CHEMICAL CONCEPTS AND CONNECTIONS FOR TEACHER LEADERS

C_3 BONDS

VOLUME 1, ISSUE 2

HOLIDAY 2002,
SESSION 2

IMPLEMENTATION UNDERWAY FOR C_3 CLASSROOM TEACHERS

With the first round of classroom visits completed and the first semester of the 2002-03 academic year coming to an end, C_3 takes a 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: 87% of the classes were engaged in investigative experiences with 82% of them done within one class period and 25% considered ongoing experiences. 30% of these experiences included data that was analyzed mathematically through graphing or other means. 100% of the C_3 teachers were using materials and information gained from the project with 94% focusing on higher level questioning techniques and 61% implementing sponge activities or class openers. 58% of the classrooms were using science activities from the summer project or follow up workshops while 82% incorporated classroom management techniques emphasized in the program. 92% demonstrated that their supplies and materials were in use and 64% had highlighted laboratory safety procedures. 23% of all teachers were integrating science disciplines while 58% integrated math with science, 48% integrated history with science, and 61% were integrating science with other subjects. 20% of lessons observed utilized the learning cycle and 12% of the lessons were taught through inquiry. 25% of the students were engaged in experimental design, 2% had engaged in both jigsaw and carousel strategies, 23% had learned through demonstrations, and 25% had completed molecular level drawings. 82% of classes observed were utilizing cooperative learning, 41% of those with assigned tasks and 17% included in a group grading process. 71% of the teachers emphasized student communication skills and 69% had incorporated alternative assessment techniques. 17% were using student journals and learning logs while 2% had introduced conceptests. 17% of teachers had implemented concept maps and 17% card sorts. 5% indicated the use of demonstration assessment while 2% had students engaged in performance assessment. Though no classes demonstrated the use of preassessments or student portfolios, 17% utilized rubrics and 23% projects with 77% of the projects individual and 22% group projects. 43% of all teachers emphasized real world connections during their learning experiences and 15% highlighted careers in chemistry. It looks like we're off to an excellent start and the C_3 team thanks each teacher for the terrific work done so far. Great!









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C_3 Session 2 Has Its Own "Bond Girl"!

Hats off to Session 2 participant **Thais Mitchell, Fair Park High School**, who turned in the most accurate response to the challenge posted in the debut edition of "C_3 Bonds". The challenge was to try and get inside Cathi's mind and come up with your idea about WHY she selected "C_3 Bonds" as the newest newsletter title. Though possible that she was just trying to prove that she is just as smart as Cathi, **Thais** hit the nail on the head and figured out what was on Cathi's mind when the title was selected. And she will now receive a fabulous prize pack when the group gathers in January! Here's her "award winning" entry:

Why Did Cathi Choose "C3 Bonds"?

Well, the name "C_3 Bonds" has a direct relationship to carbon bonds or covalent bonds. These bonds "share" electrons to become more stable and create a compound. This newsletter is a way for C_3 members to share news and strengthen our bonds as chemistry teachers. TEAM WORK—when a collection of minds, hearts, and talents work together, great things can happen!

LSTA FILLED WITH C_3 FOLKS

The 2002 Louisiana Science Teachers Association Convention was filled to the brim with C_3 teachers as both sessions gathered in Lafayette for the annual event held October 24-26, 2002. Many of the C_3 participants presented breakout sessions while all in attendance made the rounds and gained resources and strategies from the sessions and courses they attended. Finally, both C_3 session gathered together on the final morning to focus on their roles as teacher leaders, making it their last meeting of the 2002 year. Those spotted from Session 2 include **Tara Allgood** and **Mary Marston (Haughton High School), Jon Brinkman** and **Samual Johnson (Eunice High School), Liz Dickson (Dubach High School), David Hough (Weston High School), Terrie Johnson (Airline High School), Thais Mitchell (Fair Park High School), Sandi Prejean (Vandebilt Catholic High School), Lynn Prosen (St Thomas More High School), Stacy Thibodeaux (Lafayette High School), Lori Varner (Choudrant High School),** and **Emilie White (Quitman High School).** Thank you for representing C_3 in such an outstanding way! As always, you were fantastic—Bill, Linda, and Cathi appreciate your hard work and dedication to your profession and our project!!

