T/TAC BULLETIN

The Virginia Department of Education's Training & Technical Assistance Centers

An inside view

Spring 2005 v. 13, n. 3

The focus of this T/TAC Bulletin is science instruction and the science/literacy link.

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Adapting Language Arts, Social Studies, and Science Materials for the Inclusive Classroom

by Keith Lenz and Jean Schumaker

The ERIC Clearinghouse on Disabilities and Gifted Education (ERIC EC)- ERIC EC Digest #E645 - July 2003

When instructional materials present a barrier to student learning, teachers often adapt the materials to allow students greater access to the information to be taught. These adaptations may involve changing the content of the materials (the nature or amount of information to be learned) or changing the format of the materials (the way information is presented to the learner).

For students with mild cognitive disabilities, most adaptations should be a bridge to skill development, not a substitute for intensive instruction in the skills and strategies that students will need to become independent learners. In other words, adaptations should be approached as a short-term solution to increase access to the curriculum and to increase the probability that the students will be able to complete an academic task. However, there may be some cases in which short-term adaptations become permanent adaptations if they are needed by a particular student.

Ideally, adaptations would be designed into curricular materials by the developers, and the built-in adaptations would be broad enough and flexible enough to assist students regardless of their disability. When they are not, teachers must adapt materials themselves, and effective adaptations take time for teachers to design and implement. In some cases, making and implementing adaptations can be more time consuming and complex than teaching the student the skills needed to meet a particular demand.

A careful process can help to ensure that the decision to adapt materials is the correct one and that adaptations will be effective. This digest describes a process consisting of nine steps for planning and implementing materials adaptations.

Step 1. Create a Plan for Adapting Materials

Effective adaptations require sustained development and support. They must be made within the framework of a larger plan that includes consideration of (a) basic and strategic skills instruction and (b) the roles of people involved in the adaptation process. It is important to involve your administrator and curriculum or program coordinator from the beginning, and identify exactly who will be responsible for making, implementing, supporting and evaluating the adaptation over the course of the year. As much as possible, involve students, parents, paraprofessionals, and others. Adaptations that can benefit an entire class or several classes are more likely to be supported and

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maintained.

Step 2. Identify and Evaluate the Demands that Students Are Not Meeting

The purpose of this step is to define the problem to be addressed by the adaptation. Observe students' performance when they use typical instructional materials. They may have difficulty acquiring or getting the important information from written materials (level 1), storing or remembering the information presented in the materials (level 2), or expressing the information or demonstrating competence on written tests (level 3). If students have difficulty with a given task, different solutions may be required depending on the level of difficulty.

Step 3. Develop Goals for Teaching Strategies and Making Adaptations

Some problems can be solved by adaptations; other problems may signal the need for intensive instruction in skills or strategies. Often, teachers may need to provide adaptations while simultaneously teaching the student the learning strategies he or she needs in order to perform the work. All adaptations lead students to become dependent on the person who makes them. Before an adaptation is made for an individual student, educators must carefully consider the best approach to addressing the student's disability and promoting success. Adaptations should be approached as short-term solutions within a long-term plan for teaching skills and strategies that will promote the student's independence as a learner and ultimately reduce the need for adaptations.

Step 4. Determine Whether Content or Format Adaptations Are Needed

Content adaptations may be made only when the student's Individualized Educational Program (IEP) notes that the general curriculum is inappropriate for this student. Content adaptations must also meet local and state education standards. In some cases, the IEP may address the degree to which the requirements associated with meeting state standards and taking assessments may be modified. The teacher must decide which parts of the curriculum the student will be required to learn and will constitute mastery of the course content.

A careful process can help to ensure that the decision to adapt materials is the correct one and that adaptations will be effective.

When the curriculum is considered appropriate for the student, adaptations may focus on format rather than content. Again, the teacher must identify the critical elements of course content that students must learn: First, identify the critical course ideas or concepts. Then identify the information that must be mastered in each unit to ensure that the critical course ideas are mastered. Finally, determine how students will demonstrate their mastery at the end of each unit and at the end of the course. Format adaptations are made to compensate for mismatches between the presentation or design of the materials and the skills and strategies of the student. In format adaptations, the content is not altered.

