



Math Matters

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Teacher Leader Institute

What did you do on your summer vacation? Many exceptional mathematics teachers in West Virginia spent their summer either presenting or participating in the WVDE Teacher



Leadership Institute. This week-long professional development experience for practicing teachers is designed to assist teacher leaders and their county office leadership with the collaborative implementation of quality instructional design for 21st century learners.

The Institute, now in its third year, provides teachers with a quality professional development experience focused on the following concepts: the 21st Century digital learner; 21st Century content in the context of real-world applications using 21st Century tools; quality instructional design; performance assessments in the context of assessment for and of learning; modeled book study; strategic planning for county-wide implementation of professional development; professional development modules designed to assist county teams in facilitating professional development focused on 21st Century learning; and a major emphasis on Project Based Learning.

After an intense week of learning, these teacher leaders return to their counties prepared to make informed recommendations and to provide leadership related to county-wide professional development for quality 21st century learning. Through face-to-face regional follow-up sessions,

webinars and online discussions, the teacher leaders receive continued support from the Institute staff and the WVDE staff throughout the following school year, particularly as they develop their own

PBL's. Lou Maynus, State Mathematics Coordinator, is integrally involved with the mathematics team as they orchestrate a quality professional development experience for the mathematics teacher participants.

As the premiere professional development from the WVDE, it will undoubtedly impact mathematics education in West Virginia in a powerful way. The mathematics presenters at TLI include WVCTM members Neil Reger, Cynthia Burke, Sheila Ruddle, Ellen Larter, Holly Plunkett, Jerry Pomeroy, Susan Naylor, Diane Lemon, Susan Barrett, John Ford, and Lynn Baker.

"We have to reinvent the wheel every once in a while, not because we need a lot of wheels; but because we need a lot of inventors."

-- Bruce Joyce

Presidential Awards for Excellence in Mathematics and Science Teaching

The Presidential Awards for Excellence in Mathematics and Science Teaching are

our nation's highest honors for teachers of mathematics and science. Outstanding K-12 teachers are recognized for their contributions

in the classroom and to their profession. Since the inception of these awards in 1983, more than 4000 teachers have been honored with this prestigious award. Each year the award alternates, being given either to science and mathematics teachers in grades K-6 or to those teaching in grades 7-12.

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Susan Naylor

It's Time for Nominations

The annual conference recognizes many individuals: teachers, potential teachers, and students, but these honors can be bestowed only if **you** take a few minutes to nominate them for a most deserved honor.

Under the Forms tab at WVCTM.org you can print the form needed by your students to enter the poster contest. Poster winners are recognized at K-2, 3-

5, 6-8, 9-12, and College levels. Posters must reflect the conference theme (which for 2010 is "Mathematical Getaway.")

Under the Forms tab also can be found the nomination forms for 2010 Distinguished Service Award and the Teacher of the Year Awards at the Elementary, Middle, High School, and College levels.

In addition, under the Forms tab are also the Teacher-in-Training Grant and the Golden Holtan Grants. All of these are nomination forms, except the Golden Holtans. Named for Dr. Boyd Holtan, a retired professor from West Virginia University, the Golden Holtans are application grants for practicing classroom teachers for development of a particular project in their classrooms. These projects must reflect the state CSO's in mathematics. Teachers are encouraged to take advantage of these mini-grants that can enhance their classroom instruction.

All of these nominations and applications must be received by **February 1, 2010**, by the respective chairs (noted on the particular form).

Presidential

(continued from page 1)

Winners of the Presidential Teaching Awards receive \$10,000 from the National Science Foundation and a trip to Washington, D.C. that includes a White House awards ceremony and several days of educational and celebratory events. The 2008 recipients were announced by President Obama on July 9. In the White House press release, President Obama said, "There is no higher calling than furthering the educational advancement of our nation's young people and encouraging

and inspiring our next generation of leaders. These awards represent a heartfelt salute of appreciation to a

remarkable group of individuals who have devoted their lives and careers to helping others and in doing so have helped us all."

Susan Naylor of Parkersburg, WV will receive this award this fall at a White House ceremony. An educator for more than thirty years, Susan has taught first grade (most recently at Gihon Elementary), and is currently an Instructional Coach in the Wood County

School System. She has a B.S. in education from Ohio State University and an M.A. from West Virginia University. She is certified in elementary education and is National Board Certified as an Early Childhood Generalist.

