

Discovery Education Videos

Muchmore's Marvelous Machine: The Importance of Place Value

The Old Man of the Mountain is about to celebrate his 2,143rd birthday, and his friends divide up the chores to get his birthday party organized. Lionel has the responsibility of counting the candles but keeps losing track until Count Muchmore loans him a machine that bundles the candles into tens, hundreds, and thousands. Grades K–2.

Discovering Math: Algebra

From using expressions to represent relationships, to using variables in multiple ways, to linear equations and functions, to solving simple inequalities, this video introduces middle school students to more advanced properties of functions and algebra. Grades 6–8.

Culture and Math: The Renaissance

During the Renaissance, Europe experienced a rebirth in culture, art, mathematics, the sciences, and technology. Discover how advances in these areas have contributed to our world today. Grades 6–8, 9–12.

The Assistant Professor: What Are Variables?

Math problems are mathematical sentences for which you may or may not know all of the information. In some cases, a variable must be used to take the place of an unknown number. You solve for that variable. There are also problems with two unknowns or variables. In this case, you choose a number for one, and then solve for the other. Grades 3–5.

All Discovery Education Videos can be found at www.discoveryeducation.com

News from NASTECH

Technology Resource Solutions has a new portal to allow easy navigation between our various services: MCS, VOD, GTS, ACS, and WMS. You can find it at www.nassauboces.org/cit/it/mcs/TRS/index.htm

The **CK–12 Foundation**, www.ck12.org, has developed an online system for collaborative, custom-collated, self-publishable educational content that can be adapted for individualized needs in Flexbook, a digital-age textbook.

Key Benefits:

Access to free textbooks, high quality, customizable content; quality ensured; increased pedagogic choice; print-on-demand; collaborative learning community

Action Research in Mathematics *(continued from page 1)*

Some teachers may have used money to introduce percent (part of 100). Students who used this visual and knew that the fraction was $10/25$, could more easily convert that to $40/100$, and then to 40%. Students would see that they could multiply the numerator and denominator by 4 to get the equivalent fraction with a denominator of 100.

Action research can be used by teachers to resolve teaching challenges in their classrooms and in their schools. Teachers ask a focusing question, define terms, collect relevant data, and use an analysis process. These findings are immediately applicable to their individual situations.

Calling All Inventors!

Do your students have a great idea or invention to share? Encourage them to visit <http://inventnow.org>. In the <http://inventnow.org/showroom/>, they can try out cool inventions and meet the kids who created them. When they're ready to get started on their own inventions, they can download the Inventor's Toolkit, <http://inventnow.org/dyn/showroom/pdf/inventorstoolkit.pdf>, which is full of ways to spark creativity. Whether it's a re-invention or an idea all their own, students can show off their invention in the Inventors Gallery! But first point out that there's more to inventing than having a great idea. The United States Patent and Trademark Office www.uspto.gov/inventors/index.jsp is a great place for useful information.

InventNow has Invention Challenges so students can get their brainwaves flowing! <http://inventnow.org/challenges/>. They can choose among these Challenges: The Sketch Pad, Game Changers, Investigation Station, The Hollywood Insider, Mission Control, and Going Green.

For information on any of CIT's programs, including back issues of CIT Response, up-to-date education news, NCLB, special reports, new services and more, visit the Curriculum, Instruction and Technology Web site at:
www.nassauboces.org/cit

Non-discrimination Statement: Nassau BOCES advises students, parents, employees and the general public that it offers employment and educational opportunities without regard to sex, race, color, national origin or handicap. Information and grievance procedures are available by contacting the following officers at Human Resources at 71 Clinton Rd., P.O. Box 9195, Garden City, NY, 11530: Jeffrey Drucker, Title IX (sex discrimination) and Section 504 (handicap discrimination) Coordinator, at 516-396-2358, jdrucker@mail.nasbores.org, or Amy Levine, Title IX Coordinator, at 516-396-2340, alevine@mail.nasbores.org. A copy of programs and educational courses offered and available to residents may be obtained from our Web site www.nassauboces.org.

ER RESPONSE

January 2010

What's Inside

Spotlight: FASTMath

Tech Toys

Calling All Inventors!

**Professional
Development**

and more...

**Watch for our February
issue featuring Media
Literacy!**

n a s s a u
BOCES

**Board of Cooperative
Educational Services of
Nassau County**

Stephen B. Witt, *President*

Eric B. Schultz, *Vice President*

Susan Bergrau, *District Clerk*

Michael Weinick, *Vice District Clerk*

Deborah Coates

Ronald Ellerbe

Martin R. Kaye

Gale Ross-Srulovich

Robert "B.A." Schoen

Edward J. Zero,

Interim District Superintendent

Dr. Robert J. Hanna,

Deputy Superintendent

Lawrence R. McGoldrick,

Assistant to the

Deputy Superintendent

Joan S. Siegel,

Associate Superintendent

**Department of Curriculum,
Instruction and Technology**

Fred Podolski,

Executive Director

Dr. Valerie C. D'Aguanno,

Assistant Director

Paula Pisano, *Supervisor*

Action Research in Mathematics

by Elaine Zseller

Action research may be used to focus efforts in order to improve the quality of both instruction and student performance. Individuals or teams of educators analyze data to improve their own practice. This is referred to as collaborative inquiry.

