

# The Link

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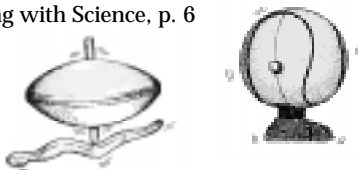
*Linking the knowledge from research  
with the wisdom from practice  
to improve teaching and learning*

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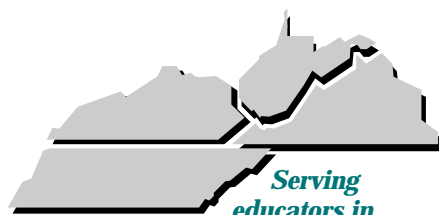
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*Serving  
educators in  
Kentucky, Tennessee, Virginia,  
and West Virginia since 1966*

# Why Bring the Internet into the Classroom?

By Nancy Balow, AEL Staff Writer

That's the question on the lips of many teachers, parents, and administrators these days. According to a recent AEL study, classroom use of the Internet isn't just a glitzy, expensive way to access information or to "put some gee-whiz" into teaching; it has a place in meaningful instruction.

Researchers Patricia Kusimo, Carolyn Carter, and Marian Keyes looked at technology in Tennessee schools during the 1996-97 school year. They selected eight teachers in schools around the state and spent 11 months analyzing field research data. Each teacher was interviewed and his or her classroom observed six to eight times between August 1996 and June 1997. Some students in each class were interviewed as well.

## TECHNOLOGY IN THE CLASSROOM

### The Internet and Resource Acquisition

Participating teachers commonly used the Internet as a resource provider. In several cases, students were assigned projects for which they were required to search for information on the Internet. Teachers themselves used the Internet to locate teaching materials and strategies.

In one class, the media specialist trained students in research strategies using all available sources—encyclopedias and other reference books, the Internet and World Wide Web, and other electronic sources. The students collected information and recorded their findings.

While this suggests that the Internet merely functions like a book, student and teacher accounts argue that the Internet provides more timely information and allows for more authentic learning tasks than do texts.

A specific example comes from a project on the 1996 election. To give students background information on President Clinton's campaign, the teacher took them to the White House via the Internet. She also found a CBS News site designed to introduce children to the political process, on which students could make suggestions for speeches and provide opinions of the candidates and events on the campaign trail. As the teacher said, "They are bringing in lots of different things and issues, and the kids can get into that process. That is a major advantage because it gives something fresher than we could come up with."

### The Internet and Social Interaction

A group of special education students exchanged information with students in Hawaii, a process they found intriguing because of differences in climate, language, and culture. As they shared information about their interests and classroom projects, they discovered that they needed to learn more about their own community to tell others about it.

Simply using the Internet to talk to pen pals fostered a positive attitude toward learning. It helped students make connections with the world, learn through extended information networks, and interact with other communities.

(continued on page 2)

## The Internet and Intellectual Inquiry

Information in textbooks is perforce limited to and directed toward specific curriculum objectives that often encourage memorization and recitation over reflection and analysis. Information available on the Internet can be richer and more eclectic, inviting students to relate it to their own lives, stimulating questions outside the textbook, and providing answers to questions unanticipated and unresearched by the teacher or textbook author.

While the Internet can create more “teachable moments,” it also calls for different instructional strategies, greater flexibility, and more willingness to follow student interest and facilitate student exploration. The following example illustrates such teaching.

A sixth-grade teacher uses the Internet to teach students—including special needs students—to write and appreciate poems. Via e-mail she established relationships with four poets: one in Arizona, one in Virginia, the curator of “The Poetry Garden” WWW site, and a retired teacher and former vice president of Houghton Mifflin Publishing Company. In this class, students write poetry that is read and critiqued by professional poets. And the poets, in turn, ask the students to critique their work.

The extended learning environment provided by the In-

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### Student and teacher accounts argue that the Internet provides more timely information and allows for more authentic learning tasks than do texts.

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ternet allows for collaborations such as this, which provide meaning to student work. Because their work reaches a real audience, students are motivated to treat their own and one another’s work with respect. The teacher’s description of student responses to a poem written by one of the professional poets follows.

They fell on it like candy. As I asked each child to read a verse, there was rapt attention, and the readers were decoding. In the sixth grade, decoding usually means structural analysis, diacritical markings, and things which aren’t meaningful to students. If they have reading problems and experience a lot of failure in the lower grades [then] they don’t want to do any sort of direct skill practice. In reading the poetry written by their adult friends and their classmates, they work on comprehension and decoding because they want to understand what they’re reading. Also, vocabulary development is rapid as they write their own poems and as they read each other’s poems.

As students use the Internet for intellectual inquiry,

## Uses of the Internet in the Classroom

- accessing timely information
- providing authentic learning tasks
- making connections with the material and social worlds
- learning through extended information networks
- interacting with local communities
- improving students’ language and writing skills
- energizing students’ learning
- encouraging exploration
- stimulating inquiry

teachers find their roles changing. One teacher commented that once students were allowed to explore on their own, they tended to interact with each other more, and they helped each other solve problems. Furthermore, she noted “very few behavior problems. They were all involved.”

