

C₃ BONDS

VOLUME 1, ISSUE 4

SPRING 2003
SESSION 2

C₃ SCORES SECOND SEMESTER CLASSROOM IMPLEMENTATION

With the second and final round of classroom visits completed and the second semester of the 2002-03 academic year underway, C₃ takes another look at the implementation of its strategies and concepts within the classrooms of its teacher participants. From data collected during the Program Coordinator's observations, the following statistics were noted:



92% of the classes were engaged in investigative experiences with 83% of them done within one class period and 6% considered ongoing experiences.



28% of these experiences included data that was analyzed mathematically through graphing or other means. 100% of the C₃ teachers were using materials and information gained from the project with 81% focusing on higher level questioning techniques and 56% implementing sponge activities or class openers. 59% of the classrooms were using science activities from the summer project or follow up workshops while 75% incorporated classroom management techniques emphasized in the program.



95% demonstrated that their supplies and materials were in use and 70% had highlighted laboratory safety procedures. 25% of all teachers were integrating science disciplines while 53% integrated math with science, 42% integrated history with science, and 48% were integrat-



ing science with other subjects. 47% of lessons observed utilized the learning cycle and 31% of the lessons were taught through inquiry, a BIG improvement in two of our most critical areas. GREAT JOB! 14% of the students were engaged in experimental design, 6% had engaged in a



jigsaw and 20% in a carousel. 28% had learned through demonstrations, and 50% had completed molecular level drawings, another big improvement area. 86% of classes observed were utilizing cooperative learning, 34% of those with assigned tasks. 84% of the teachers emphasized student communication skills and 56% had incorporated alternative assessment techniques. 14% were using student journals and 14% learning logs. 17% of teachers had implemented concept maps and 28% card sorts. 9% had students engaged in performance assessment while 6% completed student portfolios and used rubrics. 33% of the classes had completed projects with 17% of the projects individual and 17% group projects.



50% of all teachers emphasized real world connections during their learning experiences and 12% highlighted careers in chemistry. It looks like everyone is doing an excellent job with their classroom implementation and the C₃ team thanks each teacher for the dedication and the terrific work done so far.



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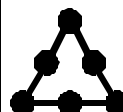
AMAZING MOLECULAR GEOMETRY



C₃ continued its weekend workshop series over the weekend of February 8-9, 2003 with a presentation of "Mastering Molecular Geometry". After "breaking the ice" with cooperative group Introduction Poems that were absolutely hilarious, the group warmed up with a candy bar relay that reviewed concepts from the previous session on Electron Configurations. Dr. Bill helped the participants revisit those important ideas that laid the foundation for the day's activities dealing with molecular geometry. From Bonding Theory and history with Gilbert Lewis, to the Octet Rule and the Five Basic Geometries, the teacher participants jumped in and did an excellent job in exploring these important concepts. Fantastic newsprint presentations were made to illustrate the participant knowledge of Lewis Dot Structures. And using balloons to construct huge three dimensional models of the



geometrical shapes provided lots of fun and excitement! The workshop obviously did the trick because while Cathi was visiting classrooms during the next couple of weeks, more than one teacher had students engaged in the exact same thing; in fact, some even sent us pictures of the "Balloon Art" the students had completed! In addition, each teacher was guided through the construction of accurate models made of sticks and balls that can be used to further enhance the teaching of molecular geometry in the classroom.



Because of the enthusiastic response and involvement of the teachers, the C₃ team was able to facilitate a workshop that successfully modeled how to bring abstract concepts to life for the students that the teacher participants work with each day. Thank you C₃ gang, for always going the extra mile and doing your part to make the program work—it wouldn't happen without YOU!!



