

General Sessions Feature JMU Math Educators

Dr. LouAnn Lovin to Share Ideas from Experience in England

Connecting mathematical ideas to a context can enhance not only students' interest but also their understanding. LouAnn will share some of the mathematical ideas and relevant contexts she used in a mathematics course taught in London, England during Spring 2006. Part of the session will also identify how [similar](#) contexts could be used in K-12 settings.

LouAnn Lovin is an Associate Professor and department head of Middle, Secondary, and Mathematics Education at James Madison University. She is a mathematics educator whose work involves identifying and developing PreK-8 teachers' mathematical knowledge for teaching. She is also a past president of V²CTM and co-authored a series of three mathematics education texts along with John Van de Walle: Teaching Student-Centered Mathematics: Volume One, Grades K-3, Volume Two, Grades 3-5 and Volume Three, Grades 5-8 .

Harvey Almarode to invite everyone to Take the 24 Challenge

Learn how to incorporate the different 24 Games into your classroom. From kindergarten to Calculus, the different games can be utilized to increase computation skills, mental math skills, problem solving skills, and adding just plain fun competition to your classroom. Once the game is understood in your classroom or school you can think about conducting a 24 Challenge Tournament. Learn how to plan, organize, and conduct a 24 challenge tournament in your class or school and then take it to the next level of having a division wide tournament and hopefully participating in the V²CTM regional 24 Challenge Tournament scheduled [at](#) the end of March 2007. Harvey Almarode and teachers from Augusta County will share what they do with the 24 Games and how they utilize this to increase the mathematical power of their students in their schools. Harvey is retired from Augusta County Schools where he served as the Mathematics Supervisor for 17 years. He has planned, organized, and conducted 24 Challenge tournaments for classrooms, schools, and the division for over 6 years. He is currently an instructor in the [Middle, Secondary, and](#) Mathematics Education Department in the College of Education at James Madison University.

Door Prizes for the Nov. 16 meeting!

As if a good program, inexpensive meal, and the opportunity to share with colleagues from throughout the Valley weren't enough--Kara Velez has arranged for there to be many door prizes to be given during dinner including:

The Teacher's Aide gift certificate

Kline's Dairy Bar gift certificates

Applebee's Restaurant gift certificate

Daily Grind gift certificates and "Bean Bucks"

Single Digit and Double Digit 24 Games (given out after Harvey's presentation)

...and more! If you don't come you can't win!

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6th and 7th Grade SOL Test Scores are Sour—What Went Wrong?

An opinion by Joe Hill

School divisions throughout the Commonwealth are dealing with exceptionally low scores on the 2006 Math SOL tests given in grades 6 and 7. This was the first year that SOL tests had been given to 6th and 7th graders; in the past, 8th graders took a combined 6th, 7th, and 8th grade test. Statewide, only 51% of 6th grade and 44% of 7th grade students passed the SOL test. The eighth grade results were better, 76% passing, even though this was the first time the 8th grade test had included only 8th grade SOLs.

What caused the 6th and 7th grade scores to be so poor? The official response from the Department of Education is found in the September 27 news release

(<http://www.pen.k12.va.us/VDOE/NewHome/pressreleases/2006/sep27.html>):

The increased rigor of mathematics testing in grades at the middle school level resulted in a decrease in the percentage of middle schools achieving full accreditation, although nine middle schools that were accredited with warning during 2005-2006 are now fully accredited.

The introduction of these tests has provided a shared lesson for educators at every level on the importance of understanding the goal implicit in the mathematics SOL of preparing students for success in Algebra I by grade 8 and by grade 9 at the latest,” said Dr. Cannaday. “The department will develop new instructional resources to help students and teachers achieve this goal.”

To DOE’s credit, they have now released the 6th and 7th grade tests for teachers and administrators to review. This also gives us more insight into what went wrong. When DOE releases the Student Performance by Question report we’ll have even more information—how our students did on each question.

