



K-5 Meets ESSA "STRONG" Evidence Criteria

The Every Student Succeeds Act (ESSA) promotes evidence-based education programs by ensuring that programs are proven to be effective in increasing student achievement. ESSA includes four levels of evidence: strong, moderate, promising, and evidence that demonstrates a rationale. The ratings of the ESSA level of evidence reflect the quality, rigor, and statistical significance of the research study design and findings of the study.

PROGRAM OVERVIEW

Houghton Mifflin Harcourt's *Saxon Math*™ K-5 provides a learning structure proven to advance students steadily and assuredly to higher levels of understanding by building on their prior learning so all students can master mathematics. In *Saxon Math* K-5, concepts from every math strand are woven together and connected throughout the year. Skills or concepts are reinforced throughout the years, helping students build a strong foundation of understanding.

STRONG
ESSA EVIDENCE
RATING

STUDY LOCATION: 110 Schools across Connecticut, Florida, Kentucky, Minnesota, Mississippi, Missouri, New York, Nevada, South Carolina, and Texas

STUDY YEAR: 2007-2008

STUDY CONDUCTED BY: Mathematical Policy Institute

EVIDENCE CRITERIA

Well-designed & well-implemented experimental study or Randomized Control Trial (RCT)

STUDY EVIDENCE & HIGHLIGHTS

An experimental RCT study, where schools were randomly assigned to use one of four curricula, including *Saxon Math*, *Math Expressions*, Scott Foresman-Addison Wesley, or *Investigations in Number, Data, and Space*® at Grades 1 and 2.

Grades 1 and 2 teachers at the schools were assigned to use the curricula as their core math instruction for the entire school year. Over 98% of teachers reported using their assigned curriculum, while over 75% of those teachers reported using the *Saxon Math* K-5 curriculum as prescribed in the implementation guidelines.

Large & multi-site sample

Saxon Math K-5 was studied in 12 districts throughout the United States. While the sample was not a nationally representative sample, the sample included schools from urban and suburban areas with participating schools having a higher percentage of students receiving free or reduced-price lunch than the national norms.

ANALYTIC SAMPLE:

- Varied school districts with different levels of urbanicity
- 110 schools
- Grades 1-2
- 8,060 participating students

- 32% African American; 26% Hispanic; 39% Caucasian; 2% Asian; 1% American Indian/Native Alaskan
- 9% English learner

Shows statistically significant & positive effects

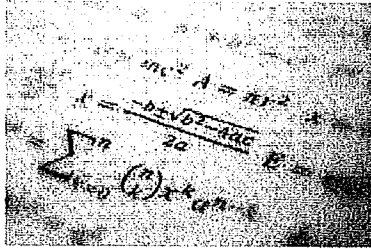
The results of the hierarchical linear modeling indicated that second-grade students in schools randomly assigned to use *Saxon Math* K-5 had significantly greater math achievement than students using the control curriculum Scott Foresman-Addison Wesley (SFAW), as measured by the math assessment designed for the Early Childhood Longitudinal Study.



To learn more about the research behind *Saxon Math*, visit hmhco.com/SaxonMath

Houghton Mifflin Harcourt | hmhco.com

Math Toolkit – Studies and Research



Trends in International Mathematics and Science Study (TIMSS) – Overview

The Trends in International Mathematics and Science Study (TIMSS) provides reliable and timely data on the mathematics and science achievement of U.S. 4th- and 8th-grade students compared to that of students in other countries. TIMSS data have been collected in 1995, 1999, 2002, 2007, and 2011.

Highlights from TIMSS 2007: International Center for Education Statistics

The 2007 Trends in International Mathematics and Science Study (TIMSS) is the fourth administration since 1995 of this international comparison. This report focuses on the performance of U.S. students relative to that of their peers in other countries in 2007, and on changes in mathematics and science achievement since 1995.

OECD Programme for International Student Assessment (PISA) Study

All students take pencil-and-paper tests, with assessments lasting a total of two hours for each student. For the PISA 2009 assessment, some participating countries/economies have also opted for an assessment of the reading of electronic texts.

First Results from PISA 2003

The PISA test is a very rigorous test for 15 year olds and focused on mathematical application. You can also consult the publication 'Take the Test' which lists all the publicly released items from the first three assessments (PISA 2000, 2003 and 2006).

The National Assessment of Educational Progress (NAEP) 2011 Report

National Center for Education Statistics

NAEP is the largest nationally representative and continuing assessment of what America's students know and can do in various subject areas. Assessments are conducted periodically in mathematics, reading, science, writing, the arts, civics, economics, geography, and U.S. history.

Teaching Geometry According to the Common Core Standards

by H. Wu January 2012

This document is a collection of grade-by-grade mathematical commentaries on the teaching of the geometry standards in the Common Core State Standards from grade 4 to high school. The emphasis is on the progression of the mathematical ideas through the grades.

Improving Mathematical Problem Solving in Grades 4 Through 8

The goal of this practice guide is to offer educators specific, evidence-based recommendations that address the challenge of improving mathematical problem solving in grades 4 through 8. The guide provides practical, clear information on critical topics related to improving mathematical problem solving and is based on the best available evidence as judged by the authors.

Go back to the Math Toolkit