INQUIRING ABOUT THE HINDENBURG

The final C₃ workshop of the academic year took place March 8-9, 2003, on the Louisiana Tech campus. The C₃ team engaged the teachers in an experience that brought them full circle from their first meeting during June, 2002. The summer program kicked off using the Hindenburg disaster as the core event that the designated chemistry topics would connect to. So it seemed appropriate that the historical event be the focus of the final meeting before beginning the second phase during June 2003. And because inquiry based learning in the classroom had been a main point of concern throughout the year, each workshop participant was immersed in an inquiry investigation that hinged on the Hindenburg. After getting started with



a "Zeppelin Carousel" that posed trivia questions about the famed Hindenburg as well as the legendary rock group Led Zeppelin, the groups were presented with the problem "What is the relationship between the volume of a helium filled balloon and the weight it can lift?" From this point, each group was responsible for developing an investigation to test its hypothesis to the question, collect and analyze the data, then present their procedure and results to the whole group. It proved to be a task that took the better part of a morning for the teachers to accomplish, but well worth the effort as everyone did a tremendous job. Way to go gang—and here's to inquiring even more about the Hindenburg!



BREAKING DOWN THE BOARD



As the 2002-03 academic year component of C₃ comes to an end, so does the program's Blackboard learning community. But not before Cathi congratulates everyone on a job well done with a big thanks for the efforts put forth. At the end of the final weekend, 95% of the C₃ folks had completed assignment 1, 89% #2, 82% #3, and 87% #4 which measures up to 82% of the group finishing it all. This has been the best overall participation in Blackboard since its addition to our

professional development projects and your commitment and involvement was not only admired, but appreciated. Cathi was always thrilled to be able to give such good reports during staff meetings and brag on the work of such an outstanding group. So, thank you for making Blackboard a priority and begin thinking about discussions that you would find both useful and interesting as we plan for next year's online component. It will definitely be here before we know it!



C₃ Calendar



Attention C₃ gang!! There are some important dates that you will want to go ahead and mark down on your calendar for the 2003-04 year:

June 1, 3:00-6:00: C₃ Orientation for YOU!

Special Kick Off Shindig Following—Details will follow!!

June 2-13, 8:30-3:30 daily: C₃ Year II for YOU!

December 4-6, 2003: LSTA Convention in New Orleans, LA, Radisson Hotel

Important Reminder . . .

If you haven't gotten your "returning" participant application in to Cathi, please do so immediately. In order to plan effectively, the C₃ team needs to know exactly who is going to be where!! You can download a hard copy of the application by visiting <http://c3.latech.edu> You can also apply online at the website if you prefer. Should you or your administration have any questions, please contact Cathi or Linda as soon as possible so that everything can be in place pronto!



FINAL SURVEY SAYS . . .

The results of the final C₃ classroom implementation survey are in and here's how you stacked up with the strategies presented:



100% use of investigative experiences, 93% for one class period, 89% ongoing learning experiences, and 96% having data analyzed mathematically; **100% use of project materials and information**, 93% using higher level questioning techniques, 78% sponge activities and class openers, 93% utilizing activities from the project, 81% implementing project classroom management techniques, 93% with all supplies and materials in use, 85% focused on laboratory safety procedures, 93% integrating science disciplines and integrating math with science, 81% integrating history with science, 74% integrating science with other subjects, 85% focused on the learning cycle, 81% teaching through inquiry, 74% implementing experimental design, 48% using jigsaws, and 89% engaging students through carousels and molecular level drawings; **100% use of cooperative learning**, 89% with assigned tasks, 63% utilizing a group grading process, and 85% emphasizing student communication skills; **100% implementation of alternative assessment techniques and tools**,

59% using student journals, 48% learning logs, 63% conceptests, 85% working with concept maps and card sorts, 63% presenting demonstration assessments and 59% performance assessments, 37% using preassessments, 78% rubrics, 37% with student portfolios, 85% implementing projects with 81% focused on individual work and 59% group efforts; **89% emphasized real world connections**, **52% introduced careers in chemistry**, and **70% integrated technology into their science learning experiences**. Excellent work everyone and many thanks for your commitment to the continued implementation of C₃ strategies and techniques.



**HAPPY EASTER,
HAPPY SPRING,
HAPPY, HAPPY
EVERYTHING!**



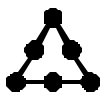
PORTFOLIOS HAVE BEEN ASSESSED AND ARE BEING DELIVERED—BE WATCHING FOR YOUR SPECIAL "D"!!