## Barriers to Using the Internet

Although teachers had expected to have adequate Internet access during the study, in practice, access varied among the schools according to the number of Internet accounts per classroom, the Internet provider, available search engines, and other factors. Long lag times, shut-downs, or freeze-ups of systems sometimes disrupted lesson plans.

One administrator said Internet use was just a curiosity for many teachers in his school “because they do not have personal access, nor training, nor involvement with the Internet.” A teacher in the school saw it differently:

In some ways we get a lot of support and in others we don’t because so few of the administrators know how to use computers. They don’t see what you can do with the kids. They just don’t budget for that. Right now they think that if you send somebody to a conference to learn Windows 95 and spend \$300 on it, that’s a great thing, when most of the stuff you can pick up in a \$15 book. They will throw money on certain things and other things they won’t.

Because use of the Internet as an instructional tool seems to be changing the dynamics of the classroom, teachers will need to explore new instructional models and learn to add the roles of facilitator and coach to their repertoire to assist students in active learning. Specific areas of training relating to the Internet will need to include classroom management, grouping of students, community involvement, development of authentic tasks, and assessment of learning.

Clearly, using the Internet in the classroom does not guarantee good curriculum or teaching practices. Our study does suggest that teachers on the forefront of Internet-

(continued on page 3)

based instruction provide their students with learning experiences that do not happen (at least in the same way and to the same extent) when the Internet is not used. With skillful use, the Internet can become a valuable tool to facilitate meaningful instruction.

—From the AERA paper titled *Internet: Act 1—Scenes from Tennessee Classrooms*.

## TECHNOLOGY IN THE CLASSROOM

### A Print Guide to the Web

If you want a step-by-step print guide to using the Internet, you might appreciate this book from award-winning Canadian teacher Marjan Glavac. *The Busy Educator's Guide to the World Wide Web* provides ideas, tips, and sites to help you get on-line. It also includes listings of on-line resources.

Glavac recommends two "must-see" sites for every teacher and parent. Global SchoolNet Foundation at <http://www.gsn.org> offers classroom projects, supporting lesson

### More from Tennessee Classrooms

In a related project, AEL researchers located Internet sites with lesson plans relevant to the Tennessee curriculum frameworks and assembled them on Web pages with links keyed to the frameworks. Pilot tests during spring 1998 resulted in a collection of Web sites with lesson plans addressing the Tennessee standards in language arts, mathematics, health, and science. Go to <http://www.ael.org/rel/state/tn/index.htm>.

plans, and a moderator, as well as mailing lists, archives, and contests to motivate both students and teachers.

Digital Education Network at <http://www.actden.com> delivers reading, writing, and math lessons for grades 7-12; shows students and teachers how to create digital art; presents an introduction to using the Internet; and more.

The 179-page book, published by NIMA Systems, costs \$14.95 and can be ordered by phone at 519-473-5567, fax 519-471-0318, or on the Web at <http://www.glavac.com> or <http://www.amazon.com>.

## DOING IT WELL

### The Blue Ribbon Award Schools

In 1982 the U.S. Department of Education began the Elementary and Secondary School Recognition Program to identify and bring attention to schools with innovative programs that produce successful results. Each Blue Ribbon School receives a presidential citation and a Flag of Excellence signifying its exemplary status.

Winning schools have demonstrated the professionalism of their teachers, commitment to their students, and a strong record of progress. They serve as model programs for other schools.

AEL recognizes the Blue Ribbon Schools in our Region on our Web site, and we help them create Web pages if they don't already have them.

Meet our newest Blue Ribbon Schools at <http://www.ael.org/rel/schlserv/ribbon>.

### The National Awards Program for Model Professional Development

Because research shows that professional development plays an essential role in successful education reform, the U.S. Department of Education now recognizes schools and districts that provide high-quality training to their educators. AEL and the nation's other regional educational laboratories work with department staff to review applications, make site visits, and select award winners.

If your school has committed to a professional development program that meets the principles listed below, you may apply for the 1998 awards. Get application information from Jane Hange here at AEL ([hangej@ael.org](mailto:hangej@ael.org)) or go to the education department Web site at <http://www.ed.gov/inits/teachers/teach.html>.

#### High-Quality Professional Development

- focuses on teachers as central to student learning, yet includes all other members of the school community;
- focuses on individual, collegial, and organizational improvement;
- respects and nurtures the intellectual and leadership capacity of teachers, principals, and others in the school community;
- reflects best available research and practice in teaching, learning, and leadership;
- enables teachers to develop further expertise in subject content, teaching strategies, uses of technologies, and other essential elements in teaching to high standards;
- promotes continuous inquiry and improvement embedded in the daily life of schools;
- is planned collaboratively by those who will participate in and facilitate that development;
- requires substantial time and other resources;
- is driven by a coherent long-term plan;
- is evaluated ultimately on the basis of its impact on teacher effectiveness and student learning; and this assessment guides subsequent professional development efforts. (U.S. Department of Education, 1996)

# Where on the Web?

You've heard that the Internet, especially the World Wide Web, is the place to go for information. Problem is, you also get information overload. If you're ready to yell for help, we can tell you there is some available—on the Internet, of course!

Don't quite feel comfortable with your surfing skills? Several on-line sites offer courses in using the Internet. Searching the Net may seem difficult to the novice, but just a few basics will help you sort search engines from directories and hone your search techniques to librarian level. (See box on page 5.)

