

What Works Clearinghouse User Guide

- 1) Practice Guides: Tackle big themes, such as “Teaching Academic Content and Literacy to English Language Learners in Elementary and Middle School,” or “Helping Students Navigate the Path to College: What High Schools Can Do.” The practice guides address big picture issues that everyone is dealing with. They do not advocate for specific interventions but instead suggest promising strategies.
- 2) Intervention Reports: These reports rate the effectiveness, and extent of evidence, on a given program, practice, or policy. For example, “First Year Experience Courses for Students in Developmental Education” and “New Teacher Center Induction Model.”
- 3) Single Study Reviews: A review of an individual study that includes the WWC’s assessment of the quality of the research design and technical details about the study’s design and findings. These studies are a precursor for an intervention report.
- 4) Quick Reviews: Timely assessment of recently published research.

Publications & Products

11,325 studies reviewed!

Get started with free products from the WWC:

-  **Practice guides** help educators address classroom challenges.
-  **Intervention reports** guide evidence-based decisions.
-  **Single study reviews** examine research quality.
-  **Quick reviews** give the WWC's assessment of recent education research.



We are going to focus on **Practice Guides** and **Intervention Reports**...

Practice Guides: A WWC publication that presents recommendations for educators to address challenges in their classrooms and schools.

The screenshot shows the homepage of the What Works Clearinghouse (WWC) website. At the top, there is a green header with the WWC logo and the text "WHAT WORKS CLEARINGHOUSE". Below the header is a navigation menu with links: Home, About the WWC, Topics in Education, Publications & Products, Special Features, Resources, and Stay Connected. A search bar is located on the right side of the header.

The main content area features a large diagram titled "See the Revised Cluster Design Standards". The diagram illustrates a hierarchical structure starting from a "DISTRICT" at the top, which branches into three "School" levels (A, B, and C). Each school level further branches into "Classroom" levels, with School A having two classrooms (1 and 2), School B having two classrooms (3 and 4), and School C having two classrooms (5 and 6). Navigation arrows are visible at the bottom of the diagram.

To the right of the diagram is a section titled "Evidence for What Works in Education". It contains the following text:

Evidence for What Works in Education

We review the research on the different programs, products, practices, and policies in education.

Then, by focusing on the results from high-quality research, we try to answer the question "What works in education?"

Our goal is to provide educators with the information they need to make evidence-based decisions.



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The **studies database** contains all WWC-reviewed studies.

Or search by [topics in education](#).

Find What Works!



Based on the research evidence, find what works to...

- improve literacy skills in 3rd graders,
 - increase math achievement in preschoolers,
 - reduce dropout rates,
 - help students with special needs,
- ... or address your school's challenge!

WWC Fact Check: Test Your Knowledge...

There are ways to raise concerns about WWC reviews.

True False

What's New?

Subscribe to NewsFlash and stay updated!



New Math Report: University of Chicago School Mathematics Project Courses Have Potentially Positive Effects for Secondary Students
May 24

New Math Report: Saxon Algebra I Has No Discernible Effects on Algebra Achievement for



Example: Teaching Strategies for Improving Algebra Knowledge in Middle and High School Students

The screenshot shows the homepage of the What Works Clearinghouse (WWC) website. The header includes the IES logo and the text 'WHAT WORKS CLEARINGHOUSE'. A search bar is located in the top right corner. Below the header is a navigation menu with links for Home, About the WWC, Topics in Education, Publications & Products, Special Features, Resources, and Stay Connected. The main content area is titled 'Publications & Products' and contains a list of resource types: practice guides, intervention reports, single study reviews, quick reviews, and reference resources. A search box is prominently displayed, showing a search for 'Teaching Strategies for Improving Algebra Knowledge in Middle and High School Students' with 19 results. A blue arrow points to the first result, which is a practice guide from April 2015. To the right of the main content are three sidebars: 'Find what works based on the evidence', 'Handy Definitions' with a list of topics, and 'Top Downloads' with two featured documents.

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WHAT WORKS CLEARINGHOUSE

Enter search terms here

Home | About the WWC | Topics in Education | Publications & Products | Special Features | Resources | Stay Connected

Home

Publications & Products

Our goal is to provide educators with the information they need to make evidence-based decisions. Access this information through:

- practice guides** provide recommendations for educators
- intervention reports** summarize findings on an intervention
- single study reviews** assess one research study of findings on an intervention
- quick reviews** of recent research
- reference resources:**
 - the **Procedures and Standards Handbook**
 - our **Review Protocols**

Find WWC Publications & Products

Type keyword

All Topics Practice Guides

Search ? Reset Search

Sort By: Relevance

Showing 1 to 10 of 19 results. [Next 9](#)

Teaching Strategies for Improving Algebra Knowledge in Middle and High School Students
Practice Guide | April 2015

This practice guide provides three recommendations for teaching algebra to students in middle school and high school. Each recommendation includes implementation steps and solutions for common roadblocks. The recommendations also...