Susan has been extensively involved in providing professional development and ongoing support for elementary teachers throughout West Virginia as they make the transition to inquiry-based mathematics instruction. She has participated in numerous statewide mathematics initiatives including opening her classroom practice to the videotaped lessons project of the WVDE Model Classroom. These videotaped classroom vignettes provide elementary teachers with quality online professional development. Susan has also been a member of the WVDE Office of Educational Performance Audit Team, the Mathematics Leadership Team, and the Office of Curriculum and Instruction and Assessment Mathematics Task Force. In addition, she has served on the writing committee to develop mathematics content standards and objectives. For the past three years she has been a part of the leadership team of presenters for the week-long summer "Teacher Leadership Institutes." Teachers selected to attend these institutes have unique professional development opportunities that focus on 21st Century Classroom teaching and

learning. In 2006 Susan was selected as a Fulbright Memorial Fund Teacher which afforded her the opportunity to spend three weeks observing schools in Japan.

Upon receiving notification of this prestigious award, Susan stated, "For me the Presidential Award represents a benchmark in my professional journey. It has come at a point where I can look back over the years and experiences I've had as a teacher and appreciate how they've worked together to shape me into the teacher I have become. To receive recognition for that growth is very gratifying personally, and on behalf of the wonderfully dedicated teachers of West Virginia, it is also very rewarding as a symbol of honor and appreciation for the teaching profession."

WVCTM salutes Susan Naylor, 2008 winner of the Presidential Award for Excellence in Mathematics and Science Teaching. Susan has implemented the vision of a 21st Century classroom with creative ideas, coupled with energy and enthusiasm; she is truly an outstanding educator of whom we can be proud.

The 2009 Award review process is currently underway. The applicants (teachers in grades 7-12) were evaluated by the state committee in May and the submission to the national selection committee occurred in June. The 2009 awardees will not be announced until the summer of 2010.

This fall the process begins for the 2010 Awards which will honor mathematics and science teachers working in grades K-6. Nominations are now open and the appropriate forms can be accessed at paemst.org. Applications are also available at this website, and it is advisable for potential applicants to begin the process early as classroom video is a part of the process used to document the narrative components of the application. Applying for this award can be a valuable learning process as it encourages a reflective look at a teacher's classroom practice. If you have any questions, contact either Cheryl Reger or Debbie Seldomridge.



Professional Development Made Easy!!



PROFESSIONAL DEVELOPMENT

Schools today face an array of complex challenges—from working with an increasingly diverse population of students, to integrating new technology into the classroom environment, to meeting rigorous academic standards. Effective professional development is vital to school success, and traditionally that has been provided through a variety of workshops, usually with the help of an outside consultant or curriculum expert. Increasingly, to provide these ongoing learning opportunities to meet the individual needs of teachers, schools are utilizing webinars and other on-line avenues. NCTM, under the professional development tab, has made a wealth of quality learning available to teachers. A new feature includes the use of articles from a variety of NCTM publications with “enhancement” for use for professional development. Typical enhancements include a rationale for use of a particular article, potential questions that can be addressed with the group studying the article, and extensions of the ideas developed in the article. Take a look as you plan professional development within your mathematics department...you may find just the article that you need!!

Common Standards Made Public—Let Your Voice be Heard!!

The college- and career-readiness standards developed under the direction of the National Governors Association (NGA) and the Council of Chief State School Officers (CCSSO) have been released for public comment.

NCTM President Hank Kepner states, “It is important that mathematics teachers’ voices be heard and listened to as part of this endeavor—both nationally by the NGA and CCSSO and in your state.” The comment period will end on October 21.

The next phase in the standards development is the creation of grade level standards planned for completion by early 2010. This initiative began with an understanding among the nation’s governors to agree in concept to a single set of standards. The common core standards initiative that grew out of this agreement produced the draft standards for mathematics and English-language arts. To date, 48 states have joined the common core state standards initiative, West Virginia being one of those. Although NCTM was not originally involved, it has had the opportunity to review and comment on these standards, and a group of NCTM members have met with the CCSSO and NGA staff to submit suggestions prior to the release of the draft document. Additional meetings with leaders of the initiative have given NCTM further opportunity for input. You may access these standards and make comments on them at www.corestandards.org. Remember the public comment period ends on October 21.

Extra! Extra! Read All About It!

Please help us learn more about what’s happening in mathematics education in West Virginia. We want to celebrate teacher and student achievements, advertise potential professional development opportunities, and learn about pedagogical and content strategies to enhance the teaching of mathematics. Submit your article to debbiesel@gmail.com.