How about lesson plans? And sites that will really motivate students? No problem, you can pick and choose from many good ones in nearly every content area imaginable.

No lifetime is long enough for any one person to screen every site on the Web, so be grateful for the folks, both paid and unpaid, who have compiled directories and listings of sites by topics. In the interest of more learning and more fun in every classroom, we offer a few picks of our own, and some ideas on where to get more.

## How to Use the Internet

Come to AEL's Web site for our **Internet Primer** at <http://www.ael.org/rtec>.

**National Semiconductor's Global Connections Online** site offers a free course and certificate (you can earn the rank of "Internet Guru") at <http://www.nsglobalonline.com>.

To learn about the Internet and many software packages and programming techniques, enroll in **ZD University**. ZDU offers CEUs, and "tuition" is just \$4.95 per month for as many classes as you wish to take at <http://www.zdu.com>.

## Resource Listings

The U.S. Department of Education, in collaboration with many other federal agencies, has a new site called **FREE (Federal Resources for Educational Excellence)**. It offers "kid pages" from each participating agency, covering such topics as aeronautics, financial aid, recycling, energy, and the CIA. <http://www.ed.gov/free>

The **American Library Association** has compiled a listing of recommended sites for kids. Selected by nine of the nation's top librarians, the listing contains over 700 sites organized by

interest area. <http://www.ala.org/parentspage/greatsites>

Education-related sites:

- **PBS LiteracyLink**, peer-reviewed instructional sites <http://www.pbs.org/literacy>
- **Schrock's Guide** <http://www.capecod.net/schrockguide>
- **Connections+** <http://www.mcrel.org/connect/plus>
- **LD Online** has info about learning disabilities [www.ldonline.org](http://www.ldonline.org)
- **"eSchoolNews"** [www.eschoolnews.com](http://www.eschoolnews.com)
- **WebTeacher** <http://www.webteacher.org>
- **Classroom Connect** <http://www.classroom.net>

The **Web Magazine** offers many good links in its Site Review section. Current listings and archives available, with search feature. The Science button connects to some interesting sites, but be sure to preview sites under other buttons, such as Weird. <http://www.webmagazine.com>

The **Amazing Picture Machine**: This index to graphical resources helps students and teachers find pictures and maps from around the world. Also includes lesson ideas. <http://www.ncrtec.org/picture.htm>

## TECHNOLOGY IN THE CLASSROOM

### Individual Sites (in alphabetical order)

**The Albatross Project**: An up-close look at albatrosses and a chance to participate in a scientific study. <http://www.wfu.edu/albatross>

**Amazon Adventure**: See the river and rainforest, take virtual tours—including one along the treetop walkway built by the Amazon Center of Environmental Education and Research Foundation. <http://168.216.238.53/amazon/index.htm>

**Bioluminescent Bay**: This bay off the coast of Puerto Rico has a very special glow. <http://www.biobay.com>

**The Cyberspace Museum of Natural History and Exploration Technology**: Hear how a Parasaurololphus (a kind of dinosaur) might have sounded. <http://www.cyberspacemuseum.com>

**Eisenhower National Clearinghouse** sites offer math and science information of many kinds. To focus on the results of the Third International Mathematics and Science Study, go to <http://timss.enc.org>.

**The Invention Dimension**: The name says it—lots of inventions, new and old. [http://web.mit.edu/invent/www/invention\\_dimension.html](http://web.mit.edu/invent/www/invention_dimension.html)

**Star Date**: Backyard stargazing tips, a sky almanac, a magazine, and teacher guides. <http://stardate.utexas.edu>

**The Why Files**: Created by the National Institute for Science Education, this magazine focuses on science, math, engineering, and technology. <http://whyfiles.news.wisc.edu>

## Talk to Us

*The Link* now has its own e-mail address. Tell us what you like and what you'd like to read. Send comments and/or ideas to [link@ael.org](mailto:link@ael.org).

# Internet Searching

By Fernando Ibanez, AEL Technology Specialist

What's wrong with this statement? *Yahoo! is the most popular search engine on the World Wide Web.*

What's wrong is that Yahoo! is not a *search engine*—it's a *directory*. There's a difference. If you have ever felt frustrated when searching for information on the Web, read on to learn how knowing the difference can make both tools work for you.

A directory is a categorized collection of links to Web pages. A Web page is included in a particular category because someone has looked at it and decided that it belongs there. For example, AEL's Web page could be listed in three categories: Education, Businesses-Nonprofit, and State-WV-Charleston-Business. Computers are not smart enough to figure this out, so directories rely on webmasters, users, and other people to let them know how a page should be categorized.

Search engines, on the other hand, use computers to do the work. A search engine program—called a robot or a spider—goes from Web page to Web page, cataloging each word from each page into its database. If the robot finds links to other pages, it follows those links and continues to catalog each word, each page, in a very computeresque way.

When you ask a search engine to search for a word or string of words, it compares what you've typed to its own database. Then it produces a list of Web pages that contain your word(s). If you try the same search in a different search engine, you're likely to get different results because each search engine searches its own database—not the entire Web. Only the pages that its own robot or spider found are in its database. Using two or three search engines increases your chances of finding the information you seek.