SPOTLIGHT ON C₃ SUCCESS



Lynn Prosen, St. Thomas More High School, engaged her students in an active opener to a lesson on cations and anions. Students were given cards with either (+) or (-) and the entire group went into the hall to form a “crystal lattice” by bonding the charges correctly. It was terrific and served as an excellent introduction to the card sort lab that followed. Great! . . . **Stacy Thibodaux, Lafayette High School**, had a super learning cycle lesson



going for the study of chemical reactions. Through a transparency opener, demonstration, concept development, and lab exploration, the students were fully engaged. Fantastic! . . . **Sandi Prejean, Vandebilt High School**, had her students make the balloon models from the Molecular Geometry workshop and then hung them from the ceiling to refer to as the concept development continued. They were super! . . . **Don Wheeler, Richwood High School**,



used a two tier card sort he developed as the basis for concept development on speed, velocity, and acceleration. The students then converted their card sort arrangements into a concept map. Wonderful! . . . **Lori Varner, Choudrant High School**, used a card sort as a type of preassessment on density before having the student groups move into a density exploration. The card sorts were revisited at the end of the concept development. Great! . . . **Todd Coble, Richwood High School**, engaged his students in a



lab carousel that featured different chemical reactions. Student groups recorded data then collaborated on balancing equations based on their experiences. Terrific! . . . **Liz Dickson, Dubach High School**, introduced her new students to cooperative learning by emphasizing process skills with a measuring experience. Group tasks were emphasized, as well as safety and careful measurement. Wonderful! . . . **Natasha Bosworth, Carroll High School**, had her students complete “molecular level drawings” of mitosis and meiosis during their biology study. She has also implemented student portfolios as part of each student’s final grade. Great! . . . **Tony Reliford, Booker T. Washington High School**, facilitated a super lab with his students on “Sunflower Seed Moles”.



Much like the lab we did over the summer with the candies, the learning experience utilized sunflower seeds, beans, and corn



and helped the students develop a more concrete understanding of moles and standards of measurement. Fantastic! . . . **Thais Mitchell, Fair Park High School**, set up a lab carousel for her students that



focused on magnetism. Students explored different scenarios while **Thais** monitored and guided. Wonderful! . . . **Nyoka Freeman, Carroll High School**, introduced her students



to a web site that allows them to make puzzles for use as a study aid. Fun . . . **Terrie Johnson, Airline High School**, opened her presentation on Lewis Dot Structures with an “engaging” engager that used analogies between ionic bonding



and getting engaged and covalent bonding and platonic relationships. Student groups then completed a dot structure experience that featured them creating the correct configurations using Fruit Loops. Terrific! . . . **Jon Brinkman, Eunice High School**, had the learning cycle going with his students and their study of work. After a demonstration using a tennis ball, the students completed an exploration about work done by their own physical activities. After some concept development, the students then engaged in an experimental design to learn more. Great! . . . **Tara Allgood, Haughton High School**, challenged her students to find everyday examples of physical and chemical changes in magazines. The students cut out the pictures and



put them in their learning logs with evidence cited. Excellent! . . . **Sam Johnson, Eunice High School**, extended a discussion on observations by having his students work through the “cube” problem.



He even ended it by having the students predict what was IN the cube. Terrific! . . . **Mary Marston, Haughton High School**, used the density card sort and concept map with her students prior to a lab investigation that required density calculations. Accuracy in measurement was emphasized as well. Her students also



had amazing kinetic theory mobiles displayed around the room. Great! . . . **Emilie White, Quitman High School**, had her students working in groups to complete a series of reactions to discover the formation of precipitates. Following the lab, each group had to balance accompanying equations. Wonderful! . . . **David Hough, Weston High School**, implemented an inquiry lab as part of



his ionic and covalent bond lesson. Experimental design was emphasized with excellent classroom management and facilitation. Fantastic! . . . Great job EVERYONE!!