Step 5. Identify the Features of the Materials that Need To Be Adapted

The design of materials can present many different types of problems for students with disabilities. Teachers adapting materials should examine each curricular unit for features that might cause a learning problem. For example, the content may be very abstract, complex, or poorly organized, or it might present too much information. It may not be relevant to students or it may be boring. Further, it may call for skills or strategies or background information that the student does not possess. It may present activities that do not lead to mastery, or it may fail to give students cues about how to think about or study the information. Materials also may not provide a variety of flexible options through which students can demonstrate competence. Guidelines for identifying these and other problems in the design of instructional materials may be found in resources like those listed at the end of this digest.

Step 6. Determine the Type of Adaptation That Will Enable the Student To Meet the Demand

Once the materials have been evaluated and possible problem areas identified, the type of format adaptation must be selected.

Format adaptations can be made by altering existing materials- Rewrite, reorganize, add to, or recast the information so that the student can access the regular curriculum material independently, e.g., prepare a study guide and audiotape.

Mediating existing materials- provide additional instructional support, guidance, and direction to the student in the use of the materials. Alter your instruction to mediate the barriers presented by the materials so that you directly lead the student to interact with the materials in different ways. For example, have students survey the reading material, collaboratively preview the text, and create an outline of the material to use as a study guide.

Selecting alternate materials- Select new materials that are more sensitive to the needs of students with disabilities or are inherently designed to compensate for learning problems. For example, use an interactive computer program that cues critical ideas, reads text, inserts graphic organizers, defines and illustrates words, presents and reinforces learning in smaller increments, and provides more opportunities for practice and cumulative review.

Step 7. Inform Students and Parents About the Adaptation

Adaptations are more successful when they are offered and introduced to students at the beginning of the year. Parents should also be informed about them at the beginning of the year. Students should be taught explicit strategies to use any adaptation effectively and how to process the information received through the adaptation. As students progress, they should be taught how to recognize the need for and request materials adaptations. While content adaptation decisions are made at IEP meetings, decisions about format adaptations may be made informally, and parents may need assurance that content is not being altered and that standards are being met.

Step 8. Implement, Evaluate, and Adjust the Adaptation

Resources

Deshler, Schumaker, and McKnight. (1997). *The survey routine*. *Guidelines for identifying features of materials that may be inconsiderate of the learner. Lawrence: University of Kansas Press.*

Knackendorffel, E.A., Robinson, S. Schumaker, J.B, & Deshler, D.D. (1992). *Collaborative problem solving*. Lawrence, KS: Edge Enterprises.

Lenz, K. & Schumaker, J. (1999). *Adapting language arts, social studies, and science materials for the inclusive classroom*. Reston, VA: The Council for Exceptional Children.

COMING SOON!

The Partnership for People with Disabilities at Virginia Commonwealth University announces the new Web course

Abuse and Neglect of Children and Adults with Developmental Disabilities: A Problem of National Significance.

Registration begins February 1, 2005

Funded by the Administration on Developmental Disabilities as a Project of National Significance, the Web course was written for health professionals, and is also appropriate for other professionals and students serving people with developmental disabilities. The 13 self-guided modules include video interview, graphics, interactive content, and self-study questions. CEUs are available.

A flyer describing the course is available at : http//www.vcu.edu/partnership/maltreatment/flyer.pdf (you must have Adobe Reader to open this flyer).

Get complete information and see the Annotated Outline and a Sample Module on the course website, http://www.vcu.edu/partnership/maltreatment?, or contact Peggy O'Neill at 804-827-0194, poneill@vcu.edu.

A Recipe for Attaining "Science Literacy" by Tammy Craft

Perhaps you remember the first time you made "garden soup" as a child. Perhaps you recall the delicious ingredients you added from your backyard. You may even remember how the soup looked and smelled as you dropped grass, leaves, nuts and garden clippings into the mixture of soil and water. The second time you made "garden soup" you added more dirt and mulch to the water and watched as the soup became thick and hard to stir with your wooden spoon. You noticed that rocks fell to the bottom of the soup bowl, grass floated near the top, and the other "stuff" fell somewhere in the middle. Early experiences such as making "garden soup" give us "prior knowledge" which is the foundation for all learning. And prior knowledge is an important ingredient in the recipe for attaining science literacy.