Directories yield less specific results than search engines because they catalog Web pages according to topic instead of indexing each individual word within each Web page. They respond to your query by giving you a list of predetermined categories. If you already know what you're looking for, a directory is not the tool for the job. Directories are better at letting you know "what is out there" related to a given topic. To find specifics, you'll want to use a search engine.

To get information on a broad topic (the Wild West, for instance), start with a directory. If you want additional information on a more narrow subtopic (Billy the Kid), use a search engine. There you'll get a list of pages that have in their text the words *Billy*, *the*, and/or *Kid*. If

no pages contain those words, the search engine will tell you so—clearly, precisely, and pointedly.

There are some tricks you should know. Let's say I am looking for facts about red pythons. I type *red pythons* in the search engine's "search box"—and get 500,000 hits! Why so many? Because the search engine is giving me pages that contain the words *red* and *python*, but not necessarily within the same phrase. *Red* could be at the top and *python* at the bottom of a 50-page document, but since they are both on the same page, the search engine "thinks" it has a hit. The search engine also lists pages that contain only the word *red* or only the word *python*. These are lower on the list, but they are still there. To initiate a new, more narrow search, I can put a plus sign in front of each word, like this: *+red +python*. This forces the search engine to give me only pages that have the words *red* and *python*. The "hit list" is down to 22,000. I'm still getting a lot of pages that have the words in different places, so I change my search to "*red python*". Enclosing the words in quote marks forces the search engine to give me only pages that contain the words *red python*—together, and in order. The search results drop down to 11 hits, a more manageable number.

The plus sign and the quote marks are the most common devices you can use to narrow your searches. You can also use the minus sign, which forces the search engine to ignore pages that contain the word following the sign. When I was looking for facts about red pythons, I noticed a lot of Monty Python pages in my search results. I could have typed *+red +python -monty* to force the search engine not to return pages that have the word *monty* in them.

The last thing to remember is that each search engine and directory works a bit differently from the others. After you figure out which ones you like, read their help sections for additional tips on conducting searches.

Try these popular search tools:

## Directories

Yahoo!: <http://www.yahoo.com>

Magellan: <http://www.mckinley.com>

Infomine Scholarly Information: <http://lib-www.ucr.edu/>

## Search Engines

HotBot: <http://www.hotbot.com>

Altavista: <http://www.altavista.digital.com>

Lycos: <http://www.lycos.com>

# FOCUS ON INSTRUCTION

## Toying with Science

### Enriching the physics curriculum

By Donna A. Conner, Roanoke County Schools Resource Teacher



Cameron McLaughlin finds the nails balancing act fascinating

I got the idea for this course about 15 years ago at a summer meeting of the American Association of Physics Teachers. I attended a session presented by James Watson, physics and astronomy professor at Ball State University, and Nancy Watson, a middle school science

teacher at Ball State's Burris Laboratory School. Jim and Nancy showed how to use simple, inexpensive toys to present physics concepts and how to record and analyze laboratory data.

I consider the Watsons to be pioneers of today's use of everyday objects to teach real-world concepts in an exciting and relevant manner. They still offer their summer program, which teachers from all over the country attend.

When I returned from that session, I arranged to offer my own summer enrichment course for middle school gifted students in Roanoke County Schools. Participation in the program is voluntary; the students pay tuition and there are no formal evaluations in the form of grades. Despite competition from sports camps, family vacations, and other recreational activities, The Physics of Toys has

Featuring articles about teachers in the four AEL states—this issue, Virginia

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**Combining scientific investigation with children's natural tendency to play is a powerful instructional strategy.**

Sue Bostic, Elementary Gifted Resource Teacher, Roanoke County

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been a popular course. One student became so involved that he registered and paid to attend a second time. He explained that he "never knew that learning science could be so much fun!"

Here's part of the course description:

You will explore the scientific concepts that are used in various toys. Several areas of physics will be included—mechanics, optics, sound, center of gravity, and energy.

You will learn science by "playing" (scientists call it "experimenting"). As you play, you will develop your skills of observation and deduction and will discover the correlation between the workings of the toys and the principles that apply to everyday life.

Once you understand the basic physics, you will use the toys to gather data in an experimental setting. With this data, you will confirm the laws of physics through graphical analysis and other computerized techniques.

You may keep your toys to do further experimentation, and you may bring in your own toys for comparisons and exploration of other physics concepts.

Families are invited to attend a Physics of Toys show on the last day of class. Students will demonstrate and explain what they learned about one specific topic/toy.

Topics and activities vary slightly from year to year, depending on the availability of a specific toy or the discovery of a new toy. With the exception of special, one-of-a-kind demonstration toys, the toys we use in the class are given to the students to keep. We also make some toys out of paper, straws, and other simple materials.

I wanted to expand my program into the regular classroom, so last year I submitted grant requests for \$500 to the Virginia Association of Science Teachers (VAST) and for \$400 to the American Association of Physics Teachers (AAPT) to create the Toy Box. This project will provide Roanoke County physical science teachers from five schools with the training and materials to play with physics in their classrooms. A team of three physical science teachers and I will provide in-service training and assistance.

Each school will enhance its curriculum by providing motivating challenges through hands-on science experiences and the use of technology—computer spreadsheet programs to analyze and graph the data taken with the toys.