Educators can "reflect on and assess their teaching to explore and test new ideas, methods, and materials; assess how effective the new approaches were; share feedback with fellow team members; and make decisions about which new approaches to include in the team's curriculum, instruction, and assessment plans."¹

Some educators are perplexed by the low success rate for problem 28 from the 2009 Grade 6 NYS assessment. In Nassau County question 28 had the highest percent of 0 points (29%) among the constructed response. What made question 28 such a challenge? Number 28 reads, "Jenny picked 25 roses. She gave away 10 roses. What percent of the roses did Jenny give away?" Students were to show work for this problem. This problem is linked to content performance indicator 6.N.21, "Find multiple representations of rational numbers (fractions, decimals, and percents 0 to 100)." This is an example of multi-step mathematical thinking rather than difficult numbers and operations.

Over the last four years, teachers have been paying attention to the NYS Mathematics Content Strands. When analyzing this problem, teachers may want to consider the Process Strands. One of the categories is Connections. Performance indicator 6.CN.3, "Connect and apply mathematical information to solve problems," applies.

One technique to investigate why this problem is challenging to grade 6 students, is to review the papers of all students in the district who did not get the full 2 points. Those errors would need to be categorized and tallies kept for each category of error.



Teachers can also ask a group of grade 6 students to do this problem and explain each step, and then discuss the problem and record their responses.

Teachers need to use student work to evaluate their instruction. If the student papers are sorted by Level, did the Level 3 students at least write the correct fraction on their paper? What did Level 2 students write on the paper?

From an educator's viewpoint, we might ponder several thoughts:

- Percent is introduced in the grade 5 curriculum as 5.N.11, "Understand that percent means part of 100, and write percents as fractions and decimals."

- The problem is identified as 6.N.21, "Find multiple representations of rational numbers (fractions, decimals, and percents 0 to 100)."

Some challenges in the problem may be:

- It is written as a word problem, not as a conversion problem.
- Children may focus on "give away." (Some teachers use these key words for subtraction.)
- Children need to know "part over whole."
- This is a two-step problem: 1. Set-up the correct fraction, 2. Convert the fraction to percent.
- A method needs to be chosen to convert fractions to percents i.e. division, equivalent fractions, or proportions.

¹ <http://www.ncrel.org/sdrs/areas/issues/envrnmnt/drugfree/sa3act.htm>

continued on page 4

Professional Development

Math Works: Games, Puzzles and Diversions for the Classroom to Stimulate Analytic Thought

When: December 18, 2009, 8:30 am–3:30 pm

Where: Robert E. Lupinski Center

Facilitator: John Hinton

Math Leaders Collegial Circle

When: February 10, 2010, 8:30–11:30 am

Where: Western Suffolk BOCES, Wheatley Heights

or

When: April 28, 2010, 8:30–11:30 am

Where: Robert E. Lupinski Center

Facilitator: Dr. Elaine Zseller

For more information and to register, visit our Web site:

www.nassauboces.org/cit/catalog/current/index.htm

BING: A Search Engine?

Bing is a search engine organized by broad topic, with links to narrow and related topics. Good search results start with the broad topic. Then narrow the topic and use the related information as needed. Note that since this is a search on the World Wide Web, hits may include inaccurate or biased information.

A broad search on “lemon” resulted in 31,600,000 hits; only the first few were viable. Narrow topics (linked) were listed on the left: lemon movies, lemon quotes, lemon biography, lemon uses, images, videos, etc. Below this list were related topics: (related searches) health benefits of lemons, lemon diet, facts fruit lemon, et al. On the right are links to sponsored (commercial) sites.

Bing looks organized and is an easy search engine to use. The homepage is a visual treat. Note that to begin a new search, one must start from the beginning, otherwise hits will continue to narrow the topic of the original search term. Try www.bing.com. Try www.bing-vs-google.com to compare results between Bing and Google. David Pogue’s article *Bing Shifts the Game on Google* in the *The New York Times* (July 9, 2009), provides another perspective on these search engines. You can access this full-text article through **NOVELny: Gale**.

Dewey Decimal Classification

The Dewey Decimal Classification is a system to locate books in a library using decimals. It is a practical, real life application of decimals. Melvil Dewey developed this system in 1876.

Since then it has been greatly modified. Most school libraries and many public libraries use Dewey.

