

# C<sub>3</sub> BONDS

VOLUME 3, ISSUE 3

WINTER 2005  
YEAR 2

## C<sub>3</sub> Year 2 Teachers Get Into Brain Based Teaching and Learning!!

With the C<sub>3</sub> Program structured to target reform based strategies such as cooperative learning, the



learning cycle, alternative assessment, and inquiry based experiences, it was a natural extension for the project to expand its focus into brain based strategies. Research shows us that brain based learning is absolutely the best way to facilitate student success in the classroom. *But what exactly is*



*brain based teaching and learning? And how do you incorporate it into your planning and instruction?* As its third Blackboard assign-

ment, the group explored these questions while engaging in a lively discussion about the following strategies and how they were featured as an integral part of each teacher's planning and instruction:

1. Brainstorming and Discussion
2. Drawing and Artwork
3. Field Trips
4. Games
5. Graphic Organizers, Semantic Maps, Word Webs
6. Humor
7. Manipulatives, Experiments, Labs, and Models
8. Metaphors, Analogies, Similes
9. Mnemonic Devices

10. Movement
11. Music, Rhythm, Rhyme, Rap
12. Project-Based and Problem-Based Instruction
13. Reciprocal Teaching and Cooperative Learning
14. Role Plays, Drama, Pantomimes, Charades
15. Storytelling
16. Technology
17. Visualization and Guided Inquiry
18. Visuals
19. Work Study and Apprenticeships
20. Writing and Journals

Furthermore, as the Year 2 group became actively involved in sharing what they had learning during the past two years as C<sub>3</sub> Collegial Coaches, it was the perfect time to see how brain



based strategies factored into their overall process. In looking at what strategies were most effective in their own experience, they were able to better facilitate discussion with their colleagues about differentiation and multiple strategies in the classroom. C<sub>3</sub> appreciates the efforts that each teacher has shown toward not only making their own classrooms better learning communities, but those



across their schools as well! Good job everyone!!

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## C<sub>3</sub> ISSUES A PUBLISHING CHALLENGE!!

With most science fairs completed and students investigations well underway throughout the academic year, C<sub>3</sub> reminds its teachers that an opportunity for their students' work to be published is only a simple submission away!! With Cathi in the classrooms seeing the caliber of work that the students are doing, there is no doubt that they are in an excellent position to have their work published in Louisiana Tech University's Student Research Journal. And with most of the work already completed with their experimental design lab reports, only some minor additions and edits will be needed to have the work ready for submission this spring. The deadline for submitting student work is April 8, 2005 which gives the students ample time to not only get their



and edits will be needed to have the work ready for submission this spring. The deadline for submitting student work is April 8, 2005 which gives the students ample time to not only get their

science fair papers ready for submission, but a chance to even conduct a new investigation and submit its report. What an excellent opportunity for the students, and your school, to have their work published and on record for others to study and learn from. And what wonderful publicity for you, your students, the school, and school system to have such a feather in your cap. So, the challenge is extended to each C<sub>3</sub> teacher to have at least ONE student submit a research report by the April 8 deadline. And as an incentive for you, for each student paper that is submitted from your classroom, your name will go into a special drawing for a truly fabulous prize. DON'T MISS THIS OPPORTUNITY—your students will forever thank you for enabling them to accomplish such an exciting and rewarding task that could open all kinds of doors for them as well as you!!



### LOOK AT WHAT WE'VE DONE!

**During the academic year, you have completed the following professional activities:**

- Blackboard assignments on the Learning Cycle, Collegial Coaching, and Brain Based Teaching and Learning strategies
- Development of a professional portfolio
- Worked with colleagues to share the C<sub>3</sub> program through Collegial Coaching
- Two classroom observations and visits
- Designed a Year Plan implementing C<sub>3</sub>



**LOOK FOR EXPERIMENTAL REPORT GUIDELINES FEATURED ON PAGE 10 OF THE NEWSLETTER**

### MARK YOUR CALENDARS NOW!!

*Dates To Remember*



**March 5-6, 2005: Year 2 Workshop Weekend #2**

**April 8, 2005: Deadline for Student Submission for the Research Journal**

**April 16, 2005: UP! UP! And Away! Workshop at Tech For Physics and Physical Science Teachers**

HAPPY  
ST. PATRICKS  
DAY  
FROM THE C<sub>3</sub>  
TEAM!!