A Toy Box includes demonstration toys, a classroom set of toys for experiments, and a series of differentiated physical science lesson plans (demonstrations, experiments, reference list of AV materials available) correlated to the Roanoke County science curriculum and the Virginia Standards of Learning for science and technology.

## I liked balancing 12 nails on the head of one nail.

Lindsey Wray, Student

I will visit each school to help implement and evaluate the class by observing as students do the experiments and analyze their data. Students and teachers will also evaluate the units and make suggestions for future modifications.

In some units (motion/energy), students will use a computer spreadsheet program such as Number Cruncher, ClarisWorks, or Vernier's Graphical Analysis, thus expanding their knowledge of technology. The students will enter data and set up formulas in a spreadsheet or database, then analyze the data and create graphs or charts to represent it. Conclusions will be made concerning the data in terms of the students' hypotheses.

We expect the students to not only enjoy studying these physical concepts using toys, but to enhance their technological literacy. More important, we hope to keep middle school students interested in science. Many bright students who have special talents in science are turned off at an early age by traditional, non-challenging instruction. We can turn on students when we use The Physics of Toys and other innovative approaches to teaching.

## These young people become intellectual scientific consumers and teachers for parents, siblings, and others.

Garland Life, Senior Director of Instruction for Roanoke County Schools

To learn more about toying with science, call Donna Conner at 540-562-3732 or e-mail dconner@rcs.k12.va.us

## Some concepts and the toys to demonstrate them

**Waves:** straws (taped together to make a wave machine), slinkies

**Sound:** straws, bendable snake flute (corrugated plastic tube with a mouthpiece), twirl-a-tune tubes, strings, and talking strips (thin plastic strips with grooves on one side)

**Optics:** kaleidoscopes (homemade, marble), prisms, mirrors (plane and curved), zoetrope (handmade moving picture machine that demonstrates stroboscopic motion)

**Motion (Straight Line):** pull-back cars, walkers (wind-up figures), homemade balloon-powered car

**Motion (Curved):** hot wheels cars with track, tops (regular, tippey, diffraction grating, magnetic snake—top with a magnet on its end)

**Energy:** pull-back cars, walkers, poppers (1/3 of a small hollow ball that bounces), super balls

**Center of Gravity:** many homemade examples, belt hooks, clothes pins, balancing birds or balancing clowns



### ENERGY TRANSFER: BOUNCING SUPER BALLS

**Objective:** To study energy transformation and loss by dropping super balls and recording bounce heights.

**Materials:** super balls, meter stick, tape

**Procedure:**

1. Tape a meter stick vertically to the side of your lab table, with the zero end on the floor.
2. Drop a super ball from the top of the meter stick (1 m).
3. Measure the height (h) of the first bounce.
4. Repeat steps 1 & 2 three (3) times and calculate an average bounce height (B) for drop height (D) or 100 cm. Record the information in the Data Table #1 below.
5. Next let the super ball continue to bounce and measure each successive return bounce. Do this three (3) times and find an average bounce height (B) for each drop height (D)--the previous bounce height
6. Calculate the average bounce height for five bounces.

**Data Table #1:** Surface \_\_\_\_\_

Bounce	1st try	2nd try	3rd try	Av. Bounce Height (B)	$h_B/h_D$
First					1st/100=
Second					2nd/1st=
Third					3rd/2nd=
Fourth					4th/3rd=
Fifth					5th/4th=

**Results:**

1. At the top of the rebound, the super ball's energy is PE and should be the same as when it was dropped.
2. What fraction of its initial energy did it lose?

$$\frac{\text{PE after bounce}}{\text{PE before bounce}} = \frac{mgh_B}{mgh_D} = \frac{h_B}{h_D}$$

m=mass  
g=9.8 m/s<sup>2</sup>  
acceleration due to gravity

**Data Table #2:** Surface \_\_\_\_\_

Bounce	1st try	2nd try	3rd try	Average	$h_B/h_D$
First					1st/100=
Second					2nd/1st=
Third					3rd/2nd=
Fourth					4th/3rd=
Fifth					5th/4th=

**Conclusion:**

1. Why does the ball not return to its dropped height?
2. Does the surface make a difference? How?
3. What does  $h_B/h_D$  represent?

# OFF TO A GOOD START

## The Big “R” — Reading

Reading lays the foundation for all other learning. Too many of our children struggle through school because they have not mastered basic reading skills. Research shows that if students cannot read well by the end of third grade, their chances for success become significantly lower. In 1994, 40% of America’s fourth graders failed to attain the basic level of reading and 70% of children fell below the proficient level on the National Assessment of Educational Progress.

Fortunately, we can address this problem, and President Clinton’s America Reads Challenge has developed several strategies that should make a difference. AEL and the nation’s other regional educational labs are working

with the U.S. Department of Education to supplement classroom reading instruction, strengthen parent involvement and help children become ready to learn when they enter school, bring best practices into classrooms, and support research and evaluation.

In the coming year, you’ll hear a lot about the first of these initiatives as tutors across the country are trained to provide high-quality help to young readers. Study after study finds that sustained individualized attention and tutoring after school and over the summer can help to raise reading levels. Volunteers, many of them college students, will add tutoring to their busy schedules in the coming semesters. (See order form/insert for information on AEL training materials available to your organization.)

