \$15 to include this event & a 1-year MAST membership (regularly \$15). Light supper included. Payment for the event will be taken at the door for guests & new members.

RSVP by April 30th. Session will fill up fast as this promises to be a great event. To RSVP please send an email to [Jacquelyn S Geer@mcpsmd.org](mailto:Jacquelyn_S_Geer@mcpsmd.org)

Check for updates on this event at <<http://www.emast.org>>.

*****Did you attend the MAST Fall Conference? If you did, then this meeting is free for you!*****



MEMBERSHIP FORM

Welcome to MAST! Please print, complete, and mail this form to the address below.

Type of Membership – Please check one space in each column.

- | | |
|--|----------------------------------|
| <input type="checkbox"/> 1 year – \$15.00 | <input type="checkbox"/> New |
| <input type="checkbox"/> 3 year – \$40.00 | <input type="checkbox"/> Renewal |
| <input type="checkbox"/> Student – \$5.00 (1 year) | |

Member Information – Please fill this out completely!

Last Name		First Name		Level – please check all that apply: <input type="checkbox"/> Pre-K <input type="checkbox"/> Elementary <input type="checkbox"/> Student <input type="checkbox"/> Supervisory <input type="checkbox"/> Middle/Jr. High <input type="checkbox"/> High School <input type="checkbox"/> College/University <input type="checkbox"/> Organization (please specify) <input type="checkbox"/> Other (please specify)
Street Address				
City		State	Zip	
Local School System		School		
Home Phone	Work Phone	Cell Phone		
Email Address		Alternate Email Address		

I would like to donate \$ _____ to support:
 the MAST Awards for Excellence in Science Education Program
 the MAST Mini-Grants Program

Please make your check payable to the Maryland Association of Science Teachers (MAST) and send it with this completed application to:
 MAST
 P.O. Box 368
 Finksburg, MD 21048

For Office Use: Date Received _____ Amt Paid _____ Membership to: _____
 Cash _____ Check Number _____ Check date _____ MER 4.10