math expressions

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

Heinemann's *Math Expressions* is a comprehensive, coherent, cumulative, rigorous, balanced, and research-based mathematics program for Grades K–6. At the heart of *Math Expressions* is the building of a math-talk community in which students reach their learning destination—the ability to use formal math methods with understanding and with fluency.

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: Mathematica Policy Research

EVIDENCE CRITERIA | STUDY EVIDENCE & HIGHLIGHTS

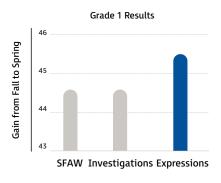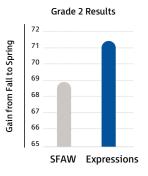| EVIDENCE CRITERIA	STUDY EVIDENCE & HIGHLIGHTS
Well-designed & well-implemented experimental study or Randomized Control Trial (RCT)	An experimental RCT study, where schools were randomly assigned to use one of four curricula: *Math Expressions*, Saxon Math, Scott Foresman-Addison Wesley (SFAW), or Investigations in Numbers, Data, and Space. 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, with over 80% of teachers covering at least 80% of the *Math Expressions* lessons during the academic year.
Large & multi-site sample	*Math Expressions* was studied in 12 districts throughout the U.S. The sample was not a nationally representative sample, but it 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; 38% Caucasian 2% Asian; 1% American Indian/ Native Alaskan
- 50% Free/reduced-price meals

Shows statistically significant & positive effects

The results of the hierarchical linear modeling indicated that students in schools randomly assigned to use *Math Expressions* had significantly greater math achievement as measured by math assessment designed for the Early Childhood Study-Kindergarten Class of 1998–99 (ECLS-K).

Grade 1 Results — Gain from Fall to Spring (SFAW, Investigations, Expressions)

Grade 2 Results — Gain from Fall to Spring (SFAW, Expressions)

To learn more about the research behind *Math Expressions*, visit **heinemann.com/mathexpressions**

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