CONGRATULATIONS

C₃ congratulates **David Hough, Weston High School**, and his wife who just celebrated the birth of their first child! Kiley Savannah made her debut on Sunday, March 2 at 3:18PM weighing 5 pounds, 10 ounces. **David** reports that mother, daughter, and dad are all doing great! . . . **Lori Varner, Choudrant High**



School, shares that her nest is now a little emptier because her daughter was recently married! But that just means she must make more room for a new son-in-law. Congrats **Lori!** . . . **Todd Coble, Richwood High School**, has been selected to serve on the Praxis Reviewer Board in Baton Rouge in an effort to keep the test questions correlated to topics teachers deal with in class. Way to go! . . . **Terrie Johnson, Air-**



line High School, has been tapped to write Grade Level Expectations for Science at the State Department. Fantastic! . . . In spite of being named Teacher of the Year last year, **Jamie McKenney, Horace Mann Middle Magnet School**, has been nominated again! Rules stipulate that she can't win for another 5 years, but what an honor! However, make room for another **Mann** teacher. **Stephanie Jones** was also nominated this year and the door is wide open for her. In addition, **Stephanie** reports that her 6th grade lab science student received the "Redmond Award" for overall achievement at the Mann Science Fair this year. This is a first for the school! Plus, she will be taking 12 students to the Central Arkansas Regional Science Fair.



Then on top of all that, **Stephanie** will receive her Master's Degree this spring. Fantastic! . . . And super work everyone. We celebrate your good news with you!



PROFESSIONAL DEVELOPMENT

Mary Marston, Haughton High School, has been selected for the Intech workshop as well as the STARBASE professional development training. You sure can't keep a good teacher down! Great!!



SALUTING THE RED, WHITE, AND BLUE

C₃ continues to remember those whose loved ones are serving in the military during these uncertain times. **Sandi Pre-jean, Vandebilt High School**, has a son in the Marines who has been called to duty and **Terrie Johnson, Airline High School**, awaits her husband's orders from the Air Force. Our best wishes go to them and their entire families with the reminder that they are not alone.



We Do Extra Curricular, Too!



Tony Reliford, Booker T. Washington High



School, has traded his football coaching schedule for track and field training.

Tony and his athletes now enter the exciting spring sports season and we wish them all luck! . . . **Lori Varner, Choudrant High School**, sponsors the Science Club; she incorporated current events into their most recent meeting by inviting a **CHS** alumnus who served in Afghanistan to share his experiences. Excellent! . . . **Jon Brinkman** and **Samual Johnson, Eunice High School**, coach the Science Olympiad teams and took **EHS** to a 6th place overall finish at the recent competition. They finished with a 1st, 2nd, and 3rd for the day. Excellent! . . . **Lynn Prosen, Thomas More High School**, sponsored a Science Breakfast that was a huge hit. The students gathered at 7:00AM in the school cafeteria for a yummy breakfast and enjoyed a program on "The Science of Beadmaking" with **More** ceramics teacher Angie Riehl. Terrific! . . . Way to keep the kids involved and excited about school. Folks like you help spell SUCCESS!



DO YOU GET IT?!

While visiting in classrooms this semester, the following "problems" were posed. Do you get it? Let us know if you do!



1. TRIWINPLE TIME
2. 10ACTITAN
10ACTITAN
3. \$1 \$1 DIAL \$1 \$1

GOING FOR THE GRANTS

TODD COBLE, RICHWOOD HIGH SCHOOL, recently applied for an 8g grant worth \$100,000! The plan is to purchase the computer program that dr. bill uses for the conceptest "competitions" in the classroom. should the grant be funded, every classroom in **richwood high** would have access to the technology system. Terrific!



TRICKS OF THE TRADE . . .

Tara Allgood, Haughton High School, found a way to help with storage as well as classroom management. She put a "clothesline" up across the room and then hung the class safety goggles on it. Students have easy access to the **goggles** when they are needed and it looks cool to boot! Great! . . . And while on the safety track, **Terrie Johnson, Airline High School**, had her students create



safety license plate designs that were terrific. Examples such as "GOGSR4IS" (goggles are for eyes) and "SAFET1ST" (safety first) were displayed in the room as reminders. Excellent! . . .



Todd Coble, Richwood High School, used gum drops and toothpicks to have his students make 3D crystal lattice models. Wonderful! . . . **Jamie McKenney and Stephanie Jones, Horace Mann Middle School**,



both videotaped each other teaching a science lesson and both say it is an EXCELLENT thing to do. Being able to see areas of needed improvement was important but they also were able to experience so many GREAT things the students were doing that they missed while monitoring the class. Super! . . . And thanks for all the helpful hints from the trenches. Your continued hard work and creativity is appreciated!