BREAKING DOWN THE BOARD

C_3 teachers have currently gotten two Blackboard assignments under their belt. The first focused on Safety in the Science Classroom and Laboratory. Participants shared their experiences with safety implementation as well as reviewing a new web based safety resource. Over 80% of all participants have already completed this assignment while 53% have begun working on the next one featuring an article on Backward Design. This strategy enables teachers to design more effective lessons by looking at student outcomes first, then designing assessments that provide evidence that outcomes have been achieved, and finally selecting the most effective learning experiences to assure student success on planned assessments. The discussions have been in-depth and the dialogue between participants in both sessions lively and beneficial. Congratulations to those C_3 folks who are 100% with their online work and here's to the rest of the bunch catching up quickly! Cathi will see you all on the Board!!

C_3 Calendar

Attention C_3 gang!! There are some important dates that you need to get down on your 2003 calendars. With three academic year workshops left for both sessions, the following dates have been reserved for you at La. Tech:

January 11—Session 2, January 12—Session 1

February 8—Session 1, February 9—Session 2

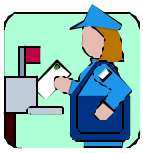
March 8—Session 2, March 9—Session 1

Remember that you can attend with a different session from your own as long as you let the C_3 team know of your plans. Your summer session will be a joint venture with both sessions meeting during this session:

June 1—13, Sessions 1 & 2 combined at La Tech

More information will be provided in early January but should you have questions, contact the C_3 office at your earliest convenience. See you then!

We Need To Know . . .



Let us know immediately if there have been any changes to your personal information since you began the project. Should your mailing address, school information, or e-mail address have changed, please let the C_3 office know as soon as possible. In addition, if your teaching schedule is going to be different during this next semester, Cathi needs to know that before she schedules the second set of classroom visits. All teachers on block schedule should confirm their spring schedule with Cathi before the holiday break to prevent confusion in the new year. Your cooperation will be greatly appreciated!!

2003 CLASSROOM VISITS ARE ALMOST HERE!

With the first set of classroom visits just now completed, Cathi is already gearing up for the next round of teacher observations. Slated to begin in mid-January, the visits will be similar to what the C_3 teachers have already experienced. However, during the second round we will be looking for more of you to implement strategies that you might not have had a chance to try during the earlier part of the academic year. The areas needing more focus and attention can be noted in the implementation data recorded in our opening article. Each C_3 teacher is encouraged to think of additional strategies that they can try and then challenged to work diligently toward further implementation in 2003. Let's really put our C_3 experiences to work for us as we get the new year underway—make 2003 a year to remember!!

MERRY CHRISTMAS FROM THE C_3 TEAM!!!

May bells be ringing . . .

May all your days be merry and bright . . .

May all your Christmases be white . . .

May you be rockin' around the Christmas tree . . .

May Santa Claus coming right down Santa Claus Lane be what you really see . . .

May this year's Christmas be all that it can be . . .

HO! HO! HO! from Santa and me!!