## Tips for Tutors

*Adapted from a presentation by AEL’s Soleil Gregg at the July 31-August 1 America Reads Conference in Nashville.*

### Why good reading instruction is important:

- Up to 15% of children with reading problems drop out of school; only 2% finish college.
- Approximately 50% of teens and young adults with criminal records do not read well.
- About 50% of young people with substance abuse problems do not read well.
- About 90% to 95% of reading problems can be corrected with early intervention and appropriate instruction.

### General advice for reading tutors:

- When it comes to reading, [directed] practice makes perfect.
- Never force a child to read orally in front of peers.
- Choose reading material on subjects of interest to the child.
- Speak distinctly and expressively when reading, clearly enunciating words and sounds. Inflect your voice in accordance with punctuation.



- Help make reading enjoyable. Children with reading difficulties usually do not like to read and do not get sufficient practice to become fluent.

### Strategies for Tutoring Students with Disabilities

#### A cautionary note:

- Disabilities should be diagnosed and treated by professionals.
- Discuss any questions and concerns about tutoring a child with disabilities with a teacher or program coordinator.
- Strategies presented here are meant to enhance the tutoring process, not to replace or substitute for a teacher’s specific recommendations.

#### Most common disabilities that affect learning to read:

**Dyslexia.** Dyslexia affects approximately 20% of school children. To read, children must translate letters on a page into the sounds of words (i.e., develop phonological awareness). In

dyslexics an inefficient module in the brain is believed to interfere with letter-sound processing, so students exhibit difficulty decoding words. Research points to additional deficits in processing visual motion and rapid changes in sound. Children with dyslexia need direct instruction in letter-sound relationships using a curriculum that employs multisensory techniques.

#### Speech and Language Disorders.

This general term refers to problems with communication, including reception (understanding), expression (speaking), and articulation (forming sounds) disorders. These disorders affect approximately 10% of the school population and account for 25% of children in special education. A child with a speech or language disorder may use baby talk past an appropriate age, may stutter, or may have trouble using or understanding words in the context of a conversation or assignment. Speech and language disorders often accompany learning disabilities such as dyslexia.

**Processing Deficits.** Processing disorders interfere with information taken in through the senses. The most common types affecting school tasks are visual, auditory, and motor defi-

cits. Though considered learning disabilities, these deficits overlap with speech and language disorders and specific learning disabilities like dyslexia. Students with processing deficits may experience problems with auditory or visual sequencing and memory (e.g., reversing letters, losing the place while reading, and forgetting instructions).

**ADHD.** Attention Deficit/Hyperactivity Disorder (ADHD) is characterized by age-inappropriate levels of hyperactivity, inattention, and impulsivity. It affects 3% to 5% of the population and often occurs with other conditions. Researchers believe that symptoms result from underlying impairment in systems used to regulate and control behavior. Children with ADHD may pay attention to the novel and stimulating but have trouble staying seated or keeping focused. Attention problems may not be apparent in one-on-one sessions; however, for more severe cases, a simple reward for appropriate behavior at the end of each session can help.

**Developmental Disabilities (Mental Retardation).** Mental retardation is diagnosed by an IQ below 70-75 and limitations in daily living. It has a variety of causes, including genetics, prenatal problems, low birth weight and premature birth, disease, and poverty or cultural deprivation. It affects approximately 3% of the population; of this group, 87% are mildly affected. Children with mild mental retardation may just seem a little slower than others in learning new information and skills.

#### **Tutoring emergent and beginning readers with disabilities:**

- Most young children experiencing reading difficulty need to be directly taught letter-sound relationships (i.e., how the 26 letters of the alphabet represent the 44 sounds or phonemes that make up English words). When introducing new words or sounding out words in text, high-

light each letter of the word as it is sounded or cover surrounding letters to focus on the one being sounded.

- Choose books with rhyme, repetition, and a controlled vocabulary (a limited but expanding repertoire of phonetically based words (e.g., cat, sit, hot) and critical sight words (e.g., here, there, of, to).
- For emergent readers, read and teach rhyming songs and poems (e.g., Mother Goose nursery rhymes such as “Mary Had a Little Lamb”). Teach the child to clap while singing or saying the syllables of the rhyme. If he or she does not already know the alphabet song, teach the child to sing it while pointing to the letters.
- Reinforce knowledge of letter shapes by having the child write them, trace them, or place magnetic letters in order while saying the alphabet. Help the child to see the difference between similar letters such as “b” and “d” or “p” and “g.”
- Write each letter of a word on a separate card. Have the child place the cards in order as the word is sounded out. Show how to make new words (e.g., the letters p – a – t can be rearranged to make the word “tap” or the letter “p” can be removed to make the word “at”).
- Think multisensorily. Children with some disabilities may need to experience letters with the senses: auditory, kinesthetic/tactile, and visual. For example, in addition to looking at and saying the letter “A,” the child can draw the letter in a pie pan full of sand, flour, or salt. The child can then “erase” the letter by gently shaking the pan or wiping with a hand, so it’s ready for more writing.
- As you read to a child, track syllables and words with a pointer finger. Teach the child to track words while reading alone.

