What Works Clearinghouse

ies INSTITUTE OF EDUCATION SCIENCES

Progress in Mathematics © 2006

Program description

Progress in Mathematics © 2006 is a new core curriculum for students in kindergarten through grade 6. *Progress in Mathematics © 2006* differs substantively from *Progress in Mathematics © 2000* in both content and assessment material. *Progress in Mathematics © 2006* uses a sequence of systematic lesson plans to teach mathematical concepts and skills. It incorporates the following features at each grade level: explicit instruction of mathematics content; development of conceptual understanding through a three-step process that begins with hands-on activities (concrete thinking to visual thinking to symbol use); fluency in numerical computation; problem solving; development of mathematical vocabulary; practice and review; and different types of assessment. Student textbooks, student workbooks, and teacher's editions are available for each grade level, as well as manipulatives and online practice exercises.

Research

One study of *Progress in Mathematics © 2006* met the What Works Clearinghouse (WWC) evidence standards. The study included 186 first grade students in eight classrooms across four schools located in New York and Pennsylvania.[1]

The WWC considers the extent of evidence for *Progress in Mathematics © 2006* to be small for math achievement.

Effectiveness

Progress in Mathematics © 2006 was found to have no discernible effects on math achievement.

	Math achievement
Rating of effectiveness	No discernible effects
Improvement index[2]	Average: +3 percentile points Range: –17 to +22 percentile points

1. The evidence presented in this report is based on available research. Findings and conclusions may change as new research becomes available.
2. These numbers show the improvement index for the one finding in the study used for the rating.

Additional program information

Developer and contact

Developed and distributed by Sadlier-Oxford, a division of William H. Sadlier, Inc. Address: William H. Sadlier, Inc., Sadlier-Oxford Division, 9 Pine Street, New York, NY 10005. Email: CustomerService@sadlier.com. Web: www.sadlier-oxford.com/math/index.cfm. Telephone: (800) 221-5175.

Scope of use

The original *Progress in Mathematics* curriculum was developed in the 1940s by the Sisters, Servants of the Immaculate Heart of Mary. William H. Sadlier, Inc. has published the program for more than 60 years. Earlier versions of the program have been used in many Catholic elementary schools across the country, but specific information is not available on the number or demographics of students, schools, or districts using *Progress in Mathematics © 2006*.[3]

Teaching

As part of the *Progress in Mathematics © 2006* curriculum, students work with a textbook and a companion workbook to learn a variety of math content, including number and arithmetic operations, pre-algebraic thinking, geometry, data and statistics, logic, and estimation. Each lesson of *Progress in Mathematics © 2006* features Math Words, identifying new math vocabulary words for the lesson; a mixture of computational exercises; a "Talk It Over" feature designed to help children learn to summarize the teaching and communicate it mathematically; and a special feature, such as Mental Math (doing calculations without physical aids such as paper and pencil), at the end of the lesson.

Teachers receive a pre-implementation orientation and ongoing instructional and technical support in person or by phone from the developer. In addition, an interactive website is available for students and teachers, which includes further practice and enrichment and teaching tips.

Cost

A two-volume set of student textbooks for *Progress in Mathematics © 2006* costs $30.69; a single-volume student textbook costs $28.95. The e-book version of the student textbook costs $28.95. The teaching manual costs $98.85. Additional materials include a student workbook ($7.98), a teacher's edition of the workbook ($12.00), a student test booklet ($42.00), a teacher's edition of the student test booklet ($12.00), an additional practice/test generator CD-ROM ($147.00), and a manipulatives package ($21.00).

Research

One study reviewed by the WWC investigated the effects of *Progress in Mathematics © 2006*. This study (Beck Evaluation & Testing Associates, 2005) was a randomized controlled trial that met WWC evidence standards.