SPOTLIGHT ON C_3 SUCCESS

Jon Brinkman, Eunice High School, guided his students through the study of the Law of Definite Composition as well as the Law of Multiple Proportions using nuts and bolts. Cooperative groups of students discovered the concepts through their individual investigations. Super! . . . **Sandi Prejean, Vandebilt Catholic High School,** developed "Sandi Prejean's Dynamic Floor Plan" to develop electron configurations with her students. An interactive learning cycle lesson that used buildings, furniture, and people to represent energy levels and electrons, it enabled the students to grasp this abstract concept. Terrific! . . . **Stacy Thibodeaux, Lafayette High School,** engaged her students in the graphical analysis of data sets as a learning strategy when covering trends in the periodic table. She also used components from the C_3 workshop on the Periodic Table. Wonderful! . . . While focusing on the electromagnetic spectrum, **Lynn Prosen, St. Thomas More High School,** delighted her students with demonstrations using a light box and bulbs containing different gases. In addition, **Lynn** has an awesome timeline up that her students developed from their independent research. Fantastic! . . . **Liz Dickson, Dubach High School,** used her timeline as part of her lesson on DNA as well as emphasizing real world applications and careers connected to the topic. Her students brought the concept to life by making DNA models. Great! . . . **Mary Martson, Haughton High School,** used hot wheels cars to teach experimental design with her students. Graphical analysis of their data was also emphasized as the groups used their new graph boards! Wonderful! . . . **Stephanie Jones, Horace Mann Middle Magnet School,** designed an excellent learning experience for her students simply using an umbrella. Students focused on observations and inferences before moving into properties of substances. Fantastic!! . . . **Tara Allgood, Haughton High School,** gave her students a real treat when she used bubble gum to guide them in experimental design. Graphing was also incorporated as well as the use of their learning logs. Super! . . . **Samual Johnson, Eunice High School,** engaged his students in the study of levers and simple machines by doing a demonstration using a 2 X 4 and wood fulcrum. With a student involved, he posed different scenarios and problems for the lever and led the students in a discussion that focused on application and real world connections. Terrific! . . . **Jamie McKenney, Horace Mann Middle Magnet School,** organized an ongoing lab experience for her students as they studied melting point of different substances. Students collected data, analyzed and graphed it, then presented to the class. Great! . . . **Todd Coble, Richwood High School,** developed a card sort on atoms that was then transferred into a concept map by his students. Good job! . . . **Terrie Johnson, Airline High School,** has been on the "carousel express", designing a number of different carousel lab investigations and experiences for her students. In addition, she developed a modified "jigsaw lab" where cooperative groups each worked on a different reaction then shared results. Fantastic! . . . **Don Wheeler, Richwood High School,** focused on process skills when covering physical properties of matter. Through observation, inference, classifying, organizing data, then working through a card sort, the students were immersed in process skills! Great! . . . **Thais Mitchell, Fair Park High School,** used paper clips to engage her students in a polymer/monomer demonstration. Students also worked on free style concept maps as part of the study. Terrific! . . . **Tony Reliford, Booker T. Washington High School,** had his students do research projects on elements, then make an oral presentation to the class. Wonderful! . . . **Emilie White, Quitman High School,** implemented a modified version of the lego periodic table experience. She replaced the legos with pieces of plastic lattice that she cut and painted different colors. The sets were put in zip lock bags and worked great! . . . **David Hough, Weston High School,** guided his students in discovering density concepts using demonstrations from this summer. He used the "Magic Popcorn"and "Film Canister Buoyancy" as well as the Coke vs Diet Coke Demo. Terrific! . . . **Lori Varner, Choudrant High School,** and her students made ice cream as part of her study of phase changes. Fun! . . . **Natasha Bosworth** and **Nyoka Freeman, Carroll High School,** are implementing class notebooks developed from an online resource. Excellent job everyone . . . Way to really let your light shine!!

More Good News . . .

Terrie Johnson, Airline High School, will be part of a Teacher Leader Academy in the College of Education at La. Tech this winter and spring. Super! . . . **Lori Varner, Choudrant High School,** took 5 students to a Science Expo at LSU and reports that it was MORE than worth going. In addition, **Lori** was named to Who's Who Among American High School Teachers. Wonderful! . . . **Sandi Prejean, Vandebilt Catholic High School,** presented a short course and workshop using cybered software online and incorporated a card activity to do a review using the pre-test/post test feature of the software. Terrific! . . . **David Hough Weston High School,** continues to make progress in his National Board Certification process. Keep up the good work! . . . **Don Wheeler, Richwood High School,** shares that his students continue to be a mainstay in local newspapers and on news programs with their innovative and exciting programs. Tremendous!! . . . **Jamie McKenney, Horace Mann Middle Magnet School,** shares that construction has FINALLY begun on their long awaited new science building. Goodbye temporary trailers! Fantastic!!

SPOTTED OUT AND ABOUT . . .

Terrie Johnson, Airline High School, was spotted at the Aerosmith concert in Bossier City, LA. While **Liz Dickson, Dubach High School,** was seen kicking her heels up at a festive Tech function. Of course, that means that Cathi was there too! Kudos to these folks for demonstrating that you can work AND play hard, just like all good teachers should!!

ATTENTION ALL C_3 HIGH SCHOOL LEVEL SCIENCE TEACHERS:

LSU's Sigma XI is offering a one day workshop on January 18, 2003 for high school science faculty to engage in experiences using computational science to help high school students better understand complex science and engineering problems. Held on the LSU campus, the workshop is entitled "Helping Students "See" the Invisible: Using Computational Science in Your Classroom". The workshop will explore how the tools of computational science can help your students with phenomena that is too small (atoms), too large (universe), too fast (photosynthesis), too slow (geologic processes), too complex (automobile engines), or too dangerous (toxic materials). The application deadline is January 2, 2003 and more information as well as an online application can be obtained by visiting the following web site: http://lbrn.lsu.edu/sigma-xi

We Do Extra Curricular, Too!

Jon Brinkman and **Samual Johnson, Eunice High School,** coached the Bobcat Football team into the playoffs before **Samual** changed hats and took the reins as the Head Girls' Basketball Coach. The girls won his season opener and they are now off and running! . . . **Sandi Prejean, Vandebilt Catholic High School,** is the Moderator for the District Champion Swim Team! . . . **Stacy Thibodeaux, Lafayette High School,** not only continues her cheerleader coaching but is also serving as the sponsor of the Science Club . . . **Don Wheeler, Richwood High School,** keeps/runs stats for the ULM football and basketball teams . . . Way to go gang!!