## BREAKING DOWN THE BOARD

Year 2 C<sub>3</sub> teachers are currently engaged in completing three online assignments as their Blackboard experience continues. With 100% of the Year 2 participants successfully completing the Learning Cycle assignment and discussion, 95% have also addressed Assignment #2 which stems from the recruitment of colleagues as part of the collegial coaching each teacher was asked to initiate during the first semester of the 2004-05 academic year. Assignment #3 is entitled "Brain Based Teaching and Learning" and provides teachers with a forum for discussing how these different strategies were not only found within the C<sub>3</sub> project, but also being used in each teacher's classroom. The discussion was guided by the following questions: *Which brain based strategy do you feel you personally respond most positively to or would prefer to learn through? What areas of brain based learning do you feel you are already most proficient in and incorporate often in your classroom? What brain based strategies do*



*you feel you could work on implementing during the second semester of this school year? How have your students responded to new methods of instruction? Are there strategies that you are hesitant to attempt and why? In looking at the list of brain based strategies, what do you think the true strengths of this really are?* 89% of all Year 2 folks have completed the third assignment and the entire group can boast of being near the 100% mark across the Board. An "Impact Analysis" of the C<sub>3</sub> project in each teacher's individual experience will be completed at the final workshop; teachers will carefully consider which components of the project have been most beneficial as well as the magnitude of growth that each has experienced professionally.

Cathi appreciates the excellent job that everyone is doing with the online learning community and encourages each Year 2 participant to get busy now in order to be sure that ALL assignments are completed by the end of February 2005!



## 2005 CLASSROOM VISITS ARE RIGHT ON TRACK!!

UNBELIEVABLE—that's the only way to describe the job that our C<sub>3</sub> folks are doing in the classroom!! With the emphasis on the learning cycle practically ingrained in everyone's thinking, the natural ease with which each teacher is progressing and implementing the different learning experiences and assessments from the project is simply AMAZING!!! Cathi reports that it has been such a joy to see what a tremendous job the Year 2 crew is doing in the field—you



continue to make us ALL look good!! Remember that we'll be looking for a comprehensive summary of what you've tried during the year when we get together at the last workshop, so now's the time to try something new! And if you need help or support, remember Cathi is just a mad dash away!! Don't hesitate to call as she works her way through the last month of visits—she'll be coming your way soon! Keep up the good work everyone . . . YOU are the heart of C<sub>3</sub>!!



## WISHING YOU LOTS OF CONTINUED MARDI GRAS MADNESS!!

(OR SUPER SPRING FEVER!!!)





# SPOTLIGHT ON C<sub>3</sub> SUCCESS



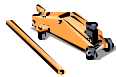
**Chris Baker, Choudrant High School**, used The Cooperative Cube to introduce the scientific method with his Physical Science students. Variables were then introduced with a carousel of scenarios. Excellent! . . . **Michelle Hopkins, Ruston High School**, used "Sponge Creatures" as an ongoing experience where data could be collected and graphed. And after her students played The Safety Game, she used the Safety Cartoon as a method of assessment. Wonderful! . . . **Mike Strange, El Do-**



**rado High School**, developed a lab entitled "The Color of Percent" for his students to complete as part of his learning cycle lesson for percent composition. Cooperative groups worked with color tiles and calculated percent of color tiles by mass. Fantastic! . . . **Michelle Underwood, Chatham Jasper Henderson High School**, collaborated with a former C<sub>3</sub> graduate to develop "The Toilet Tower," a variation of The Two Foot Feat.



Her students used toilet paper tubes to construct towers that would support a text book and they did a super job! . . . **Chris Hightower, Summerfield High School**, shares



that his students had a great time designing and testing their Mouse Trap Cars. What an awesome project!! . . . **Tommy McFarland, Woodlawn Junior High School**, used the Acid-Base Disappearing Demo to engage his students before having them explore through a card sort on sticky notes that they then developed into a concept map. Great! . . .