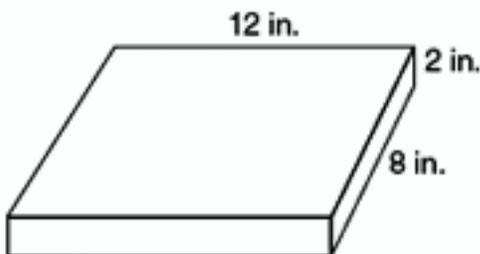
Here are some explanations I’ve heard for the low scores and my comments:

1. *Since this was the first year for SOL testing in these grades, school divisions hadn’t aligned their curricula to the SOLs yet.* This is hogwash. How can you teach math in Virginia since 1998, the first year of SOL testing, and not be teaching SOLs? Our textbooks, our curriculum, and our teaching reflect the SOLs and, in many cases, nothing but. Some folks point to the state’s poor 1998 test performance and say the same thing just happened in grades 6 and 7. But in 1998 the SOL tests had no ‘meat.’ Many of us basically ignored them. Now, they count for accreditation. No one in his right mind would ignore them now.
2. *Sixth and Seventh Grade teachers didn’t do a good job of preparing students.* I am greatly offended by this. I consider these test results to be an unmerited slap in the face to our fine middle school teachers. If sixth and seventh grade teachers didn’t do a good job in preparing students then the 8th grade scores for 1998-2005 would have reflected it. But the state passing rate on the 8th grade test was 80% in 2004 and 81% in 2005. According to data provided to me by Roanoke County, Rockingham County Schools had the highest 6th grade scores in the state on the 2006 test (71% pass) but these results still caused one of our middle schools to lose its full accreditation. I think the finger needs to be pointed at the test, not the teachers.
3. *The test contained test items above and beyond the SOLs.* As much as we might have wanted this to be the case, it isn’t. Each question can each be matched up to one of the SOLs. You can see for yourself by downloading a copy of the released tests from this site:
<http://www.pen.k12.va.us/VDOE/Assessment/Release2006/index.html>
4. *The cut scores were set unreasonably high.* This one may have some merit. I do think it is fishy that the cut scores for the two tests were quite different: 34 out of 50 for the sixth grade and 31 of 50 for the seventh grade test. Granted, asking students to get 62% correct to pass a test doesn’t seem like asking for a lot, but why then did 56% of the population fail?
5. *The test was just a hard test, frequently involving the toughest part of a SOL.* This is certainly true. For example, SOL 6.6 states that “The student will solve problems that involve addition, subtraction, multiplication, and/or division with fractions and mixed numbers, with and without regrouping, that include like and unlike denominators of 12 or less and express their answers in simplest form; and find the quotient, given a dividend expressed as a decimal through thousandths and a divisor expressed as a decimal to thousandths with exactly one non-zero digit.” Note that since this SOL is in the Computation

and Estimation section it must be done without a calculator. Of the ten sans-calculator problems on the test, three involved adding or subtracting fractions, including mixed numbers, with unlike denominators, two involved dividing a decimal number by a decimal number, and one required a whole number to be multiplied by a mixed number. The test makers could have asked easier questions about this SOL but they chose not to.

6. *The test involved lots of application problems with multiple steps.* True!. To the right is another example taken from the non-calculator part of the sixth grade test. This problem, like many others, is a multi-step problem.
7. *The test had some poorly worded problems on it.* Although this sounds like a scapegoat, I agree that some of the problems weren't high class. Here's an example: A highly respected seventh grade teacher reported to me that her students were confused by the words "greatest value" in the Lopez Family problem below. We math teachers might instantly think of the word value as representing a number but her insightful 7th graders treated the words as meaning "most appropriate." And we all know that some measures of central tendency are more appropriate than others.
8. *The test had too many "gotcha" problems on it.* I agree with this, too. For example, on the 7th grade test students were required to use the formula provided to compute the volume of a cylinder. The formula uses the radius of the circular base whereas the information provided was the diameter of the base. Or consider the 7th grade question below—students could easily interpret "cover" as meaning only on the top surface. Of course, one of the incorrect answers was 96 square inches.

