Effectiveness

No studies of *Investigations in Number, Data, and Space®* that fall within the scope of the Elementary School Math review protocol meet What Works Clearinghouse (WWC) evidence standards. The lack of studies meeting WWC evidence standards means that, at this time, the WWC is unable to draw any conclusions based on research about the effectiveness or ineffectiveness of *Investigations in Number, Data, and Space®*.

Program Description

*Investigations in Number, Data, and Space®,* published by Pearson Scott Foresman, is an activity-based K–5 mathematics curriculum. It is designed to help all students understand the fundamental ideas of number and operations, geometry, data, measurement, and early algebra. The curriculum encourages students to use prior knowledge to develop an understanding of fundamental mathematical ideas. *Investigations in Number, Data, and Space®* is problem-centered and de-emphasizes algorithms.

Rather, the curriculum focuses on activities that encourage students to develop their own strategies for solving problems and engage in discussion about their reasoning and ideas. The curriculum at each grade level is organized into units that offer from two to eight weeks of work focused on a particular content strand, and students work in a variety of groupings, including whole class, individually, in pairs, and in small groups.

The WWC identified 40 studies of *Investigations in Number, Data, and Space®* that were published or released between 1994 and 2008.

Seven studies are within the scope of the review protocol and have an eligible design, but do not meet WWC evidence standards because they do not establish that the comparison group was comparable to the treatment group prior to the start of the intervention.

Seven studies are out of the scope of the review protocol because they have an ineligible study design that does not meet WWC evidence standards, such as having no comparison group.

Twenty-six studies are out of the scope of the Elementary School Math review protocol for reasons other than study design.

- Two studies were conducted outside the geographic area specified in the protocol.
- Twenty studies do not assess students’ math achievement or are not studies of the effectiveness of *Investigations in Number, Data, and Space®*.
- Four studies are literature reviews or meta-analyses in which the author does not conduct a primary analysis of the effectiveness of *Investigations in Number, Data, and Space®*.

1. The descriptive information for this curriculum was obtained from a publicly-available source at http://investigations.terc.edu, downloaded October 2008. The WWC requests developers to review the description for accuracy from their perspective. Further verification of the accuracy of the descriptive information for this curriculum is beyond the scope of this review.
References

Studies that fall outside the Elementary School Math protocol or do not meet evidence standards


**Additional sources:**


Feger, S., & Zibit, M. (2005). The role of facilitation in online professional development: Engendering co-construction of knowledge. Providence, RI: The Education Alliance at Brown University. The study is ineligible for review because it does not include a student outcome.


References (continued)


Heinerikson, L. (2006). *The effects of Scott Foresman’s mathematical Investigations curriculum on elementary standardized test scores.* Unpublished master’s thesis, Northwest Missouri State University, Maryville, MO. The study does not meet WWC evidence standards because the intervention and comparison groups are not shown to be equivalent at baseline.


Additional sources:


because the intervention and comparison groups are not shown to be equivalent at baseline.

**Additional sources:**


Mokros, J. (2003). Learning to reason numerically: The impact of *Investigations*. In S. L. Senk & D. R. Thompson (Eds.), *Standards-based school mathematics curricula: What are they? What do students learn?* (pp. 109–131). Mahwah, NJ: Lawrence Erlbaum Associates. (This reference is for one of three separate studies included in the section: third- and fourth-grade students’ number skills.) The study does not meet WWC evidence standards because the intervention and comparison groups are not shown to be equivalent at baseline.


Mokros, J. (2003). Learning to reason numerically: The impact of *Investigations*. In S. L. Senk & D. R. Thompson (Eds.), *Standards-based school mathematics curricula: What are they? What do students learn?* (pp. 109–131). Mahwah, NJ: Lawrence Erlbaum Associates. (This reference is for one of three separate studies included in the section: children’s construction of number sense.) The study does not meet WWC evidence standards because the intervention and comparison groups are not shown to be equivalent at baseline.

Noble, T., Nemirovsky, R., Wright, T., & Tierney, C. (2001). Experiencing change: The mathematics of change in multiple environments. *Journal for Research in Mathematics Education, 32*(1), 85–108. The study is ineligible for review because it does not use a comparison group.


Erlbaum Associates, Inc. The study is ineligible for review because it does not include an outcome within a domain specified in the protocol.

Ross, L. G. (2003). The effects of a standards-based mathematics curriculum on fourth and fifth grade achievement in two Midwest cities. *Dissertation Abstracts International, 64*(04), 1180A. (UMI No. 3088273) The study is ineligible for review because it does not use a comparison group.