Additional Resource
Practice Guide Summary | July 2015

This six-page practice guide summary provides an overview of the three recommendations for teaching algebra to students in middle school and high school. See the research evidence at a glance.

Find what works based on the evidence.

Handy Definitions

- intervention report
- practice guide
- single study review
- quick review
- review protocol
- topic

[See the full glossary](#)

Top Downloads

- Assisting Students Struggling with Mathematics: Response to Intervention (RTI) for Elementary and Middle Schools
- Improving Reading Comprehension in Kindergarten Through 3rd Grade



When you click on the strategy you will view a summary, a video that summarizes the practice guide, and the full practice guide.

ies INSTITUTE OF EDUCATION SCIENCES **WHAT WORKS CLEARINGHOUSE** Enter search terms here

Home | About the WWC | Topics In Education | Publications & Products | Special Features | Resources | Stay Connected

Home > Topics > Math

Teaching Strategies for Improving Algebra Knowledge in Middle and High School Students

Summary

This practice guide provides three recommendations for teaching algebra to students in middle school and high school. Each recommendation includes implementation steps and solutions for common roadblocks. The recommendations also summarize and rate supporting evidence. This guide is geared toward teachers, administrators, and other educators who want to improve their students' algebra knowledge.

Practice Guide and Related Resources

The practice guide is accompanied by a practice guide summary and companion videos. The guide is also available in e-book format. Click below to access any of the available resources.

Teaching Strategies for Improving Algebra Knowledge in Middle and High School Students (6.3 MB)
Download the full version of this practice guide for evidence-based tips and expert advice on improving students' algebra knowledge.

Recommendations

Recommendation	Level of Evidence
1. Use solved problems to engage students in analyzing algebraic reasoning and strategies. <i>Source</i> - (4.5 MB)	Minimal
2. Teach students to utilize the structure of algebraic representations. <i>Source</i> - (4.5 MB)	Minimal
3. Teach students to intentionally choose from alternative algebraic strategies when solving problems. <i>Source</i> - (4.5 MB)	Moderate

Practice Guide Details

Released: April 2015
Topic: [Math](#)
Education Level: Middle Grades, High School
Audience: Administrator, Researcher, School Specialist, Teacher

Panel

Jon R. Star (Chair)
Harvard University

Anne Foegen
Iowa State University

Matthew R. Larson
Lincoln Public Schools

William G. McCallum
University of Arizona

Jane Porath
Traverse City Area Public Schools

Rose Mary Zbiek
Pennsylvania State University

Handy Definitions

- ▼ *level of evidence rating*
- ▼ *minimal evidence*
- ▼ *moderate evidence*
- ▼ *strong evidence*

See the [full glossary](#) ▶



Intervention Reports: A summary of findings of the highest-quality research on a given program, practice, or policy in education.

See the Revised Cluster Design Standards

Evidence for What Works in Education

We review the research on the different programs, products, practices, and policies in education.

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Or search by topics in education.

Find What Works!

Intervention	Topic	Improvement Index	Effectiveness Rating	Extent of Evidence
Fast Forward® Language	English Language Learners	0.7	+	Small
International Communication and Literatures Log	English Language Learners	0.5	+	Small

Based on the research evidence, find what works to...

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- increase math achievement in preschoolers,
- reduce dropout rates,
- help students with special needs,

... or address your school's challenge!

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[f](#) [t](#) [e](#) [p](#) [r](#)

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 May 24

New Math Report: Saxon Algebra I Has No Discernible Effects on Algebra Achievement for

There are two key ways to land on an intervention report. **First**, if you have a specific intervention, and you want to know if it works, you can look for that intervention by searching for its name. **Second**, if you don't have a specific intervention in mind, but you have a general problem that you would like to address, you can search by topic. The intervention reports are grouped into 15 topics.



- Scenario: An individual recommends to your superintendent that Saxon Math should be your schools next math curriculum. To learn more about Saxon Math you can use WWC to search specifically for that intervention by name.

The screenshot shows the homepage of the Institute of Education Sciences' What Works Clearinghouse. The navigation bar includes links for Home, About the WWC, Topics in Education, Publications & Products, Special Features, Resources, and Stay Connected. A search bar is located in the top right corner.