Teachers often ask: What do my students know about science? How do I tap the prior knowledge of my students and motivate them to attain science literacy? We know that in order to make the connection with any new topic, students' need prior knowledge or experiences for understanding new material. Teachers know that "science literacy" is for all students regardless of age, gender, culture, disability or interest, and that science literacy is about active classroom learning. Active learning involves linking and organizing new information to prior knowledge involving conversation, exploration, and experimentation which supports new content.

Students must become active in the reading and thinking process and be responsible for their own learning. In addition to general reading skills needed to comprehend narrative text, readers of science text must be able to apply skills such as:

- Understanding specialized vocabulary and phrases used in science
- Observe and understand patterns, changes and cause-effect
- Interpret symbols, diagrams and draw conclusions
- Organize new knowledge

Consider using thinking maps and outlines to access prior knowledge and help students attain science literacy for purposeful and thoughtful cognitive organization.

1. Bubble maps:

Webbing or mapping is a visual tool to help readers activate prior knowledge and build the understanding of new material. Students will focus on a main idea or topic and describe the qualities or attributes for that topic. At the beginning of a lesson and to engage learners, thisstrategy can be used to build connections and encourage brainstorming among students: What are the obvious attributes? What is the context? How would you describe this thing? As students categorize their lists, a poster in the form of a map or web is developed and displayed throughout the unit. Within large groups, small group activities, or with individual students, mapping can be successfully used with all learners to tap prior knowledge and lay the foundation for content learning.

2. Word sorts and Tree Maps

A "word sort" is a reading strategy which helps students to develop a deeper understanding of key concepts when used for obtaining content knowledge. Word sorts build upon prior knowledge and lay the foundation for thoughtful learning. In a "closed" word sort the teacher provides the category or unit phrase and the student assigns and sorts words under the category. In an "open" word sort the student will group words into categories. The student will then create a label for each category. Using a "tree map," students sort and classify words in context of the main idea. A "tree map" may also be used for sorting and classifying attributes and details that support a unit topic or category.

3. Directed Reading/Thinking Outline:

Similar to the K-W-L chart, the directed reading / thinking outline is a strategy which helps to access prior knowledge and provides students with a system for organizing new information. This strategy gives a purpose for active reading, and may be used to engage students in the exploration of science material. This strategy also gives teachers a tool for evaluating student understanding and misconceptions.

Using the directed reading/ thinking outline:

- Students preview the text, and complete the first two sections of the outline; *What I know I know: and What I think I know:*
- The students will formulate predictions about what they will read which sets a purpose for reading and complete the section; *What I think I'll learn:*
- Students will confirm or reject earlier predictions, and following the reading assignment, students will complete the last section; *What I know I learned:*

Using cognitive organizational strategies, students activate their schema of prior experiences, and develop their own ideas and compare them to the ideas of others.

We hope you found one idea to make your own and share with your science students. As always, happy reading, and remember you are never too old to enjoy the experiences of making "garden soup."

Resource:

Barton Mary Lee & Jordan Deborah L. (2001). *Teaching Reading in Science/A Supplement to Teaching Reading in the Content Areas*. Colorado. Association for Supervision and Curriculum Development

For additional information on science literacy and cognitive organization, contact your literacy specialist or call our TTAC office.

Autism Spectrum Disorders: Information Today, Strategies Tomorrow

March 10-11, 2005

Southwest Virginia Higher Ed Center

Abingdon, VA

March 10

Jed Baker, Ph. D. - Dr. Baker will present a full-day session on social skills training for children and adolescents. Dr. Baker is the director of the Social Skills Training Project, the Social Skills Training for Millburn School District (New Jersey). He is the author of two noted books, *The Social Skills Picture Book* and *Social Skills Training for Children and Adolescents with Asperger Syndrome and Social-Communication Problems*.

March 11

Phil Timp, Director of the Beth Foundation will provide the morning keynote. Phil's motivational message, "In All Her Silence," is an inspiring story about his daughter Beth Timp. She is an unlikely teacher with a regressive disability call Rett Syndrome. Her lessons deal with valuing diversity, adapting to constant change, taking a positive approach to tragedy, staring death in the fac,e and finding the power of peace in life.

The remainder of the day will provide participants with an opportunity to choose between sessions covering topics in the areas of social skills, communication and teaching strategies.

Several vendors will be onsite showcasing software, books, and sensory integration products, as well as other school-related products.