**Oretha Whitley, Lincoln Elementary**, used lots of real world connections when facilitating her lesson on simple machines. Using cross-curricular materials, **Oretha** implemented stories, graphs, and maps before assessing students with a tool set; students also wrote letters advocating the construction of a ramp at their school. Super! . . . **David Hough, Weston High School**, implemented the Electron Configuration carousel before distributing a set of cards for groups to use as they responded to the discussion questions like a conceptest. Wonderful! . . . **Jimmie Bond, Rayville High School**, implemented group projects while students studied dichotomous keys; after a beetle project, groups completed a Harry Potter Jelly Bean Dichotomous Key. Fun! . . . **Lamar Cranston, Pinecrest Middle School**, developed a wonderful learning cycle on sound. Students engaged in silent brainstorming, and real world applications were highlighted using musical instruments and vocal cords, along with a lab carousel.



Fantastic! . . . **Judy Madden, Bossier High School**, engaged cooperative groups in the Plastic Periodic Table exploration and followed it with the Cousin Bill card sort assessment. Newsprint posters of the final results were developed. Terrific! . . . **Steve Gann, Airline High School**, used the Animal Sounds card sort to organize cooperative groups and it was a huge hit! He followed this with Chemistry is Pun before implementing a History of Science card sort. Students developed timelines following the completion of the card sort. Great! . . . **Melvin Landry, Woodlawn High School**, developed an inquiry-based pendulum lab for his freshmen to engage in while studying gravity. A strong math integration was implemented along with data collection and analysis. Excellent! . . . **Michelle Woodruff, Huntington High School**, developed a "Sweet VSPER Structures" lab using marshmallows and gum drops for her students to do following the Balloon Molecular Geometry experience. Cooperative group grade sheets were used throughout and it was awesome! . . .



**Andrew Coleman, Northwood High School**, took his students outside where they worked in cooperative groups to complete a "Speed Challenge." Students collected data from measurements made while performing different tasks and calculations were completed in the classroom. Super! . . . **Christina Riley, Breaux Bridge High School**, engaged cooperative groups in "A Tom in a Box," where students discovered patterns between the different atomic components as well as the relationship between the data and information found on the periodic table. Data tables were developed and constructed using computers at each lab station. Wonderful! . . . **Trish Tidwell, Dan F. Long Middle School**, and her 8th grade students experienced the wonder of an Egg Drop Project. Not only were the tests conducted, but calculations completed as well. Super! . . . **Cindy Tolliver, Airline High School**, used "Cabbage Juice Capers" as an exploration after the students viewed her demonstrating dry ice placed into cabbage juice. Cool! . . . **Nola Schmidt, Nacagodoches High School**, created a card sort for the procedure steps of her Hydrates lab in order to make the experience more inquiry-based. And the students did an excellent job. Fantastic! . . . . . As can be seen, the C<sub>3</sub> gang continues to shine in the classroom and no doubt their students are the better for it. Thank you for your continued hard work - you are an inspiration to us all!



# CONGRATULATIONS

C<sub>3</sub> congratulates **Trish Tidwell, Dan F. Long Middle School**, on receiving one of the highest awards given by her district. Tapped with the "VIP Award," **Trish** was celebrated at a school board gala as a "very important professional." What an honor! **Chris Baker, Choudrant High School**, returned from LSU in Baton Rouge with another championship to add to his list of accomplishments. **Chris** coached his younger



brother not only to the state title in the Indoor Track and Field Mile competition, but also a record breaking time. How exciting! What wonderful news from our C<sub>3</sub> crew!!!

## COLLEGIAL COACHING CONNECTIONS

**Melvin Landry, Woodlawn High School**, reports that his administration is so supportive of the C<sub>3</sub> Collegial Coaching program, it is paying for substitutes for an entire day while all members of the science department meet to work on the strategies and learning experiences that **Melvin** has to share! In addition, **Melvin** is providing these same strategies for the entire student body as they remediate for the upcoming tests. He also is mentoring 39 students beyond this, counseling them on grades, scholarships, and more. Wonderful!



**Judy Madden, Bossier High School**, has welcomed her collegial coaching colleagues into her room to observe while she models the strategies and learning experiences from C<sub>3</sub>. Super job folks!!



## PROFESSIONAL DEVELOPMENT WORK

**Oretha Whitley, Lincoln Elementary School**, has been busy with the world of professional development. While participating in both C<sub>3</sub> and Monroe City's IMPACTS projects, **Oretha** has also presented workshops on her own! She did a cooperative learning experience for her colleagues before presenting physical science on Parents' Night with "Spanning Spaghetti" and "Penny Passenger Parachutes."



