

Correspondence to NCTM *Principles to Actions* Teaching Practices

How Do Walch Problem-Based Tasks Address the NCTM *Principles to Actions* Mathematics Teaching Practices?

Walch’s Problem-Based Tasks were designed by experienced educators and curriculum developers, informed by best-practice research, and refined through an iterative process of implementation and feedback. Together with professional development, these materials support and sustain good teaching practices.

NCTM Mathematics Teaching Practices	Relevant Attributes of Walch Integrated Math Resources
Establish mathematics goals to focus learning.	Each Problem-Based Task (PBT) addresses specified standards which can be used as goals to focus learning.
Implement tasks that promote reasoning and problem solving.	Each PBT is set in a meaningful real-world context and designed to promote reasoning and problem solving.
Use and connect mathematical representations.	PBTs often require students to use and connect equations, tables, and/or graphs in order to solve problems and support their solutions
Facilitate meaningful mathematical discourse.	PBTs provide rich opportunities for classroom discourse. The presentation of alternative strategies and solutions, along with clarifying and extending questions from peers and teachers, represents meaningful discussion of mathematics. Coaching questions and suggested solutions may offer additional stimulation for discourse. Please note: Mathematical discourse is an important topic for professional development, in conjunction with implementation of these materials.
Pose purposeful questions.	The coaching questions provide samples of purposeful questions. Note that this is another important topic for professional development.
Build procedural fluency from conceptual understanding.	The PBTs help to develop conceptual understanding through application, and may provide additional opportunities to practice and develop fluency where repeated calculations or procedures are needed to work through a problem.
Support productive struggle in learning mathematics.	The PBTs require “productive struggle;” coaching questions provide an option for additional support as appropriate, allowing students to proceed through the task and ensuring that the struggle remains productive rather than too frustrating.
Elicit and use evidence of student thinking.	PBTs require students to display their thinking. Professional development supports teachers in using that evidence to respond in instructionally appropriate ways.