Carl is covering the rectangular prism-shaped box with cloth.



What is the minimum amount of cloth Carl needs to cover the entire box?

Price for Different Types of Reeds

Item	Number of Reeds per Box	Price per Box
Clarinet reeds	10	\$5.13
Oboe reeds	1	\$4.95
Alto saxophone reeds	5	\$8.42

Based on this table, what is the cost to buy 10 of each different type of reed?

Look at the table.

Lopez Family

Family Member	Age (in years)
Grandmother	55
Grandfather	54
Mother	33
Father	33
Son	8
Daughter	5

Based on the ages of the Lopez family members, which of the following has the *greatest* value?

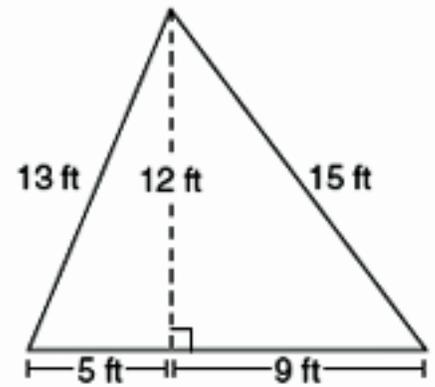
- F Mean
- G Median
- H Mode
- J Range

So what can we do about all this? Unfortunately, there's nothing we can do about last year's bad scores. But we can be ready for the 2007 tests. Our plan must be to teach problem solving, teach problem solving, teach problem solving! It is not sufficient for us to just present students with problems that involve no decision

making. We must give our students many experiences with multi-step, tough problems with extraneous data like the question to the right taken from the 7th grade test. And we can ask our friends in Richmond to lighten up...

We should also take a more active part in the state review committees. Dr. Marcia Perry, team leader for Math/Science in the Division of Assessment and Reporting at DOE, advised me to “urge teachers to be a part of this process by applying for the many summer content committees... We rely on teacher input for all of our committees. They are an essential part of our test development.” She reminds us that “the cut scores were recommended by several committees made up of about 20 teachers each that met this summer.” In summary, in my opinion, we can and must: 1) do a better job challenging our 6th and 7th grade students 2) be represented on the state committees and 3) expect a less tricky test with a reasonable cut score.

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What is the total area of the figure shown?

Upcoming Meetings

Virginia Council of Supervision of Mathematics (VCMS)

Fall meeting

October 26-27, 2006

Crowne Plaza – Richmond West

Richmond VA 23230

Contact: <http://www.vcmsonline.com>

Virginia Council of Teachers of Mathematics (VCTM)

Annual Meeting: “Ride the Math Wave of Making Math Real”

March 9-10, 2007

Virginia Beach Resort Hotel and Conference Center

2800 Shore Drive

Virginia Beach, Virginia

Contact: <http://www.vctm.org>

National Council of Teachers of Mathematics (NCTM)

85th Annual Meeting: “Mathematics: Representing the Future”

March 21-24, 2007

Atlanta, Georgia

Contact: <http://www.nctm.org>

Virginia Council of Teachers of Mathematics (VCTM)

Annual Meeting

TBA, 2009

James Madison University

Harrisonburg, Virginia

V²CTM Fall 2006 Meeting Registration

Return this registration form to Joe Hill, Rockingham County Public Schools,
100 Mount Clinton Pike, Harrisonburg VA 22802. Better yet, register on the web at
<http://www.rockingham.k12.va.us/register>
You may pay at the door on November 16.

Name _____

School _____

School Address _____

Home Address _____

Annual Membership & Dinner Dues (\$10.00) Enclosed _____

E-mail Address _____

See you at Memorial Hall on Nov 16!

V²CTM Reflection

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**PLEASE SHARE THIS NEWSLETTER WITH ALL MATHEMATICS TEACHERS,
GRADES K-12**