**David Hough, Weston High School**, participated in the CATALyST "Eye Spy" workshop at Louisiana Tech and is already preparing to present a three day forensics workshop this summer. **David** and **Tommy McFarland, Woodlawn Junior High School**, have both worked diligently with Tech's GK-12 program and enjoyed the collaborating with the Tech students in the classroom. In addition, **Tommy** attended the JASON workshop and is now headed to LUMCON for an in-depth workshop there. Great job folks.

Thank you for modeling how we should all continue to push ourselves and develop our professional skills.



## We Do Extra Curricular, Too!



After a highly successful cross country and indoor track experience, **Chris Baker, Choudrant High School**, has cranked up the 2005 outdoor track and field season. **Michelle Underwood, Chatham Jasper Henderson**



**High School**, is serving as the Graduation Sponsor, while providing math tutoring after school. **Judy Madden, Bossier High School**, sponsors the National Honor Society, while **Mike Strange, El Dorado High School**, continues to work with the Key Club. **Christina Riley, Breaux Bridge High School**,



also shares her science expertise as she coaches the Science Olympiad at her school. Thanks to everyone for your continued hard work—your efforts are appreciated by your students and respected by C<sub>3</sub>.

## COLLABORATION IS THE KEY!

**Chris Baker, Choudrant High School**, teamed up with **CHS** colleague Lori Varner, a C<sub>3</sub> graduate, to take 18 students to the American Academy of Forensic Sciences Student Conference in New Orleans. And not only did they have a great time, **Chris** finally learned the meaning of the song "House of the Rising Sun" while in the French Quarter! Way to go **CHS**!!



*IF YOU HAVE TO COMPLAIN ABOUT THE WORK, DON'T COMPLAIN TO THE ONE DOING THE WORK!*

## FIRST ACROSS THE LINE!

**Steve Gann, Airline High School**, may not be an award winning track coach like his Aggie C<sub>3</sub> colleague. But **Steve** made it across the line first in one very important category—he was the first participant to not only complete his C<sub>3</sub> Collegial Coaching, but also turn in ALL his paperwork to Cathi. And had it done by early February. OUTSTANDING!! Way to go, **Steve**. You set a fantastic example for us all!



## BULLETIN BOARD:

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*Are you interested in addressing the Indian Ocean Tsunamis with your students?*

The Bridge <<<http://www.marine-ed.org/bridge>>> Tsunami Data Tip highlights the physical and geological forces behind tsunamis and allows students to work with seismic and historical tsunami data. The Data Tip includes background information, a step-by-step data activity, and discussion questions and is correlated to the NSE standards. To access the Tsunami Data Tip visit the Bridge <<<http://www.marine-ed.org/bridge>>> and click on "Tsunami" in the Data Port column on the right.

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### **National Oceanic and Atmospheric Administration's National Marine Sanctuary Program's Dive into Education 2005!**

The workshop will be hosted by NOAA's Gray's Reef National Marine Sanctuary May 13th and 14th on Tybee Island, Georgia at the Ocean Plaza Beach Resort.

Education Coordinators from each of the 14 sites within the National Marine Sanctuary Program will present their programs that are being specifically adapted to address science performance standards in ocean science and other disciplines. These national level educators will bring their unique programs, materials and perspectives from their part of the country, which includes Hawai'i, American Samoa, California, Washington, Texas, Florida, Georgia, North Carolina, Massachusetts, and Michigan.

For more information on the workshop and an application form, please visit the Gray's Reef website at <[www.graysreef.nos.noaa.gov](http://www.graysreef.nos.noaa.gov)>.

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Check out the Presidential Awards Program by visiting [www.nsf.gov/pa](http://www.nsf.gov/pa) This outstanding program not only recognizes America's best teachers, but also provides the opportunity for these teachers to serve as models for their colleagues and leaders in the improvement of mathematics and science education. Don't miss an opportunity to be a part of this exceptional program.

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### **42 PAGES OF GRAPHIC ORGANIZERS:**

<http://www.lib.ncsu.edu/livinginourworld/PDF/Resource%20center%20documents/Graphic%20organizers.pdf>

Download fully forty-two pages of classroom teaching aids at this site, with printable graphic organizers for every occasion and subject. Generic patterns (Prism, Pyramid, How to Make a Triarama, etc.) are also available in this teaching resource.

