

Meeting Videos and Handouts from October 2011

A big thanks goes out to Jaci Gentile for hosting the October 4th meeting at Naperville Central High School. Our meeting theme was "Anything Goes"

Jaci Gentile from Naperville Central High School:

- Jaci first showed everyone through the **new science wing** at her school. ([pictures](#)..sorry the first one is fuzzy...wait a couple seconds because the file is big) It was complete with smart board in every classroom, 3 sets of Senteos, and a planetarium fixture ([picture](#)).
- She also presented light demos.
 - This first picture is some **toys** she puts out for the kids to see. ([picture](#))
 - Next she uses a piece of **phosphorescent vinyl and theater gels** (which she got from the drama department at her school). You really need to look at the picture to understand the demo. ([picture of demo](#)) ([Handout](#)) ([Video](#)...you can barely see the glow from the purple and blue windows) Once she turns off the lights kids can see that the purple and blue gels let off enough energy to allow the screen to glow.
 - In a similar demo she points a red, then green, and finally purple **laser** at a phosphorescent screen and shows that the purple laser is the only one that causes it to glow. ([Video](#)) She said that if you can't find a phosphorescent screen you can use glow in the dark Silly-Putty. Janelle Hollingshead added that she uses a glow in the dark Frisbee. ([Video](#)).
 - Jill Sterling said that she can get **purple lasers for \$10** so email her if you want one at jill.serling@gmail.com
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 - For a more expensive laser you can get them at Doc Gizmo ([blue/violet](#)), ([green](#)), ([whole kit for \\$50 including the vinyl sheet](#))

Dan Brown from Naperville Central High School:

- Dan brought in a **cool demonstration you can do with your chemical/physical change** unit. He started with a 500mL beaker filled with ice water and then put in about one inch of paraffin in a big test tube. While heating the paraffin with a Bunsen burner he mentioned that it was a good idea to talk about some physical changes that were occurring including melting ice, melting paraffin, evaporating paraffin, and condensation on the outside of the beaker. After about 1 minute once the paraffin was at a rolling boil he put the test tube into the ice water creating a **huge fire ball** which is a chemical reaction. The test tube may shatter in the beaker. ([Video](#) from you-tube) Make sure you use a **shield**, that you have kind of a high ceiling, and put out **lots** paper towels to catch

the paraffin that may jump out of the test tube....the paraffin should cool down immediately so the paper towels shouldn't catch on fire...hopefully. Try with caution!

Kevin Kopack from Lane Tech:

- First Kevin shares a great web-site that allows students to go on a **periodic table scavenger hunt**. Students can click on each element and find out the state of matter, safety issues, environmental issues, and additional information. ([handout](#)) ([web-site](#)) ([Video of web-site](#))
- Second Kevin showed a demonstration involving a **submarine rises and falls** when put in water. Kevin encourages his students to research how the sub works. The sub is filled with baking soda and it forms bubbles underneath the sub....when it rises the bubbles come up from underneath the sub and then the sub falls again. ([Video of demonstration](#)) ([Video of the explanation on how the sub works](#)) ([buy the submarine here](#))

Sue Bober from Schaumburg High School: (sbober@d211.org)

- Sue presented four things. ([Intro handout](#))
 - Cootie Catchers([Sue's handout](#)) ([Video](#)) ([templates](#)) is a **fun way to review** metric units, elements, polyatomic ions, molecular geometry, and hydrocarbon nomenclature.
 - Sue presented an idea from Chem Ed called ("Worksheets to Hands-On Activities). Instead of worksheet Jamie Flint and Alicia Midler give students **"sorting" activities**.([picture](#)) Example: Make four columns (one for elements, compounds, hetero mixtures, and homo mixtures.) and rearrange the pictures into the correct categories. ([VSEPR](#), [Titration true and false](#), [Thermo](#), [physical vs chemical change](#), [phase diagram true vs false](#), [organic manipulative](#), [light true vs false](#), [classifying matter](#), [Buffer activity](#))
 - **Mole Day** is coming soon! Please see www.moleday.org ([click here for fun shirts, tattoos, ect.](#))
 - E-mail questions to moleday@hotmail.com
 - Finally for **FUNNY chemistry jokes** that have to do with **cats** ([click here](#)) ([Video of Sue telling the jokes](#))

Therese Youel from Cary-Grove:

- First Therese had everybody sing a **solubility song** to the tune of 99 bottles of beer on the wall ([the words](#)) ([Video](#))
- Second Therese presented an activity (which she got from Chem13 news) she likes to do in the **first week of school** with her general chemistry students encouraging them to

engage in inquiry. Students have to figure out which pipettes have identical solutions in them. Pipette A contains the same solution as either pipette 1, 2, or 3. Pipette B has the same solution as either pipette 1, 2, or 3. Pipette C contains the same solution as either pipette 1, 2, or 3. ([handout](#)) ([picture](#))

Steve Wiesbrook from Naperville Central High School:

- His first demonstration was a little dangerous so make sure you **use a shield**. First he added 10 M NaOH to a beaker. Then he added 18M (yes 18M) Sulfuric acid drop wise to the beaker. **You hear a fizzing sound and see a precipitate**. The sizzle was the water boiling off from the heat and the precipitate was sodium sulfate. The solubility rules say that sodium sulfate should not precipitate but because there is not enough water to dissolve the precipitate forms. ([Video](#))
- In his second demonstration he showed how students could make their own glow sticks. I e-mailed Steve for a handout that goes along with this demo. ([Video](#))

Lindsey Stevenson from Naperville Central High School:

