

# WHAT'S WRONG WITH TERC'S INVESTIGATIONS MATH?

- ✓ It least adequately supports Virginia SOLs.
- ✓ It introduces standard algorithms too late for proficiency and discusses rather than teaches them.
- ✓ No valid studies support it.
- ✓ Insufficient practice in all areas.
- ✓ Content deficient.
- ✓ Proven record of failure in California, Utah, Washington State, New York and Missouri.
- ✓ Too expensive at a time of budget crises; \$2,408,379 as of March 2008 and growing.
- ✓ Focus on how to teach rather than teaching content.
- ✓ Fraction to Decimal conversions taught on calculator.
- ✓ Tests are only one or two questions with a subjective grading rubric.
- ✓ The following are not taught unless supplemental materials are incorporated into core extension time, classroom by classroom:
  - Long Division
  - Uncommon fractions like  $1/7$ ,  $1/11$
  - Formulas for Area and Volume
  - Statistical mean

## Weapons of Math Destruction™ Math Lab



Ooh, something's happening over there.  
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## WHAT CAN YOU DO?

- ❖ Complain at your school
- ❖ Write to the school board & other elected PWC & VA State Officials
- ❖ Write to the media
- ❖ Speak at school board meetings
- ❖ Sign the Petition to Remove TERC "Investigations" K-5 Math Curriculum from Prince William County Schools:  
<http://www.petitiononline.com/123math/petition.html>

To learn more, visit our website:  
[www.pwcTeachMathRight.com](http://www.pwcTeachMathRight.com)

To contact the  
**PWC Teach Math Right Team,**  
email: [teach.math.right@gmail.com](mailto:teach.math.right@gmail.com)

# PWC TEACH MATH RIGHT!

Get informed, be an advocate for your children's education.

*"If we mathematicians had to re-discover mathematics on our own, we would not get very far!"*

-Dr. Wilfried Schmid, Mathematics Professor, Harvard

*"My personal view is that TERC is the second most mathematically illiterate and damaging program I have ever seen."*

- Dr. R. James Milgram, Professor of Mathematics, Stanford University

*"The trouble is the lack of real math. The style of teaching is not the problem; it is the material. If experience in education has any lesson to offer, it is this: **Children tend not to learn what they are not taught.**"*

-Dr. Ralph Raimi, Mathematics Professor, University of Rochester

## TEXTBOOK ADOPTION BIAS:

Fordham's Michael J. Petrilli wrote that Ruth Parker's views represent "...an extreme view—one that has no pairing on the traditionalist side of the spectrum."

<http://www.edexcellence.net/gadfly/index.cfm?issue=332#a3912>

Yet Ruth Parker, who stated "the only math program I have ever publicly advocated for... (is) called Investigations in Number, Data and Space...", was asked to come "kick-off" our textbook adoption process with her perspective on quality mathematics instruction.

[http://www.mv-voice.com/morgue/2000/2000\\_09\\_01.guest91.html](http://www.mv-voice.com/morgue/2000/2000_09_01.guest91.html)

## DIMINISHED CONTENT:

**Which problem would you rather have your 5th grader be capable of?**

### Investigations Math Problem

Suppose you get 6 cents for each bottle you return for recycling. For each problem show how you found your solution.

**You have collected 149 bottles. How much will you earn?**

### Singapore Math Problem

Adam bought 8 note pads at \$1.45 each and 10 towels. He gave the cashier \$100 and received \$46 change.

**Find the cost of a towel.**

Dr. Wilfried Schmid, Mathematics Professor at Harvard, "A TERC teacher doesn't explain, and a TERC teacher doesn't teach! I don't want to be misunderstood: group learning and discovery learning are parts of the tool chest of

every accomplished teacher, but it is folly to turn these techniques into an ideology... By the end of fifth grade, TERC students have fallen roughly two years behind where they should be."

<http://www.nychohold.com/forum01-schmid.html>

W.S. Wilson, PhD, Johns Hopkins Professor, "TERC Investigations has weaknesses in all three examined threads... (and is not) mathematically acceptable."

<http://www.math.jhu.edu/~wsw/ED/wswmathreview.pdf>

2008 TERC Math vs. 2008 National Math Panel Recommendations

<http://www.wgquirk.com/TERC2008.html>

Dr. E.D. Hirsch, "Moreover, the Virginia standards (not to mention the tests) are not nearly as good as they should be..."

[http://www.aft.org/pubs-reports/american\\_educator/issues/spring2008/hirsch.pdf](http://www.aft.org/pubs-reports/american_educator/issues/spring2008/hirsch.pdf)

Keeping an Eye on State Standards—NAEP

<http://www.hoover.org/publications/ednext/18845034.html>



The State of State Math Standards 2005 – Virginia standards receive a C.

[http://www.edexcellence.net/detail/news.cfm?news\\_id=338](http://www.edexcellence.net/detail/news.cfm?news_id=338)

## PEDAGOGY FLAWS:

*Any approach that revisits topics year after year without bringing them to closure should be avoided.*

<http://www.ed.gov/about/bdscomm/list/mathpanel/report/final-factsheet.html>

"Procedural fluency and conceptual understanding are often seen as competing for attention in school mathematics. But pitting skill against understanding creates a false dichotomy... the two are interwoven."

[http://books.nap.edu/openbook.php?record\\_id=9822&page=122](http://books.nap.edu/openbook.php?record_id=9822&page=122)

Dr. Ruth Parker, "There are two main concerns about the limitations of teaching standard paper and pencil algorithms, and especially about teaching them prematurely. First, the algorithms often obscure place value relationships, and second, they can interfere with the development of children's ability to reason with numbers."

<http://www.mcc-math.org/community-engagement/public-awareness/thinking-about-alternative.pdf/view>

Thus, Dr. Parker's concern that teaching algorithms prematurely feeds into the misguided belief "that children of particular ages cannot learn certain content because they are 'too young' or 'not ready'."

<http://www.ed.gov/about/bdscomm/list/mathpanel/report/final-factsheet.html>