Dewey is organized into 10 categories (or main classes), which are then further subdivided according to the specificity for the item. It is purely mathematical and hierarchical. More general books have a shorter number, more specific have a longer number. Books are placed on the shelf according to number—in increasing order.

Although it is helpful to remember the basic categories, one can find a specific book using the OPAC (online public access catalog), which is an electronic database of all items included in the collection. Using the Dewey number, with an understanding of the organization of the library, it is easy to locate the book on the shelf. Other books on the same or similar theme are located nearby, making it easy to browse for additional materials on the same or related subject.

Lessons about the Dewey Decimal Classification System can be found at www.kn.pacbell.com/wired/file/pages/listthedewey.html. School librarians teach Dewey; it is a major topic at all grade-levels.



Spotlight: FASTTMath

Students in Long Beach are spending their time on the new self-paced math modules of “Fastt Math.” This innovative program allows the students to work at their own levels, reinforcing old concepts and building on the new framework taught by their teachers. “Fastt Math” combines flash cards with a game atmosphere to keep the students fully engaged at all times. Since its inception within the past month, it has gotten a THUMBS UP from both teachers and students!

Check it out at: www.highbeam.com



See all the latest

Fall Professional Development offerings Nassau BOCES’ CIT has to offer:

<http://nassauboces.org/cit/catalog/current/index.htm>

Tech Toys

Are your middle and high school-level math and science scores not at the level you desire? Would you like a cost-effective way to positively impact and improve your students' love of math and science? Engaging today's digital technology-native students is critical to maintaining their attention long enough for learning to occur. This reality drove the design of the discovery-based activities and 3D-rich visuals featured in every **Adaptive Curriculum Activity Object**. www.adaptivecurriculum.com/us/

Ignite! Math features an innovative combination of engaging media and print activities to stimulate student comprehension and classroom interaction. The use of print and media together is purposeful—it gives students opportunities to be both engaged and active participants in the process of learning mathematics. www.ignitelearning.com/math/

DreamBox Learning K–2 Math helps kids learn math in an engaging and effective online adventure game! Best of all, it provides a standards-based math curriculum and more than 350 fun lessons and games, so kids have fun while increasing proficiency and achievement scores. <http://tinyurl.com/y9kzr2f>

RTI Collegial Circle

A considerable amount of professional development needs to be provided in the beginning stages of the establishment of RTI systems for capacity building in districts. Additionally, continuing training and technical assistance is extremely critical to any type of systems change and to ensure the success of RTI.

Nassau BOCES Professional Development program is currently running a Response to Intervention (RTI) Collegial Circle for building and district level administrators. The group will meet several times over the course of the school year to discuss topics such as:

- Building leadership skills for Response to Intervention implementation
- Reviewing current practices and materials to determine which match the RTI model
- How to design and facilitate the district RTI team
- What does “research based” instruction and interventions mean
- How to evaluate your primary reading program
- Where can you find resources for Tier 2 and 3 interventions
- How to move forward without overwhelming staff
- How to choose a data management system for RTI

The Collegial Circle provides current information, resources, and discussions to problem-solve how the RTI mandate can be implemented in schools.

The new **Audio Enhancement Infrared Teacher Microphone System**, powered by Panasonic audio technology, brings a new level of convenience to the classroom. With a revolutionary new patented remote control feature, the teacher is able to control the volume of the student microphone, his or her microphone, or the auxiliary input level.

www.audioenhancement.com/content/view/142/187

AVerPen offers a handy interactive, collaborative learning solution. The AVerPen, from AVerMedia, is a revolutionary teaching and learning solution that allows students and teachers to simultaneously interact with lesson materials to enhance understanding, foster collaboration, and conduct immediate group assessment. AVerPen puts learning in students' hands while the teacher leads students through lessons and demonstrations. www.avermedia-usa.com/presentation/product_averpen.asp



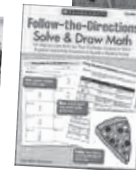
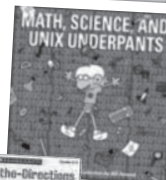
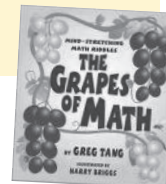
Math Books

Grapes of Math by Greg Tang

Math, Science, and Unix Underpants: A Themed Foxtrot Collection by Bill Amend

Follow-the-Directions: Solve & Draw Math (grades 3–5 and 6–8) by Merideth Anderson

Sir Cumference and the First Round Table by Cindy Neuschwander



Honor a School Librarian

Each Nassau BOCES School Library System (NBSLS) honors a school librarian. Do you collaborate with the school librarian in your building to develop creative learning assignments for your students? Has he/she created a collection of materials that engage the students to use 21st Century Learning Skills? Is the school library a common learning space where students go? Applications for the NBSLS School Librarian of the Year must be submitted by February 12, 2010 to be considered.

<http://www.nassauboces.org/nsis/SLOYNOMFRM08.pdf>