## **www.teachersdomain.org**

Teachers' Domain is an online collection of classroom-ready multimedia resources from public television programs like NOVA, ZOOM, Building Big, and A Science Odyssey. Video and audio clips, interactive activities, photographs, diagrams, illustrations, and images of documents bring science to life in exciting interactive ways. Whether used in teacher presentations or assigned to students for self-study, these resources supplement static textbook lessons with compelling images and data.

Teachers' Domain is more than just a media repository. It is designed to give teachers what they need to inspire and educate students, and to prepare themselves for doing so. Teachers will find background essays that provide detail on each topic, discussion questions, lesson plans, correlations to standards, and related subject resources. With these contextualized, teacher-tested resources, educators don't need to spend valuable time searching the Internet to plan lessons. Customizable folders within Teachers' Domain provide educators with quick access to materials they've selected for ready use in class presentations and student assignments.

All resources are correlated to national standards, which can be consulted as needed. There are some state correlations as well. A menu of commonly taught topics and a searchable database make locating resources easy. Teachers' Domain is available at no charge, through the generosity of its funders and WGBH.

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Public and private school teachers are invited to take advantage of Louisiana Public Broadcasting's free Unit-streaming service. With the service, teachers have internet access to more than 2,000 videos and 20,000 video clips to help enhance their classroom lesson plans. The clips cover a range of subjects and address state standards in each of the subject areas. To use this free service, teachers must have internet access and a password obtained from LBP by calling 1-800-272-8161, ext 4206 or 225-767-4206 in the Baton Rouge area. Teachers can e-mail a request to [edserv@lbp.org](mailto:edserv@lbp.org)

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Here's a web site that allows you to generate graph paper in different types and dimensions:

## IT'S HISTORY TIME IN SCIENCE!!

Connections between history and science are being seen in classrooms all over the place! **David Hough, Weston High School**, has a HUGE timeline in the hall outside his room, as does **Trish Tidwell, Dan. F. Long Middle School** and **Michelle Woodruff, Huntington High School**. And **Michelle** has added lots of cards to the set she got in C<sub>3</sub>! The following teachers have timelines in their classroom: **Judy Madden, Bossier High School**; **Nola Schmidt, Nacogdoches High School** **Michelle Hopkins, Ruston, High School**. And of course, **Steve Gann, Airline High School**, not only did the history of science card sort with the students creating their own timelines, he also used the corresponding jigsaw materials! **Andrew Coleman, Northwood High School**, developed a "Fact Wall" made up of famous black scientists and inventors as part of Black History Month. And **Chris Baker, Choudrant High School**, incorporated important events in the lives of his students as part of his classroom timeline. Excellent work gang—this is was integration is all about!



## SAFETY COURSE

The Laboratory Safety Institute (LSI) will offer a two-day short course on lab safety at the AmeriSuites-Baton Rouge on March 23rd and 24th, 2005. Secondary science teachers, science department heads, and science supervisors are encouraged to participate as a means of improving their lab safety programs. The course outline and registration information is posted at LSI's website, [www.labsafety.org](http://www.labsafety.org) For more information, contact Ana Adams (Aadams@labsafety.org or 508-647-1900).



Further contact information is:

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<http://www.labsafety.org>

**Louisiana Youth Environmental Summit: July 25-28, 2005**  
**Chicot State Park in Ville Platte, LA**

For students entering 8th through 11th grades

Experience an intensive, free three-day summit of select middle and high school students and their adult sponsors. Students and sponsors join educators, scientists, policy makers, regulators, dynamic speakers and special guests to discuss environmental issues and actions.

Afterwards students are encouraged to work on environmental-based, community projects with the assistance of their adult sponsors. Students can apply for grants to assist their projects financially. And those students completing their projects are eligible to apply for the Louisiana YES student mentor program.

Louisiana YES sponsors, Cleco Corporation and Audubon Louisiana Nature Center, believe today's students will become tomorrow's environmental leaders. We can work together to shape Louisiana's environmental future—one project at a time.

All summit costs including meals, lodging, educational materials and supplies, field trips, entertainment, recreation and transportation are provided. The only cost not covered is transportation to and from the summit.\*

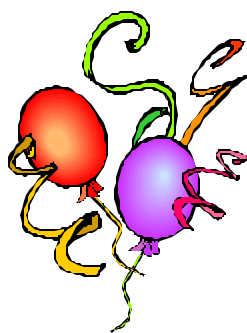
Base camp is beautiful Chicot State Park in Ville Platte, but we'll also take field trips to study environmental issues in surrounding areas.