Location and Accommodations - The Autism Spectrum Disorders conference will be held at the Southwest Virginia Higher Education Center in Abingdon, VA conveniently located off of I-81 at Exit 14.

A block of lodging rooms have been reserved at special rates at the Comfort Inn in Abingdon, VA. To make reservations, call the hotel directly at 276-676-2222.

Cost and Registration - A registration fee of $65 covers the cost of materials, breakfast and lunch for both days. Continuing education Units (CEUs) are being offered for an additional fee of $20.

Register on-line through our secure server at www.conted.vt.edu/asd/

Sponsored By - Virginia Department of Education's T/TAC at Virginia Tech

The Language of Science

by Lora Kingma

In schools today, there are more and more students diagnosed with language learning disorders. Language disorders can manifest themselves in a variety of ways. A student may have an expressive language disorder making his language vague or hard to understand. Another student may have a receptive language disorder where he has difficulty understanding questions and/or following directions. Often language disorders go hand-in-hand with written language problems making academic work very difficult, especially at the secondary level.

Science can be especially daunting to the student with a language disorder because of the essential elements needed for success in the science class. A student must be able to problem solve, be a creative thinker, understand spatial relationships, be able to critically observe and make decisions based on experiments. These tasks can be very difficult for students who may have trouble understanding science vocabulary. For example, think of all the terminology used when finding answers using the Scientific Method: identify the problem, research, hypothesize, experiment, use data analysis, and provide a conclusion.

A student with a language disorder may have difficulty using science vocabulary with multiple meanings. He may confuse the word "property" (characteristics/attributes of an object or substance) for property that is owned, such as real estate.

Other language difficulties students may have in science class include situations where they must compare/contrast, provide definitions, and retrieve words. Often these students cannot see the "whole picture" of a concept and instead clue into the details of a lecture. By doing this, they often cannot study using their notes because they have just bits and pieces of information that do not make sense as a whole.
There are several ways in which educators can help students compensate so that they, too, can enjoy the wonders of science. Ten ideas you can use include:

Science can be especially daunting to a student with a language disorder because of the essential elements needed for success in science class.

1. Talking to the student at the beginning of the school year about ways he can compensate for his language disabilities. Have him tell you what works best and what does not help.
2. Use oral/visual/kinesthetic formats for instruction, remembering that students learn in many different ways.
3. Coincide verbal information with demonstrations whenever possible.
4. Label laboratory equipment. Provide picture cues. Color code.
5. Provide cue cards in pictures and words with major steps in a procedure put in sequential order.
6. Assess the student in multiple ways: have him present information, use demonstration, and/or use a portfolio.
7. Organize lab partners. Pair students with peers who would be good language models.
8. Provide and teach memory associations (mnemonic strategies - a device, such as a formula or rhyme, used as an aid in remembering.) See ideas in this newsletter!
9. Underline key words or directions on activity sheets, and then review the sheets with him.
10. Present new and/or technical vocabulary on the chalkboard or overhead. Provide study guides for these words and for lectures given.

The world of science is valuable for all students. Science is generally concrete, can demonstrate real-world experiences, helps students work in groups, and offers alternative methods for evaluation. Finally, science offers fun and exciting experiments and observations. By tweaking lesson plans, offering alternative ways for learning, and providing accommodations, all students can become scientists-in-training!

Using Mnemonics in Science

A mnemonic is a method or system for improving the memory. Try these ideas with your science students to help them remember difficult vocabulary!

My **V**ery **E**asy **M**ethod **J**ust **S**peeds **U**p **N**aming **P**lanets
Mercury
Venus
Earth
Mars
Jupiter
Saturn
Uranus
Neptune
Pluto

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In Chemistry class, this mnemonic helps with the Reactivity series. It lists, in order, a series of elements beginning with the most reactive and ending with the least. It is very helpful when trying to predict the outcome of reactions, and how violent those reactions can be!

