

# 10 Best Practices in Mathematics Instruction

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| <b>Opportunity to Learn</b>   | The extent of students' opportunity to learn mathematics content bears directly and decisively on student mathematics achievement.   |
| <b>Focus on Meaning</b>   | Focusing instruction on the meaningful development of important mathematical ideas increases student learning.   |
| <b>Learning New Concepts and Skills While Solving Problems</b>      | Students can learn both concepts and skills by solving problems.   |
| <b>Opportunities for both Invention and Practice</b>                | Giving students both an opportunity to discover and invent new knowledge and an opportunity to practice what they have learned improves student achievement.   |
| <b>Openness to Student Solution Methods and Student Interaction</b> | Teaching that incorporates students' intuitive solution methods can increase student learning, especially when combined with opportunities for student interaction and discussion.                   |
| <b>Small-Group Learning</b>   | Using small groups of students to work on activities, problems, and assignments can increase student mathematics achievement.  |
| <b>Whole-Class Discussion</b>                                       | Whole-class discussion following individual and group work improves student achievement.   |
| <b>Number Sense</b>   | Teaching mathematics with a focus on number sense encourages students to become problem solvers in a wide variety of situations and to view mathematics as a discipline where thinking is important. |
| <b>Concrete Materials</b>   | Long-term use of concrete materials is positively related to increases in student mathematics achievement and improved attitudes toward mathematics.   |
| <b>Student Use of Calculators</b>                                   | Using calculators in the learning of mathematics can result in increased achievement and improved student attitudes.   |

Cawelti, Gordon. *Handbook of Research on Improving Student Achievement*, Third Edition. Educational Research Service, copyright 2004.