For more information contact Kathleen Welch at (504) 378-4149, or e-mail [lnceducation@auduboninstitute.org](mailto:lnceducation@auduboninstitute.org).

To download a student application go to <http://www.auduboninstitute.org/lnc>

\*A limited number of stipends are available to help defray these costs.





## *It's a Molecular Geometry Party And You're Invited!!!*

*Who? Mrs. Woodruff's Chemistry Students (YOU!)*

*What? Read the invite, silly!*

*When? Today!*

*Where? At your lab station!*

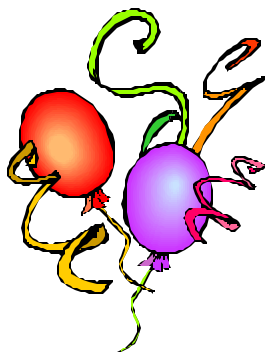
*Why? Because it's CHEMISTRY!!!!!!*

*What to bring to the party??*

*Hot air (your breath!), paper, pen/pencil,  
imagination, a happy and cooperative attitude!*

AFTER EACH STUDENT WAS PRESENTED THEIR "INVITATION" AS THEY CAME INTO THE CLASSROOM, THE FOLLOWING INSTRUCTIONS WERE PROVIDED FOR THE LAB EXPERIENCE:

## Molecular Geometry Party



**Materials Needed:** 20 identical balloons (color is not important), string, scissors, protractor

### Directions:

1. Inflate two balloons to about 80% capacity and tie them off. Try to make the volumes as equal as possible.
2. Using the string, tie the two balloons closely together at the knots. This is a **TWO-PERSON** job! Place them on the desk. The angle between the two balloons should be about 180 degrees. (A linear arrangement)
3. Draw the balloon arrangement on your own paper and label it as "Linear 180°"
4. Repeat the process (steps 1-3) with three balloons. You should get approximately 120 degree angles. (Trigonal planar arrangement)
5. Repeat this process with four balloons. You should get approximately 109.5 degree angles. (Tetrahedral arrangement)
6. Repeat this process with five balloons. You should get approximately 90 degree and 120 degree angles. (Trigonal bipyramidal arrangement)
7. Repeat this process with six balloons. You should get approximately 90 degree angles. (Octahedral arrangement)

# How To Write A Simple Experimental Report

## 1. Title

Write a sentence that relates the independent and dependent variables that were investigated.

## 2. Introduction

Describe the rationale, purpose, and hypothesis for the investigation. Use three questions to guide your writing of the introduction.

- Why did you conduct the experiment? (Rationale)
- What did you hope to learn? (Purpose)
- What did you think would happen? (Hypothesis)

## 3. Experimental Design

Format the experimental process.

- Begin the diagram by drawing a rectangle.
- Write the Independent Variable across the top of the rectangle
- Divide the rectangle into labeled columns to represent the different levels of the independent variable.
- Indicate the number of trials in each column
- Write the Dependent Variable and constants (C) beneath the rectangle.

## 4. Procedure

List the steps followed to complete the investigation. Include the following:

- Materials
- Variables – include independent variable, dependent variable, variables held constant
- Step by Step Directions

## 5. Results

Complete a data table and an appropriate graph for the data using the following guidelines.

### Data Table

- Make a table containing vertical columns for the independent variable, dependent variable, and derived quantity (average). *The independent variable is on the left.*
- Subdivide the column for the dependent variable to reflect the number of trials.
- Order the values of the independent variable-preferably from the smallest to the largest.
- Record values of the dependent variable.
- Compute the derived quantity (average).

### Graph

- Draw and label the X and Y axes of the graph.
- Determine an appropriate scale for the X and Y axes; subdivide the axes.
- Plot the data points on the graph.
- Write a sentence to summarize the data trends on the graph

## 6. Conclusion

Describe the purpose, major finding, an explanation for the findings, and recommendations for further study. Use six questions to guide your writing of the conclusion.

- What was the purpose of the experiment?
  - What were the major findings? *Summarize major findings in one or two sentences; state your interpretation of the data.*
  - Was the hypothesis supported by the data?
  - How did your findings compare with other researchers or with information in the textbook?
  - What possible explanation can you offer for the findings?
  - What recommendations do you have for further study and for improving the experiment?
-