Friendly	Francium
People	Potassium
Sometimes	Sodium
Call	Calcium
Me	Magnesium
A	Aluminum
Zany	Zinc
Idiotic	Iron
Looney	Lead
Clown	Copper

Metric System Mnemonics

King	Kilometer
Henry	Hectometer
Died	Decameter
Monday	Meter
Drinking	Decimeter
Chocolate	Centimeter
Milk	Millimeter

The Six Major Land Biomes Mnemonics

The	Tundra
Dry	Deciduous Forests
Desert	Deserts
Grows	Grasslands
Terrific	Tropical Rain Forests
Castles	Coniferous Forests

The Scientific Method Mnemonics

Stanley	State the problem
Gathered	Gather information
Few	Form a hypothesis
Trophies	Test the hypothesis
Racing	Record and analyze data
Slow	State the conclusion
Rabbits	Repeat the work

The Skeletal System Mnemonics

Bacon	Bones
Lettuce &	Ligaments
Tomato	Tendons

Bits and Bytes: Instructional Strategies for Teaching Science

by Glenna Gustafson

"Learning science is something students do, not something that is done to them." (National Science Education Standards, 1996)

There is no better place within the curriculum to include students with disabilities than in Science. In science students can explore, predict, plan, experiment, draw inferences, and communicate about concepts. By utilizing the principles of Universal Design for Learning and the National Science Education Standards, all students can become scientists and meet academic standards.

The National Science Education Standards focus on six aspects of science education. These standards include:

•Standards for science teaching
•Standards for professional development for teachers of science
•Standards for assessment in science education.
•Standards for science content.
•Standards for science education programs.
•Standards for science education systems.

The current Virginia Science SOL are based on the Standards for science education programs. Four significant guiding principles were utilized to develop these standards.

1. Science is for all students
All students should have the opportunity to participate in science activities. This principle takes into account that all students will not achieve the standards at the same rate or level or by the same means.
2. Learning science is an active process. Active refers to hands on and "minds on activities" (NCES 1996). Should not be limited to rote memorization of content, but instead should focus on a meaningful understanding of content.
3. Students and educators need to develop "scientific literacy". "Students should develop an understanding of what science is, what science is not, what science can and cannot do, and how science contributes to culture." (National Science Education Standards, 1996)
4. Improving science education is part of systemic education reform.

Instructional Strategies for Teaching Science

When providing science instruction, educators must be willing to utilize a variety of teaching and learning strategies to accommodate the many differences found within their classroom. The following strategies not only are endorsed by the National Council of Science Educators but also support the principles of Universal

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Promoting Scientific Thinking in Young Children

by Selina Flores and Gillian Rai

Adapted with permission from Pam Hurley and Tara Cherry, *Developing Science Understanding in Young Children with Special Needs*, T/TAC Network News, April/May/June 2004.

The natural curiosity and wonder of young children is truly amazing. Children are forever mesmerized and intrigued by the everyday events of the world and they often ask that popular question "why". Many of the questions revolve around daily events, natural objects, phenomena and other science topics,

Scientists of all ages observe their surroundings, ask questions, explore their environment, conduct investigations and reach solutions/conclusions. All of these processes are vital components of the scientific process skills that allow students to develop problem solving skills and answer questions that they may have. As young children experiment with block towers, art materials, playground equipment, and manipulatives, they develop scientific process skills and learn many scientific concepts. Through their natural desire to play, they are observing, predicting, experimenting, and analyzing. In other words, they are putting the scientific method into action! Everything we know about the world comes through the skill of observation. Observations are based on the physical properties of the object in question such as color, size, height, temperature, and number. Young children can practice making observations about anything they find outdoors.

A Snapshot of the Virginia Standards of Learning: Focus on Science

The Standards of Learning provide teachers and paraprofessionals with a road map to the type of material that should be taught to all students in Virginia's public schools. The standards are not intended to encompass the entire curriculum for a given grade level or to prescribe how the content should be taught. Teachers are encouraged to be creative in their effort to provide programs that address the standards; teachers are expected to utilize strategies and resources to meet the needs of their students. The following is a snapshot of the Virginia Standards of Learning in Science.

Kindergarten

Scientific Investigation & Reasoning

• Conduct simple investigations

Everything we know about the world comes through the skill of observation.