The Math Corner Sponsored by Texas Instruments

*"He who dares to teach must never cease to learn."
- Richard Henry Dann*

We had great success with proposed solutions to the problem in the last issue of Math Matters. The winning solution was submitted by Ed Barlow, who won the TI-Nspire. First we repeat the problem:

A man has 12 rocks. All of the rocks look the same and can't be distinguished visually. However, it is somehow known (probably magic) that 11 of the rocks have the exact same weight but the twelfth is a little different. The man has a balance scale that he is allowed to use 3 times. Give a procedure whereby the man can determine which rock is a different weight and whether it is lighter or heavier than the others.

Here is Ed's Solution:

Label the rocks A through L

1st weighing - take the 1st 4 rocks and the 2nd-4 rocks to weigh against each other. That is, put A, B, C, D in one pan of the scale and E, F, G, H in the other pan. If they balance, then the one with an odd weight must be in the remaining 4 rocks. So, one of I, J, K, L is an odd weight.

2nd weighing - (If I, J, K, or L is the odd rock) Take I, J, K and put them in one

pan and A, B, C in the other pan. If they balance then L is the odd rock. By weighing L against rock A and observing the scale, it can be determined if rock L is heavier or lighter than the other 11. Now, if I, J, and K did not balance with A,B,C, it is known one of them is an odd weight, and it will be known if the odd rock is heavier or lighter than all the others.

3rd weighing - Weigh I against J. If they balance, K is the odd rock and it will already be determined if it is heavier or lighter than the rest of them. If they don't balance, the heavier rock is the odd one.

Now 2nd weighing - if A, B, C, D, E, F, G, or H is the odd weight rock. Take 2 from the "heavy" side and 1 from the "light" side and weigh them against the other 2 from the "heavy" side and one from the "light" side. If A, B, C, D are heavy and E, F, G, H are light, put A, B, and E in one pan and C, D, and F in the other pan. If they balance, G or H is the odd weight. To find which one, weigh G against a normal one, say I. Easy to see if it weighs the same or not. If the same weight, then H must be the lighter one; and if not, G must be the lighter one.

Now, if when the 2nd weighing occurred it was observed an imbalance, then the odd one must be A, B, C, D, E, or F (4 heavy ones - A, B, C, D and 2 light ones - E, F.)

If the side with C, D, and F showed it was heavier than the side with A, B, and E then make the following weighing:
(*Note: see below)

3rd weighing -

If C, D, and F was heavier, then either C or D is the heaviest of all rocks; OR the light one in the other pan, namely E, is the odd one. Put C in one pan and D in the other pan to determine the heaviest one. But if they are the same weight, then the light one E must be the odd weight, lightest of all.

*Note: If the pan with A, B and E is heavier, do the same procedure as in weighing 3 above.

In this issue, we are going to try something different. Texas Instruments has provided us with a TI-73 Explorer as a prize for this issue's winner. We are offering it to a **student** in the 8th grade or below who solves the following problem. The solution must be submitted by a teacher who is a member of WVCTM to gaseldomridge@mail.wvu.edu. The teacher must verify that the solution was written by the student without the help of a teacher. If the verification is not included, then the solution will not be considered. Complete solutions must be provided and not just answers. The winner will be the person whose solution is received with the least lapsed time since the notification email was sent. The calculator will be sent to the teacher.

Everyone knows that there are 64 one by one squares on a checkerboard. However, there are some 2x2 squares and 3x3 squares and so on. It is not difficult to see that there are 204 total squares on a checkerboard. How many rectangles are there on a checkerboard?



Coming Events

WVU Mathematics Symposium
November 5, 2009

WVCTM Annual Meeting
"Mathematical Getaway"
Flatwoods, WV
March 19 - 20, 2010

WV State Math Field Day
at West Virginia University
May 1, 2010

NCTM Annual Meeting
"Connections: Linking Concepts and Context"
San Diego, CA
April 21-24, 2010

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New Math Books for 2010-2011 School Year

During this past summer many mathematics teachers at all levels reviewed the instructional materials submitted to the WVDE for bid for the 2010-2011 school year. Under the able leadership of the Coordinator for Instructional Materials, Alma Simpson, teachers carefully examined curricular materials to check for their adherence to the criteria based on the West Virginia CSO's. The tentative date for review of the advisory committee's findings by the West Virginia State Board of Education is November 9 & 10. At this time they will decide upon the State Multiple List of Instructional Materials for Mathematics. It is tentatively planned, contingent on the State Board action, that a County Instructional Materials Webinar will be held on November 18. Teachers will then have the winter and spring to make county decisions. In the midst of the harried life that most teachers lead, it is often easy to let someone else make these important decisions. All of us know that textbooks matter and that their selection often shapes the delivery of instruction significantly. So, when your county asks for volunteers to review the new instructional materials, raise your hand and help make the decisions that will change students lives!