

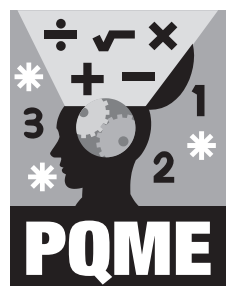
Parents For Quality Math Education

"Investigations" Math: It Just Doesn't Add Up

The time has come for the State College Area School District (SCASD) to drop "Investigations: Numbers, Data, and Space" as its core mathematics curriculum for grades K - 5. Since it was implemented several years ago, students, teachers, and parents in SCASD have struggled with "Investigations" because it fails to develop computational skills and essential mathematics knowledge.

In some SCASD elementary schools, teachers have had traditional textbooks removed from their classrooms and thrown in the trash, leaving teachers to spend their own time and money purchasing and copying supplementary materials for their students. Our SCASD teachers are professionals who should be fully supported in their efforts to educate our children, and absolutely should not be penalized for failing to embrace the unproven, purely constructivist approach that "Investigations" and similar programs espouse.

In response to complaints from parents and teachers nationwide, the publisher of "Investigations", TERC, Inc., has formulated a new 2nd edition of the program. The SCASD math coordinators proposed to the Board of Directors at its May 4 meeting that the 2nd edition of "Investigations" be expanded from its current pilot test at Corl Street Elementary and Grays Woods Elementary to all SCASD schools next year. Although many parents in attendance at this meeting expressed their dissatisfaction with this option, several Board members stated their support for continuing and expanding the use of "Investigations". **THE SCASD BOARD WILL VOTE ON THIS ISSUE AT ITS MAY 18 MEETING.**



WHO ARE WE?

Parents for Quality Math Education (PQME) is a group of parents in SCASD who are seeking (1) a core math curriculum that emphasizes conceptual understanding and traditional math practice that leads to mastery; and (2) changes in the expectations for computational fluency and knowledge of math facts for SCASD students. On April 16, PQME created an online petition asking the Board of Directors to drop "Investigations" and similar programs from its core curricula. Since that time more than 450 SCASD taxpayers have signed on.

YOU CAN READ THE PETITION AND SIGN IT AT:

<http://www.petitiononline.com/pqme/petition.html>

If you would like to read or sign the petition but do not have access to the Internet, please call (814) 206-6182 to have a copy mailed to you or have your name added.

How do the SCASD standards for computational fluency measure up?

Poorly. Students in SCASD are not expected to be able to add two numbers with regrouping (carrying) until 3rd grade. They are not expected to know the multiplication table until 4th grade. Proficiency with fractions is not expected until 6th grade. Students in SCASD are a full grade level behind students in California when comes to expectations for computational ability. This is unacceptable for a district like ours with students of such high potential.

Source: <http://www.edexcellence.net/doc/State%20of%20State%20Standards2006FINAL.pdf>

Does "Investigations" have to be eliminated entirely?

No. Many teachers find "Investigations" to be helpful as one of many classroom resources and deepening conceptual understanding is a worthy goal. Before "Investigations" was introduced, SCASD was a "multiple-resource" district and there were no problems with math achievement. Standardized test scores in SCASD were high, as they have always been: "Investigations" was brought in to fix a math program that wasn't broken. PQME supports a return to the multiple-resource model, with every teacher in every school given the opportunity to use a traditional math textbook. The PQME petition calls for the elimination of "Investigations" only as the core mathematics curriculum.

What does the research say?

There is very little good research on elementary math programs. The best study of "Investigations" to date was sponsored by the U.S. Department of Education's Institute of Educational Sciences and its results were released earlier this year. The results showed that "Investigations" performed significantly lower (0.30 standard deviations lower) than the two top-performing programs. This means that kids at the 50th percentile in math achievement would rank 9 to 12 percentile points (one letter grade) higher if the school used one of the two top-performing curricula instead of "Investigations".

Source: http://ies.ed.gov/ncee/wwc/reports/elementary_math/topic/tabfig.asp

Source: <http://ies.ed.gov/ncee/pubs/20094052/pdf/20094053.pdf>

Investigations Examples

Example 1: Solve $126 + 59 + 42$

Traditional method:

$$\begin{array}{r} 126 \\ + 59 \\ + 42 \\ \hline 227 \end{array}$$

Investigations:

$$\begin{array}{l} 100 + 50 = 150 \\ 20 + 40 = 60 \\ 150 + 60 = 210 \\ 6 + 9 = 15 \\ 15 + 2 = 17 \\ 210 + 17 = 227 \end{array}$$

Example 2: Solve 42×37

"It's the same as multiplying 42 by 40, then subtracting three of them. Ten 42's is 420. Double that to get 840. Then you double that, so it's 1680. Then you have to subtract three 42's. Two 40's down from 1680 is 1600, then another 40 off is 1560, then subtract 6 more. So it's 1554."

Source: TERC Beyond Arithmetic, page 20

To See Video Featuring Demonstrations of Investigations Math Go to:
<http://www.youtube.com/watch?v=Tr1qee-bTZI>

Links to More Information

Parents for Quality Math Education:

<http://groups.google.com/group/parents-for-quality-math-education>

New York City HOLD: <http://www.nychold.com>

Oak Norton (SCAHS '87): <http://www.oaknorton.com/imathstart.cfm>

Mathematically Correct: <http://www.mathematicallycorrect.com>

Contact the SCASD Board of Directors all-board@scasd.org or by US Mail at 131 W. Nittany Avenue State College, PA 16801

Vote for School Board – Election Day is Tuesday, May 19th

Visit the PQME website (<http://groups.google.com/group/parents-for-quality-math-education>) on Wednesday, May 13, to read the candidates' positions on this issue.