The Beck Evaluation & Testing Associates (2005) study included 186 first-grade students in eight classrooms across four schools. Three schools were located in New York, and one school in Pennsylvania. Each school identified two first grade classrooms for the study: one classroom was randomly assigned to the intervention group and the other assigned to the comparison group. Thus there were a total of four classrooms in the intervention group and four classrooms in the comparison group. The intervention classrooms used a pre-publication comparison of the *Progress in Mathematics © 2006* program. The comparison classrooms used the earlier and substantively different © 2000 version of *Progress in Mathematics.*

Extent of Evidence

The WWC categorizes the extent of evidence in each domain as small or moderate to large (see the What Works Clearinghouse

3. This intervention report regards *Progress in Mathematics © 2006* as a different program from *Progress in Mathematics © 2000.* The WWC team compared the text books of both programs and found them to differ extensively in terms of content, assessment materials, organization, and presentation. Information received from the developer confirmed this difference between programs.

Extent of Evidence Categorization Scheme). The extent of evidence takes into account the number of studies and the total sample size across the studies that met WWC evidence standards with or without reservations.[4]

The WWC considers the extent of evidence for *Progress in Mathematics © 2006* to be small for math achievement.

Effectiveness

Findings

The WWC review of interventions for elementary school math addresses student outcomes in one domain: mathematics achievement.

The Beck Evaluation & Testing Associates (2005) study reported a statistically significant positive effect of the *Progress in Mathematics © 2006* program on the Terra Nova Mathematics Test (referred to in the study as Part 1); however, this effect was not statistically significant according to WWC analysis. The study reported no statistically significant effect on the Terra Nova Mathematics Computation Test (referred to in the study as Part 2). The average effect size across the two student outcomes was neither statistically significant nor large enough to be considered substantively important according to WWC standards (at least 0.25).

In sum, one study of *Progress in Mathematics © 2006* found no discernible effects on students' math achievement.

Rating of effectiveness

The WWC rates the effects of an intervention in a given outcome domain as: positive, potentially positive, mixed, no discernible effects, potentially negative, or negative. The rating of effectiveness takes into account four factors: the quality of the research design, the statistical significance of the findings,[5] the size of the difference between participants in the intervention and the comparison conditions, and the consistency in findings across studies (see the WWC Intervention Rating Scheme). The WWC found *Progress in Mathematics © 2006* to have no discernible effects for math achievement.

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Improvement index

The WWC computes an improvement index for each individual finding. In addition, within each outcome domain, the WWC computes an average improvement index for each study and an average improvement index across studies (see Technical Details of WWC-Conducted Computations). The improvement index represents the difference between the percentile rank of the average student in the intervention condition versus the percentile rank of the average student in the comparison condition. Unlike the rating of effectiveness, the improvement index is based entirely on the size of the effect, regardless of the statistical significance of the effect, the study design, or the analyses. The improvement index can take on values between –50 and +50, with positive numbers denoting results favorable to the intervention group.

The average improvement index for mathematics achievement is +3 percentile points with a range of –17 to +22 percentile points in the single study reviewed.

Summary

The WWC reviewed one study on *Progress in Mathematics © 2006*. This single study met WWC evidence standards. Based on this study, the WWC found no discernible effects in the math achievement domain. The evidence presented in this report is limited and may change as new research emerges.

4. The Extent of Evidence Categorization was developed to tell readers how much evidence was used to determine the intervention rating, focusing on the number and size of studies. Additional factors associated with a related concept, external validity, such as students' demographics and the types of settings in which studies took place, are not taken into account for the categorization.
5. The level of statistical significance was reported by the study authors or, where necessary, calculated by the WWC to correct for clustering within classrooms or schools and for multiple comparisons. For an explanation, see the WWC Tutorial on Mismatch. See Technical Details of WWC-Conducted Computations for the formulas the WWC used to calculate the statistical significance. In the case of *Progress in Mathematics © 2006,* corrections for clustering and multiple comparisons were needed.

References

Met WWC evidence standards

Beck Evaluation & Testing Associates, Inc. (2005). *Progress in Mathematics © 2006: Grade 1 pre-post field test evaluation study.* New York: Sadlier-Oxford Division, William H. Sadlier, Inc.

For more information about specific studies and WWC calculations, please see the WWC *Progress in Mathematics © 2006* Technical Appendices.