- At NCHS they are not allowed to bring latex into the building anymore so they can't use balloons for their **gas laws demo for Boyle's Law**. Lindsey presented a great demo using a ping pong ball. If you crumple the ping pong ball.....then with tongs put it in boiling water...the hot gas inside will un-crumple the ball. ([Video](#))

Julieann Villa from Niles West (julvil@d219.org)

- JulieAnn shared that she teaches a **research class** and highly recommended the "STEM Student research handbook" by Dari J. Harland for any teacher looking to add STEM projects into their curriculum. ([click here to buy](#)) ([picture](#))

Steve Adamski from Timothy Christian School:

- Steve shared a **chemical vs physical activity** you can do with pennies. He has students bring in a pre-1982 penny, heat it in a Bunsen burner at the tip of the inner lighter blue cone until it glows red. Then he has students borrow another pair of tongs and try to bend the penny. Finally he has them re-heat to a glowing red and then douse in water. Students finally rub off any black material they see on the penny and note changes in the penny. Throughout this activity students can note all of the chemical and physical changes they see. ([handout with this and more demos](#)) ([picture](#))

Phil Culcasi from Wheaton WarrenvilleSouth High School:

- Phil presented two things that he learned from workshops at Chem Ed last summer. ([The handout for BOTH of the following activities](#))
 - The first activity is called density dunk where you **find the density of one of your students**. You take a student....put them in a garbage bin filled to the top with water....have students catch the water which falls out of the bin (have a pool on the outside)....have students measure the volume and mass of the water collected...and students should be able to determine the density of the student. It should be around 1g/mL since we are made mostly of water.
 - Phil's second presentation is a technique to **use language to better explain math to lower level learners**. Example: instead of saying three fifths say for every five parts take three.....or instead of 1g/mole (one gram per mole) say "Every 1 mole of water has the mass of 18 grams" You really need to watch the video to get a clear idea of his presentation. ([Video](#))

Lisa Castello from Morton East:

- Lisa presented two things she likes to do for birthdays
 - The first involves **birthday bars** which when dropped one at a time rings out "Happy Birthday." They are made of 1/2 inch metal tubing which you can get at Lowe's or Home Depot. ([measurements for the tubes](#)) ([Video](#))
 - She also likes to throw titanium powder into a flame to **create sparks** during the birthday song. She also uses sticks that she uses for flame tests to add some color. ([Video](#))

Karl Craddock from William Fremd High School:

- Karl first explained three really great **demoes you can do for Halloween with pumpkins**. Two involve fire and one involves foam. Since I don't have a handout it will be easier for you to watch the clips from the meeting. ([Video](#) of Karl explaining demoes) ([Video](#) where Karl explains **SAFETY** information) Since these demoes were not done at the meeting I found some you-tube clips of other people doing the demoes.
 - ([Video](#) from you tube of fire breathing pumpkin with cornstarch)
 - ([Video](#) from you tube of fire breathing pumpkin with calcium carbide....USE A SHIELD! and watch Karl's safety clip)
 - ([Video](#) from you tube of demo of oozing pumpkin...like elephants toothpaste)
 - ([Video](#) from you tube of pumpkin with dry ice....this was not mentioned by Karl but I found it on you tube)
- Karl's next introduced "Moles in Space" which is **a mole that takes off into space with a flare**. He took a mole stuffed animal....took the stuffing out...and glued it to a cup. Next he poked a hole at the top of the cup but on the side (through the mole as well). Fill a plastic dish with 25 mL of water...add 2 or 3 pea sized pieces of solid calcium carbide into the water, put the cup on top of the water and calcium carbide, and then light a

lighter and put the flame near the hole you made in the cup. ([handout](#)) ([Video](#): Karl's directions) ([Video](#): Karl's first attempt) ([Video](#): Karl's second attempt)

Janelle Hollingshead from Lane Tech:

- Janelle presented an idea to **include nuclear chemistry in the first unit where atomic number and atomic mass are introduced**. Once students have a firm grasp on these two ideas she said it was a great time to talk about radioactivity and how atoms fall apart. Students are naturally interested in this subject and they get to practice atomic number and mass number as they predict how certain atoms will fall apart. Really only atoms with huge atomic masses go through radioactivity but the examples she presents to her students have smaller masses just to simplify things. ([Video of demo](#)) ([Great cartoon](#) on you tube that explains isotopes, radioactivity, and fission from you tube to come)
 - To create this demo you need to buy big and little foam balls from Joann's. To hollow out the bigger ball use a spoon and I used water color to color the smaller balls.
- Along with radioactivity it is a good lead into introducing fission and how atomic bombs and nuclear power plants work. After learning about radioactivity she has her students watch the two following clips and ask them if they think nuclear power plants are a great idea.
 - ([Video](#) clip from CBS news about Chernobyl 22 years after the accident)
 - ([Video](#) clip from ABC news about Chernobyl and Japan)
 - ([Video](#) clip from 60 minutes about why France feels that nuclear power is the answer to the world's energy problem)

Amanda Raymond from Glenbard South:

- Amanda had an amazing wedding a few months ago and it of course had a chemistry theme. Instead of lighting a unity candle they created a "Fantastic Four-Color Oscillator" which changed colors throughout the service and reception ([handout](#)) ([Video](#))

Jeromy Bentley from Naperville High School:

- Jeromy presented an ionic dice formula writing and naming game. It is pretty much what the name implies and looks like lots of fun. The video will do a better job explaining it then I would be able to. ([Video part 1](#)) ([Video part 2](#)) ([handout with templates for the dice](#))
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