ELVIS HAS NOT LEFT THE BUILDING!!

Liz Dickson, Dubach High School, and her students had Cathi "All Shook Up" when she entered their classroom and found pictures of Elvis posted all over the room as well as her work area. It was their way of saying "welcome" and "we want you to feel at home". And it worked!! Thanks to you all for such a wonderful surprise . . . You definitely rocked!!

"IF YOU KEEP DOING THINGS THE SAME WAY, YOU WON'T EVER GET DIFFERENT RESULTS" *advice passed along to a new recruit by his first employer*

HAPPY NEW YEAR TO THE C_3 CREW!!

REMEMBER WHERE YOU HAVE BEEN, FOCUS ON WHERE YOU ARE GOING

BULLETIN BOARD:

Check out two new named elements: Visit http://www.greensmiths.com/newest%20elements.htm

GEE Teacher to Teacher Videos are now available from Louisiana Public Broadcasting and Louisiana Department of Education. Individual sets (10 half hour lessons) in the areas of language arts, math, social studies, and science are $75 each or the entire GEE series (40 tapes) can be purchased for $300. To order by phone or get further information, call 1-800-272-8161, ext 4206. Or, you can e-mail to edserv@lpb.org

The Louisiana Governor's Environmental Education Commission in partnership with ALCOA announces the First Environmental Awareness Art and Language Arts Contest for students ages 5-9, 10-13, and 14-18. The overall winner receives $250 and prizes in each category will be as follows: 1st place-$100, 2nd place-$75, and 3rd place-$50. The theme is "Louisiana, The Water State" and winning entries will be posted on billboards, postcards, and/or posters. Deadline for entries is March 31, 2003. Contact the Louisiana Office of Environmental Education for contest guidelines and an application form: toll free 1-877-523-6833 or 225-763-3537. Visit the official web site at www.gov.state.la.us/enved

The Teacherline Professional Development Online project offered by LPB contributed the following:

Interested in free educational videos? Visit http://www.karolmedia.com/resources/free/freepgs/phillip,htm
Video topics include "the truth about water", "slinky science", "think smart", "crude energy", "the search for solutions", and more. Teaching guides are shown on the site that may be used with or without the videos.

Looking into getting new handheld technology for your classroom? The following sites provide extremely useful information:
http://www.handheldcomputerdepot.com/
http://eduscapes.com/tap/topic78.htm

Check out the Young Naturalist Awards for 2003—the deadline is just two months away!! Visit the web site at http://www.amnh.org/youngnaturalistawards

NASA announces a great contest that gives all students a chance to make history by naming two rovers being launched to explore Mars. The NASA "Name the Rovers" contest is a collaborative effort between NASA and the LEGO Company. The contest is open for submissions through January 31, 2003 and winners will be announced prior to the launch in spring of 2003. Information about the contest is available at the following site: http://www.nametherovers.org Information about the rovers is located at http://mars.jpl.nasa.gov/mer

Present at the Chem Ed Conference at Auburn University, in Auburn, Alabama July 27-31, 2003. The new Chem Ed 2002 web site is now available at http://www.chemed.auburn.edu You are invited to submit a proposal for a presentation in one of the following formats: half day hands-on workshop, full day hands-on workshop, 50 minute presentation, short course, symposium participant (six topics to choose from). Descriptions can be found at http://www.chemed.auburn.edu/proposal_types.html Proposals can only be submitted via the new website and the deadline for submission is February 3, 2003. Questions about proposal submissions should be directed to Program Content Chair, Dr. Cathey Donald at cdonald@auburnschools.org

The November issue of the Louisiana Science Teachers Association LASER newsletter is currently available online. Visit the web site at www.lsta.info for all the latest news.

Looking for interesting trivia for your students? You can find out what Cheeze Whiz is made of by checking out this site: http://pubs.acs.org/cen/whatstuff.stuff/html

Help your students visualize the ideas of EM waves and atoms on the periodic table. Visit the following site and check out the table of contents to see what all they have http://www.colorado.edu/physics/2000/applets_ST.html

If you are searching for sources of grants and teach Earth or Environmental Education, check this out: http://enviroscapes.com/funding/html

Have a question about classroom strategies in science or math that you would like help with? Contact the Math and Science Mentoring Archives at http://www.sedl/org/scimast/archives/
The archives contain questions posed by teachers about instructional resources, teaching strategies, content, and assessment issues. You may submit your own question or read those already posted!