The main content area is titled "Publications & Products" and includes a mission statement: "Our goal is to provide educators with the information they need to make evidence-based decisions. Access this information through:"

- practice guides** provide recommendations for educators
- intervention reports** summarize findings on an intervention
- single study reviews** assess one research study of findings on an intervention
- quick reviews** of recent research
- reference resources:**
 - the **Procedures and Standards Handbook**
 - our **Review Protocols**

A search box titled "Find WWC Publications & Products" is highlighted with an orange circle. It contains the text "Saxon Math" and has dropdown menus for "All Topics" and "Intervention Reports". Below the search box are "Search" and "Reset Search" buttons. The results section shows two items:

- Saxon Math (Secondary Mathematics)** Intervention Report | May 2016. **Saxon Math** is a textbook series covering grades K–12 based on incremental development and continual review of mathematical concepts to give students time to learn and practice concepts throughout the year. The series is aligned with...
- Saxon Math (Elementary School Math)** Intervention Report | May 2013. **Saxon Math** is a textbook series covering grades K–12 based on incremental development and continual review of mathematical concepts to give students time to learn and practice concepts throughout the year. The series is aligned with...

On the right side of the page, there are several sidebar widgets:

- Find what works based on the evidence.** (Lightbulb icon)
- Handy Definitions** (Question mark icon) with a list of links: *intervention report*, *practice guide*, *single study review*, *quick review*, *review protocol*, and *topic*.
- See the full glossary** (Arrow icon)
- Recently Viewed** (Monitor icon) with the title "Teaching Strategies for Improving Algebra Knowledge in Middle and High School Students".
- Top Downloads** (Person icon) with two items: "Assisting Students Struggling with Mathematics: Response to Intervention (RTI) for Elementary and Middle Schools" and "Improving Reading Comprehension in Kindergarten Through 3rd Grade".



2) Scenario: Your school has a dropout problem that you need to address. You can use WWC to view the effectiveness of different interventions to address dropout by doing the following:

Find What Works!

Summarize and compare the evidence of the effectiveness of interventions that address your school or district's needs.

Find what works for...

Topic/Outcome Domains (Click to expand)

- Children and Youth with Disabilities (7)
- Dropout Prevention (19)
- Early Childhood Education (27)
- English Language Learners (11)
- Literacy (79)
- Math (39)
- Postsecondary Education (3)
- Science (5)
- Student Behavior (20)
- Teacher and Leader Effectiveness (3)

Select a topic/outcome to see more filters.

- Find what works for...
- reducing dropout rates for high school seniors,
 - children with special needs,
 - improving reading achievement for English language learners,
 - increasing math achievement,
- ... or select a topic or outcome and then customize your search.

Intervention	Topic	Implementation Fidelity	Effectiveness Rating	Direct Effects
Fast Forward® Language	English Language Learners	High	Strong	Small
International Communication and Collaboration Log	English Language Learners	High	Strong	Small
Read Flash!	English Language Learners	High	Strong	Small
Peer Tutoring and Response Strategy	English Language Learners	High	Strong	Small
Intervention Implementation Program for English Language Learners and Their Classmates (IPI)	English Language Learners	High	Strong	Small
Strategic Organizational Design and Reading and Comprehension (SOD)	English Language Learners	High	Strong	Small

View glossary and extended help.



You can complete the varying filters to narrow in on interventions that most closely address the specifics of your school.



Find What Works!

Summarize and compare the evidence of the effectiveness of interventions that address your school or district's needs.

Find what works for...
[Reset Search](#)

Topic/Outcome Domains
(Click on a domain to expand)

- Dropout Prevention (1)
- Completing school (1)**

Grade

- PK (0) 4 (0) 9 (0)
- K (0) 5 (0) 10 (0)
- 1 (0) 6 (0) 11 (1)
- 2 (0) 7 (0) 12 (1)
- 3 (0) 8 (0) PS (0)

Effectiveness Rating

- Positive or Potentially Positive (1)**
- Potentially Positive Effects (1)
- Mixed Effects/No Discernible (2)

Extent of Evidence

- Small (5)
- Medium to Large (1)**

Delivery Method

- Individual (1)
- Small Group (0)
- Whole Class (0)
- Whole School (0)

Program Type

- Curriculum (0)
- Supplement (1)
- Practice (0)
- School Level (0)
- Teacher Level (0)

Results. 1 Interventions found

Your filters: **Dropout Prevention** ✕ | **Completing school** ✕ | **Positive or Potentially Positive** ✕ | **Extent of Evidence – Medium to Large** ✕ | **Remove all** ✕

Results by Outcome Domain

[Research Details](#)

SORT BY *Improvement index: high to low* [Sort](#) [Print](#)

Jump to findings for: • [Completing school](#)

Completing school				
Intervention	Topic	Improvement Index	Effectiveness Rating	Extent Of Evidence
Talent Search	Dropout Prevention			Medium to Large



[▲ Top](#)

When you click on the report you can view findings on the effectiveness, a program description, rating of the research, and the full intervention report.