- Listening to books on tape while following along in text helps promote reading enjoyment and skill. Students of all ability levels can benefit from following along in their books (while using a pointer finger to track words) while the tutor reads aloud.

#### **Conducting a lesson with a child experiencing reading difficulties:**

- Before reading, connect the subject of the story to a child’s prior knowledge or experience (e.g., before reading *The Little Engine That Could*, ask if the child has ever seen or ridden a train). Let the child talk about the experience, then state that the story you’re going to read is about a train that delivers toys to children. Building new information onto previously learned concepts increases interest, comprehension, and retention.
- Stop at key points in the story to ask what the student thinks will happen next. Stop later to confirm predictions. Discuss why events did or did not turn out as predicted.
- When a student stumbles on a word, help him sound it out by breaking it into individual letter sounds (e.g., kuh – ah – tuh for cat). Highlight the letters as they are sounded to help build letter-sound awareness. Have the child reread the sentence to focus on its meaning rather than on individual words.
- Provide immediate corrective feedback if a child mispronounces or misstates a word.
- After reading a story, have the child explain it in his own words.
- Prepare packets containing a copy of the book, an audiotape of a word-for-word reading of the book, and a tape player for the child to use at home to practice reading skills. Parents or grandparents can be instructed in how to use the book and tape.

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# Are They Ready?

## An Informal Assessment of Progress

In the past 20 years, research has convincingly shown that, unless children learn some social skills by their sixth birthday, they have a high probability of being at risk throughout life. The risks are many: poor mental health, dropping out of school, low achievement and other school difficulties, and poor employment history. According to researchers Dianne McClellan and Lilian G. Katz, given these lifelong consequences, relationships should be counted as the first of the four Rs of education.

Social development begins in a child's early years. All early childhood programs should, therefore, include regular and frequent formal and informal assessments of a child's social progress.

The Social Attributes Checklist includes social behavior patterns and preschool experiences that teachers should examine every three or four months. When using the check-

### OFF TO A GOOD START

list, teachers should pay attention to whether the attributes are typical. Any child can have one or two bad days. If assessments are to be reasonably reliable, behavior patterns should be analyzed over a monthlong period.

The quality and not the quantity of a child's friendships is the important index to note. Some children are shyer than others, and it may not be effective to push such children into uncomfortable social relations. Unless the shyness prevents a child from enjoying social activities such as birthday parties, picnics, and family outings, it is assumed that the shyness will be spontaneously outgrown.

Social growth is considered adequate if a child regularly shows many of the listed attributes. Occasional fluctuations should not lead to over-interpretations of temporary difficulties. On the basis of frequent contact with the child, observation in a variety of situations, and information from parents and other adults, a teacher can assess each child. If a child appears to be doing well, then it is reasonable to assume that occasional social difficulties will be outgrown.

However, if a child seems to be doing poorly in many areas, adults can implement strategies that will help the child to overcome and outgrow social difficulties. This checklist is only a guide and is not intended to supply a prescription for "correct social behavior." It can help teachers observe, understand, and support children as they grow in social skillfulness and to form a basis for helping a child to establish more satisfying relations with other children.

Finally, keep in mind that children vary in social behavior for a variety of reasons. Research indicates that children have distinct personalities and temperaments from birth. In

addition, nuclear and extended family relationships obviously affect social behavior. What is appropriate or effective social behavior in one culture may be inappropriate or less effective in another. Children from diverse backgrounds may need help in bridging their differences and in finding ways to enjoy one another's company. Teachers have a responsibility to be proactive in creating an open, honest, and accepting classroom community.

## The Social Attributes Checklist

### I. Individual Attributes

1. Is *usually* in a positive mood
2. Is not *excessively* dependent on the teacher, assistant, or other adults
3. *Usually* comes to the program or setting willingly
4. *Usually* copes with rebuffs and reverses adequately
5. Shows the capacity to empathize
6. Has positive relationships with one or two peers, shows capacity to really care about them, miss them if absent, etc.
7. Displays the capacity for humor
8. Does not seem to be acutely or chronically lonely

### II. Social Skill Attributes

1. Approaches others positively
2. Expresses wishes and preferences clearly; gives reasons for actions and positions
3. Asserts own rights and needs appropriately
4. Is not easily intimidated by bullies
5. Expresses frustrations and anger effectively and without harming property or other people
6. Joins ongoing groups at play and work
7. Enters ongoing discussions and makes relevant contributions to ongoing activities
8. Takes turns fairly easily
9. Shows interest in others; exchanges information with and requests information from others appropriately
10. Negotiates and compromises with others appropriately
11. Does not draw inappropriate attention to self
12. Accepts and enjoys peers and adults of ethnic groups other than his or her own
13. Interacts nonverbally (smiles, waves, nods, etc.) with other children

### III. Peer Relationship Attributes

1. *Usually* accepted versus neglected or rejected by other children
2. *Sometimes* invited by other children to join them in play, friendship, or work

From *Young Children's Social Development: A Checklist* by Diane E. McClellan and Lillian G. Katz, 1993, ERIC Digest EDO-PS-93-6. Thanks to our sister Lab, PREL, for bringing it to our attention.