NEED A BULLETIN BOARD IDEA?

How about "Chemistry is Elemental" . . . "Chemistry is a Blast" . . . "Chemistry is a Gas". **Terrie Johnson, Airline High School**, sparked the idea for a couple of these. They look great and are easy to illustrate. Dress your classroom up with a good bulletin board!



The Celebrations Continue

Jamie McKenney, Horace Mann Middle Magnet School, recently celebrated her 10 year wedding anniversary with her husband Eric. She shares that since it doesn't seem like it's been that long, she's decided to let Eric stay for 10 more! Congratulations **Jamie** and best of luck for 50 more!



WATCHING THE SHIP GO DOWN . . .

C₃ tips its hat to the group's resident court jesters **Samual Johnson** and **Jon Brinkman, Eunice High School**. Once again, they showed their true colors while bringing the house down at the annual **EHS Academic Pep Rally**. Keeping with the theme "Cruising for Academic Excellence", the dynamic duo kicked the festivities off by re-enacting the scene from the movie "Titanic" where the stars are on the front of the ship professing their love for once another. Only this time, **Sam** was Leonardo DiCaprio and **Jon** was Kate Winslet (and yes, he was in drag!). As the love song from Titanic played, our guys appeared on the ship constructed for the pep rally. And things unraveled from there. As **Jon** tried to climb up on the railing, he lost his balance and **Sam's** attempts to help only made it worse. And **Jon** not only went overboard, he took the ship down with him!! It was HILARIOUS, especially since it looked like **Sam** just threw him over! Not to be caught off guard, they snapped back fast, got back on deck for a beautiful dance before exiting. It was the perfect way to kick off a most excellent celebration. And they even made another appearance as part of the Beach Boys (**Sam** on drums and **Jon** on guitar). Great work guys . . . It's good to know some things never change!



FINAL REFLECTIONS . . .

Session 2 teachers shared the following responses to the Post Session Reflection: the most valuable component of the 2002-03 program was the two week summer course. Reasons shared for its importance included content learned, applications experienced, strategies developed, confidence gained, and finally just sharing that it was an excellent experience! Cathi's classroom visits ranked second with comments indicating that the support, positive reinforcement, one-on-one time, and reassurance were invaluable. Plus it seems they just like to see Cathi and wish she could come more often. The LSTA meeting ranked third with our teachers sharing that the networking and sharing done as well as information gained was wonderful. But they also included that it was nice to just be able to have FUN together! Blackboard was the fourth place finisher with the teachers grateful for the discussion and sharing that allowed them to keep in touch. Newsletters and the Reflective Reunion/Learning Cycle Session came in right behind Blackboard in a tie for fifth. The learning cycle project allowed the teachers to apply what they had learned and practice a new strategy while the Newsletters allowed the group to keep up with one another and were said to be interesting, entertaining, encouraging, and fun. Last on the list were the Academic Year Workshops. Though many of the activities were reported to be good and the sharing important, the time involved, travel required, motivation needed and pace made them difficult for most. C₃ appreciates the teacher feedback and promises to use it to continue to improve and refine the pro-

BULLETIN BOARD:

ROCK 'N MOLE 2003!! You won't want to miss getting in on the Mole Day celebration this year. The King himself is a key fixture in the official celebration with special "Molevis Molennium Figurines" available as well as special t-shirts and ornaments with the Mole version of the King of Rock and Roll. You can bet Cathi will be in on it this year and she challenges everyone else to get their students involved on October 23, beginning at 6:02AM! For more information and ideas of how to get started, visit the official web site at www.moleday.org May the Mole Be With You as you prepare to Rock 'N Mole in 2003!

MULTIPLE INTELLIGENCE WHEEL: visit the website http://www.bgfl.org/bgfl.muscat_notes/580pks3.htm To obtain an interactive worksheet which produces a Multiple Intelligences wheel of your levels in each of the intelligences; easy to use for grades 7-adult

The March issue of the Flinn Scientific Department Meeting Safety Notes can be printed by connecting to <http://www.flinnsci.com/homepage/snindex.html> This month's topic is entitled "Chemical Spill Control—How to Prevent and Respond to Laboratory Chemical Spills" and helps you with what steps must be taken to prevent spills, indicates what proper safety is available to contain and control the spill, and points out how to use spill control equipment. Remember, safety first!

