

Trics Teacher and Student Actions for Effective Mathematics Teaching and Learning

Build Procedural Fluency from Conceptual Understanding Effective teaching of mathematics builds fluency with procedures on a foundation of conceptual understanding so that students, over time, become skillful in using procedures flexibly as they solve contextual and mathematical problems.			
	What are teachers doing?		What are students doing?
	Providing students with opportunities to use their own reasoning strategies and methods for solving problems.		Making sure that they understand and can explain the mathematical basis for the procedures that they are using.
	Asking students to discuss and explain why the procedures that they are using work to solve particular problems.		Demonstrating flexible use of strategies and methods while reflecting on which procedures seem to work best for specific types of problems.
	Connecting student-generated strategies and methods to more efficient procedures as appropriate.		Determining whether specific approaches generalize to a broad class of problems.
	Using visual models to support students' understanding of general methods.		Striving to use procedures appropriately and efficiently.
	Providing students with opportunities for distributed practice of procedures.		



National Council of Teachers of Mathematics. (2014). *Principles to actions: Ensuring mathematical success for all*. Reston, VA: Author.

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