• Investigate the five senses

Force, Motion, & Energy

• Investigate effects of magnets on materials

Matter

• Physical properties
• Water and its properties

Life Processes

• Living things change
• Plants & animals life cycle

Earth/Space Systems

• Investigate weather
• Cycles in plant & animal growth
• Home and school routines

Resources

• Explain reuse, recycle
• Water & energy conservation

First Grade

Scientific Investigation & Reasoning

• Conduct investigations
• Note physical properties using senses

Force, Motion, & Energy

• Objects exhibit different kinds of motion

Matter

• Investigate how materials interact with water

Life Processes

• Identify the needs of plants
• Plants (parts, needs, characteristics)
• Animals (needs & physical characteristics)

Earth/Space Systems

• Basic relationship between the sun & Earth
• Seasonal changes and their impact on life

Resources

• Understand that natural resources are limited
• Explain recycling & reducing consumption

Adapted from: Sprung, B. (2001). *Science Development and Young Children. Scholastic Early Childhood Today*.12(8), 48.

Connecting to Daily Life

The naturally occurring events and activities found in the daily routine of young children's lives is the root of that popular question "why". Young children have the desire and motivation to explore and understand their surroundings. Assistive technology can help all children actively explore their surroundings, process the information, and understand their world while at the same time pose new questions.

The following table illustrates ways educators can faciliate the development of scientific thinking in young children while taking into account the VA SOLs and the curriculum.

Age	2-3 Year Olds	3-4 Year Olds	4-5 Year Olds	5-6 Year Olds
Activity	•"Tell me, what do you see?" Critters to see and touch (ladybugs, caterpillars, earthworms, rolypolies, grasshoppers, etc.)	•Plant garden from seed. •Germinate a lima bean.	•Create a "plumbing maze" at the water table. •Create tie-dyed T-shirts.	•Discovering with magnets. •Re-inventions using small (broken) appliances. •Pulleys & Buckets = more than lifting and moving.
SOL	•Laying the foundation for future SOL learning & comprehension i.e., investigating & reasoning, life processes, matter, earth system.	•Laying the foundation for future SOL learning & comprehension i.e., investigating & reasoning, life processes, matter, earth system.	•Water & its properties. •Conduct simple investigations. •Investigate the five senses. •Investigate how materials interact with water. •Conservation/recycling.	•Conduct simple investigations. •Effects of magnets on materials. •Physical properties. •Observe different kinds of motion. •Recycling & conservation of resources.
Literature	•Carle, Eric. The Grouchy Ladybug. New York: Scholastic, 1997. •Arnosky, Jim. Crinkleroot's Book of Animal Tracking. New York: Simon & Schuster, 1989. Yoshi. The Butterfly Hunt. Boston: Picture Book Studio, 1993.	•Create an electronic book and document garden's progress. •Carle, Eric. (1987). The Tiny Seed. Boston: Picture Book Studio. •Root, Phyllis. (1986). Soup For Supper. New York: Harper & Row. •Bourgeois, Paulette. (1998). The Amazing Dirt Book. Addison-Wesley.	•Ashbrook, Peggy. (2003). Science is Simple, Beltsville, MD: Gryphon House. •Hauser, Jill & Kline, Michael. (1996). Science Play!: Beginning Discoveries for 2-To 6-Year-Olds (Williamson Little Hands Series), Williamson Publishing.	•Sherwood, Elizabeth; Williams, Robert; Rockwell, Robert. (1990). More Mudpies to Magnets: Science for Young Children, Beltsville, MD: Gryphon House. •Nankivell-Aston, Sally; Jackson, Dorothy. (2000). Science Experiments with Simple Machines, New York: Franklin Watts.
Technology	•Large screen microscope, magnifying glasses with built up handles, cups with magnifying lids to view insects and other small creatures. •Big Mack (Able Net): To recite repetitive phrase in story.	•Computer MS Word/Power point & digital camera or scanner to create electronic book, • Step-by-step (Able Net): with directions to start seedlings. •Water Pik: adapted to water seedlings, plants, or other projects needing hydration.	•Pouring/Measuring cup (Enabling Devices): child can choose which color and when to pour water down the pipes. •Cheap Talk 4: Give directions to build plumbing maze or ask questions such as "How high should it be?" "How many bottles/tubes do we have?" "Do we need more tape?" "Do you think we can try it out now?" •All-Turn-It Spinner (Able Net): To Identify colors for dye.	•Go Talk (Frederic Thomas): Survey peers asking questions like "I wonder why that happened?" and "Which objects stuck to their magnet?" or "Which items did not stick to their magnet?" •Computer and digital camera to write a book about magnets. •Computer to create artistic sculpture using parts of broken appliance or child can create from their imagination a magnificent machine.

http://www.readingrockets.org; http://www.nsta.org; http://www.cbcbooks.org

Mark your calendar!