Here's a "musical" periodic table. It is the "Element Song" set to animation. Entertaining! Be sure you have sound on your computer to get the full effect!

<http://www.privatehand.com/flashanimation/elements.html>
Also, here's a java applet that shows the periodic table in absorption and emission spectra. Click on any element to see the spectra for it. Very nice, especially if you cannot do flame tests or do not have the spectrum tubes and high voltage power source to do the demo in your class.
<http://javalab.uoregon.edu/dcaley/elements/Elements.html>

Looking for new ways to raise funds for your science department? The following site contains information from the National Gardening Association A fundraising kit for selling bulbs instead of candy: http://www.garden.org/PRESSROOM/Printer-friendly/Feb03-bulbfundraiser_pr.htm

DAILY TREASURE HUNT: Have your students click on different subject areas to find the hidden treasure, locating varying trivia on geography, Earth and sky, science headlines, and word categories. Visit the following website: [Http://www.schoolexpress.com/funtime/th/th_main.php](http://www.schoolexpress.com/funtime/th/th_main.php)

"Polymer Science of Everyday Things" Workshop is a hands-on long distance workshop for middle and high school science teachers. Offered Saturday, March 22, 2003, information can be obtained by contacting Ann Salamone, event co-organizer, at 561-866-0930, FAX 561-395-4242, or e-mail at <ABSalamone@aol.com>. Space is limited to 24 teachers so get involved early!

LUMCON (The Louisiana Universities Marine Consortium) announces its upcoming Open House at the DeFelice Marine Center in Cocodrie, Louisiana. The event will be held on Saturday, April 12, 2003, from 10:00AM—4:00PM and marks the first open house at the facility since 1996. You can visit the website for updates and further information: www.lumcon.com If you are interested in setting up a field trip to LUMCON or the Port Fourchon laboratory, contact Nicole Crochet, Summer Program Coordinator and Marine Education Associate, by e-mailing her at ncrochet@lumcon.edu

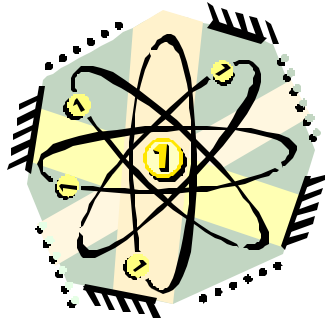
Looking for standards based lesson plans? The LPB/LDE Video Series "Teacher-to-Teacher" has complete lesson plans that include all necessary handouts and references. Ten different science lesson plans for secondary teachers can be downloaded from the LDE web site: <http://www.doe.state.la.us/DOE/assessments/standards/LPBmenu.htm>

<http://www.dbooth.net/mhs/chem/trendgraph/html> contains a great listing of almost any periodic property that you may want your students to graph as well as the basic line graphs of most of the data as well. Check out this excellent resource!

The Louisiana Purchase celebrates 200 years! Check in with the Audubon Zoo to see what resources are available to help you and your students fully engage in this exciting experience. Visit the website at www.auduboninstitute.org or e-mail the audubon folks at air@auduboninstitute.org. Or you can call 1-800-774-7394 or FAX 504-212-5157

Check out the Challenger Learning Center located in the Louisiana Art and Science Museum. The Challenger Learning Center simulation programs are educational, effective, and exciting! Based on your student needs and educational goals, select between "Rendezvous with Comet Halley", "Return to the Moon", or "Encounter Earth". Inservices for teachers are conducted in July for each mission and more information can be obtained by contacting Director Gayle Glusman by calling 225-344-5272, FAX to 225-344-9477, or e-mail gglusman@lasm.org Visit the web site at www.lasm.org and see what all is on tap as the Challenger Center celebrates its 10th anniversary during the 2003-04 school year. It's an experience you and your students will never forget!

The Depressed Atom



This atom walks into a bar, looking really depressed.

He bellys up to the bar and says "Bartender, make it a double!"

The bartender gives him his drink and asks, "Why are you so sad?"

The atom goes to the bartender "I lost an electron!"

The bartender goes, "Well, are you sure?"

The atom says, "I 'm positive!"