# COMPREHENSIVE SCHOOL REFORM

## Are You Ready to Transform Your School?

Exciting, frustrating, rewarding, scary. The attempt to change a school comprehensively can be all of these things. Thoughtful school leaders focus initial energy on assessing the school community's readiness and need for reform efforts. The work is too hard and the desired results difficult or impossible to achieve if there is not shared commitment and a clear understanding of the school's unique needs.

Matching a school's needs to a reform model is also important; however, the reform model is but one component of a school's reform plan. No single program can effect the kind of transformation that touches every aspect of school life, which is the aim of comprehensive reform. Making the changes that make a difference for students requires global thinking and informed planning.

### Resources from AEL

AEL is working with the state departments of education in Kentucky, Tennessee, Virginia, and West Virginia to customize its assistance to fit each state's implementation approach. AEL is also available to consult with schools interested in designing or developing comprehensive school reform programs. Schools and districts are invited to

- Request a packet of self-assessment and planning tools
- Borrow videotapes from AEL that overview several comprehensive school reform models
- Visit our Web site at <http://www.ael.org> to download a catalog of models, to link to state departments of education, and to find out who in your area is already using a model
- Call Billie Hauser at 800-624-9120, ext. 5893, to discuss how AEL can help you design or develop a comprehensive school reform program

### State Contacts

The Comprehensive School Reform Demonstration program provides \$150 million for local schools to implement comprehensive reform programs that are based on reliable research and effective practice and that include an emphasis on basic academics and parental involvement. Each state has established its own schedule for implementing this program, as well as its own competitive process.

#### Kentucky

Joseph T. Clark  
502-564-3791  
<http://www.kde.state.ky.us>  
*First-round application deadline: 3/1/99*

#### Tennessee

Barbara Adkisson  
615-532-6297  
<http://www.state.tn.us/education>  
*First-round application deadline: 9/3/98*

#### Virginia

Robert Bordeaux  
804-225-2904  
<http://www.pen.k12.va.us>  
*First-round application deadline: 10/30/98*

#### West Virginia

Suzette Cook  
304-558-7817  
e-mail: [scook@access.k12/wv.us](mailto:scook@access.k12/wv.us)  
<http://wvde.state.wv.us/>  
*First-round application deadline: 10/16/98*

## NEW PUBLICATIONS OF INTEREST

### America's Children: How are they doing?

The Federal Interagency Forum on Child and Family Statistics recently released its second annual report on the well-being of the nation's 70 million children. *America's Children: Key National Indicators of Well-Being* provides information on critical aspects of children's lives, including their health, economic security, education, behavior, and social environment.

According to the report, children, from infancy through adolescence, are off to a healthier start in many ways. Infant mortality is at an all-time historic low, and the report

also shows a dramatic decline in the number of children with high blood lead levels, which can cause IQ or behavioral problems.

While the report shows some overall positive trends in the health of young children, not all are doing equally well. Between 1995 and 1996, there has been no significant change in the number of children living in poverty. Children still represent 40% of the population in poverty and are more likely to experience housing problems and hunger, less likely to be immunized, and less likely to have a parent working full-time all year.

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On the plus side, more young children are being read to by their families, participating in early childhood education, and improving their math scores on national achievement tests. However, according to the National Center for Education Statistics, high school completion rates and reading scores are stagnant.

This report represents a significant collaborative effort among the federal agencies that report regularly on various aspects of children's lives. Free copies of the full report are available from the National Maternal and Child Health Clearinghouse <http://childstats.atgov> or call 703-356-1964.

## Books on Assessment, Evaluation, and Standards

The ERIC Clearinghouse on Assessment and Evaluation has formed a unique partnership with the Internet bookstore [amazon.com](http://amazon.com) and a growing number of book publishers. The publishers provide ERIC/AE with the latest books on assessment, evaluation, and standards. ERIC/AE reviews the books for their relevance to the target audience, clarity of expression, contribution to practice, usefulness, and accuracy. ERIC/AE then rates the books and provides links to [amazon.com](http://amazon.com), where you can order the books on-line.

Teachers, administrators, counselors, researchers, policy makers, parents, students, and the general public can browse the ERIC/AE bookstore at <http://ericae.net/bstore> and search the catalog for the latest titles on learning styles, grading students, alternative assessment, classroom testing, higher-order thinking skills, program evaluation, standards, and many related topics. In addition to the journal articles and reports ERIC/AE has always provided, commercial books are now included in the index.

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## Tips for Tutors, References and Resources

- Frost, J., & Emery, M. (1995). *Academic interventions for children with dyslexia who have phonological core deficits*. Reston, VA: ERIC Clearinghouse on Disabilities and Gifted Education.
- National Information Center for Children and Youth with Disabilities (NICHCY). (1996). *NICHCY fact sheet number 11 (FS11)*. Washington, DC: Author.
- National Institute of Child Health and Human Development (NICHD). (1998). *Why children succeed or fail at reading*. Bethesda, MD: NICHD, National Institutes of Health.
- Shaywitz, S. (1996, November). Dyslexia. *Scientific American*, pp. 98-104.
- The Arc. (1996). *Introduction to mental retardation*. Arlington, TX: Author. <http://thearc.org/faqs/mrqa.html> (1998, September 18)
- Travis, J. (1996). Visualizing vision in dyslexic brains. *Science News*, 149 (7), p. 105.



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