AT and Aug Comm Making the Connections '05

Ideas in Assistive Technology and Augmentative Communication

June 23-24, 2005

Hotel Roanoke and Conference Center

Roanoke, VA

June 23

In the morning, keynote speaker Scott Marfilius will discuss technology-supported literacy instruction with emphasis on supporting students in the general curriculum. Mr. Marfilius is an Assistive Technology Instructional Consultant whose focus areas include computer access and technologies to assist individuals having cognitive and learning disabilities.

In the afternoon, participants can choose from various half-day workshops that include hands-on and make-it/take-it opportunities.

June 24

Participants will have the opportunity to attend breakout sessions which focus on assistive technology and augmentative communication topics.

Location and Accommodations - The AT and Aug Comm conference will be held at the Hotel Roanoke and Conference Center in Roanoke, VA.

A block of rooms has been reserved at special rates for this conference at the Hotel Roanoke and Conference Center. It is your responsibility to make your own lodging reservations. To make lodging reservations, contact the hotel directly by calling (540) 985-5900 or toll free (866) 594-4722. Please mention the name of this conference when making your reservations.

Who Should Attend? - General and special education teachers, service providers, administrators, parents, and para-professinals who want to learn more about using technology to support students with disabilities.

Cost and Registration - The registration fee for the conference is $65.00 and includes lunch and continuous breaks on both days in addition to conference materials.
A limited number of scholarships are available for paraprofessionals and parents. Contact Glenna Gustafson at gsgustaf@vt.edu.

Register on-line through our secure server at

https://www.conted.vt.edu/ssl/augcom

Sponsored By - VA. Department of Education's T/TAC at Virginia Tech

Bits and Bytes

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Design for Learning.

Science instruction should be inquiry-oriented. Comprehension may be enhanced with use of cooperative learning strategies, integrated curriculum units, concept maps, and classwide peer tutoring. Learn more about enhancing your science classroom:

- Just Science Now - http://www.justsciencenow.com/inquiry/index.htm
- Learning Science Through Inquiry - http://www.learner.org/resources/series129.html
- Strategies for Helping Students Work in Groups - http://www.ncrel.org/sdrs/areas/issues/content/cntareas/science/eric/eric-7.htm
- The Jigsaw Classroom - http://www.jigsaw.org/links.htm
- Using Cooperative Learning in Science Education - http://www.stemworks.org/Bulletins/SEB92-1.html
- Integrated Science Units – http://intgrunits.olivet.edu/internal/
- In 2 Edu - http://www.in2edu.com/edulinks/themes_integrated%20units.htm
- Concept Maps - http://www.fed.cuhk.edu.hk/~johnson/misconceptions/concept_map/concept_maps.html
- Graphic Organizers for Science - http://www.enc.org/features/focus/archive/graphic/
- Classwide Peer Tutoring (CWPT) - http://www.cast.org/ncac/index.cfm?i=2953
- Special Connections - http://www.specialconnections.ku.edu/cgi-bin/cgiwrap/specconn/main.php?cat=instruction&section=main&subsection=cwpt/main

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National Research Council. (1996). National Science Education Standards, Washington, DC: National Academy Press.

Announcing the Second Great Virginia Teach-in March 5, 2005 Richmond Virginia

The Great Virginia Teach-In is a recruiting and information fair designed for teachers considering a career move to Virginia, students enrolled in teacher preparation programs, liberal arts students considering teaching as a career, and professionals in other fields who dream of shaping the future as a classroom teacher.

Prospective teachers can meet with representatives of Virginia school districts, teacher preparation programs, innovative career switcher programs, and others. There will be interview opportunities.

To register, visit the web page at: http://www.greatvateachin.com
Also visit:
http://www.teachvirginia.org/

T/TAC staff directory

Virginia Tech

Department of Educational Leadership and Policy Studies
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Mission

The mission of Virginia's Training and Technical Assistance Centers is to improve educational opportunities and contribute to the success of children and youth with disabilities (birth–22 years). The Centers provide quality training and technical assistance in response to local, regional, and state needs. T/TAC services increase the capacity of schools, school personnel, service providers, and families to meet the needs of children and youth.

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