

# Things to know about the IES professional learning community (PLC) facilitator's guide on mathematical problem solving



## What is it?

The facilitator's guide is a set of professional development materials designed to supplement the What Works Clearinghouse practice guide, *Improving Mathematical Problem Solving in Grades 4 Through 8*.<sup>1</sup>



[Download the practice guide here](#)



## Who is it for?

The facilitator's guide is for any professional development provider (e.g. coach, lead teacher) who facilitates groups of middle school math teachers in a PLC setting to learn and plan lessons based on the instructional strategies recommended in IES' Practice Guide, *Improving Mathematical Problem Solving in Grades 4 Through 8*.<sup>1</sup>



## What IES Practice Guide recommendations will participants learn about?

- Recommendation 3: **Teach students how to use visual representations.**
- Recommendation 4: **Expose students to multiple problem-solving strategies.**
- Recommendation 5: **Help students recognize and articulate mathematical concepts and notation.**



## What do featured experts have to say?

**Barbara Dougherty**, Director of Curriculum Research and Development at the University of Hawai'i Mānoa, provides a brief description of the *Improving Mathematical Problem Solving for Students in Grades 4 Through 8*.



[Watch the video here](#)

**John Woodward**, Professor and Dean in the School of Education, University of Puget Sound and Chair of the Panel for IES Practice Guide, *Improving Mathematical Problem Solving for Students in Grades 4 Through 8*, gives an introduction to Recommendation 3, including a description of the three How-to Steps for carrying out the recommendation.



[Watch the video here](#)



## Module overviews

The three modules in the facilitator's guide address the three Practice Guide recommendations. They are:

- **Module 1: Selecting and Using Visuals**  
This module teaches participants how to identify types of visuals, evaluate the appropriateness of visual representations, and how to develop and use think-alouds for showing students how to select visual representations.
- **Module 2: Comparing Worked Examples**  
This module focuses on developing questions that support students as they identify what is similar or different about the key mathematical concepts or skills in the solution methods they are comparing.
- **Module 3: Articulating Strategies**  
This module is focused on exploring probing questions that support students when explaining their solutions. Participants will learn strategies for getting students to share and explain their solutions for problem solving.

Each module contains two to four sessions. Each session lasts approximately 45-60 minutes.



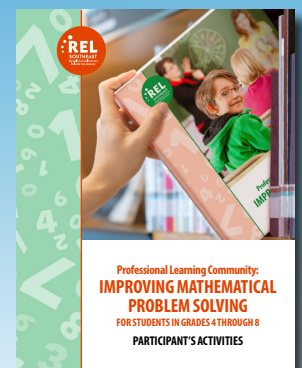
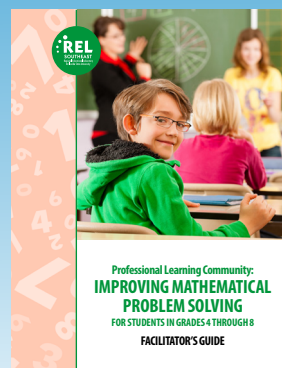
[See an overview of the facilitator's guide sessions here](#)



## Where are the materials available?



[Download the facilitator's guide and participant activities here](#)



1. Woodward, J., Beckmann, S., Driscoll, M., Franke, M., Herzig, P., Jitendra, A., Koedinger, K. R., & Ogbuehi, P. (2012). *Improving mathematical problem solving in grades 4 through 8: A practice guide* (NCEE 2012-4055). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. Retrieved from [http://ies.ed.gov/ncee/wwc/publications\\_reviews.aspx#pubsearch/](http://ies.ed.gov/ncee/wwc/publications_reviews.aspx#pubsearch/).

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