INSPIRATION FOR THE C_3 CROWD . . .

Are you a champion of visual learning in your classroom, school, or district? Apply for Inspiration Software's fifth annual Inspired Teacher Scholarships for Visual Learning. On March 28, 2003, Inspiration Software will grant 30 scholarships in the amount of $750 each to educators who champion the integration of visual learning and technology into their curriculum. Designed to support teachers in their ongoing professional development, the scholarships are available to defray the costs associated with attendance at a conference, class, or workshop that focuses on visual learning and technology. Deadline for entry is February 28, 2003. Learn more about the scholarships and apply on online at www.inspiration.com/scholarship.

Other "inspired" sites include the following: www.comsewogue.k12.ny.us/curriculum/conceptmaps (view lesson plans using Kidspiration and Inspiration created by teachers from the Comsewogue School District in New York); www.ettc.net/techfellow/insipr.htm (a page created by Kathleen Willson about concept mapping and Inspiration as part of a web site dedicated to helping teachers use technology as a tool to integrate standards into the curriculum).

If you have Inspiration or Kidspiration projects that you want to share, just e-mail them at Marketing@inspiration.com If selected, your project will be published on the Inspiration web site and you'll receive a t-shirt!!

IS THERE A SANTA CLAUS?

As a result of an overwhelming lack of requests, and with research help from that renown scientific journal SPY magazine (January, 1990) - I am pleased to present the annual scientific inquiry into Santa Claus.

1. No known species of reindeer can fly. BUT there are 300,000 species of living organisms yet to be classified, and while most of these are insects and germs, this does not COMPLETELY rule out flying reindeer which only Santa has ever seen.

2. There are 2 billion children (persons under 18) in the world. BUT since Santa doesn't (appear) to handle the Muslim, Hindu, Jewish, and Buddhist children, that reduces the workload to 15% of the total - 378 million according to Population Reference Bureau. At an average (census) rate of 3.5 children per household, that's 91.8 million homes. One presumes there is at least one good child in each.

3. Santa has 31 hours of Christmas to work with, thanks to the different time zones and the rotation of the earth, assuming he travels east to west (which seems logical). This works out to 822.6 visits per second. This is to say that for each Christian household with good children, Santa has 1/1000th of a second to park, hop out of the sleigh, jump down the chimney, fill the stockings, distribute the remaining presents under the tree, eat whatever snacks have been left, get back up the chimney, get back into the sleigh, and move on to the next house. Assuming that each of these 91.8 million stops are evenly distributed around the earth (which, of course, we know to be false but for the purposes of our calculations we will accept), we are now talking about 0.78 miles per household, a total trip of 75.5 million miles, not counting stops to do what most of us must do at least once every 31 hours, plus feeding and etc. This means that Santa's sleigh is moving at 650 miles per second, 3,000 times the speed of sound! For purposes of comparison, the fastest man-made vehicle on earth, the Ulysses space probe, moves at a poky 27.4 miles per second - a conventional reindeer can run, tops, 15 miles per hour.

4. The payload on the sleigh adds another interesting element. Assuming that each child gets nothing more than a medium sized-lego set (two pounds), the sleigh is carrying 321,300 tons, not counting Santa, who is invariable described as overweight. On land, conventional reindeer can pull no more than 300 pounds. Even granting that "flying reindeer" (see point #1) could pull TEN TIMES the normal amount, we cannot do the job with eight, or even nine. We need 214,200 reindeer. This increases the payload - not even counting the weight of the sleigh - to 353,430 tons. Again, for comparison - this is four times the weight of the Queen Elizabeth.

5. 353,000 tons traveling at 650 miles per second creates enormous air resistance - this will heat the reindeer up in the same fashion as spacecraft re-entering the earth's atmosphere. The lead pair of reindeer will absorb 14.3 QUINTILLION joules of energy. Per second. Each. In short, they will burst into flame almost instantaneously, exposing the reindeer behind them, and create deafening sonic booms in their wake. The entire reindeer team will be vaporized within 4.26 thousandths of a second. Santa, meanwhile, will be subjected to centrifugal forces 17,500.06 times greater than gravity. A 250-pound Santa (which seems ludicrously slim) would be pinned to the back of his sleigh by 4,315,015 pounds of force.

In conclusion - If Santa ever DID deliver presents on Christmas Eve, he's dead now. Merry Christmas!!