Contents

Introduction and Overview	1
NEIL DAVIDSON	
An introduction to and overview of cooperative learning in	
mathematics, with key questions to orient the reader.	
1. The Math Solution: Using Groups of Four MARILYN BURNS	21
Problem solving and exploration with manipulative materials in groups of four (elementary).	
2. Finding Out About Complex Instruction: Teaching Math and Science in Heterogeneous Classrooms	47
RACHEL A. LOTAN AND JOAN BENTON	
A bilingual integrated math/science program addressing	
classroom status problems (elementary).	
3. Student Team Learning in Mathematics	69
ROBERT E. SLAVIN	
Team learning approaches for mastery of facts and skills, based upon individual accountability and team recognition (general).	
4. Using Cooperative Learning in Math DAVID W. JOHNSON AND ROGER T. JOHNSON A general conceptual model of cooperative learning with a detailed discussion of its basic elements (general).	103

5. Cooperative Learning and Computers in the Elementary and Middle School Math Classroom MARY MALE	126
Three cooperative learning strategies applied to the use of computers in the math classroom (elementary and middle schools).	
6. Cooperation in the Mathematics Classroom: A User's Manual	160
ROBERTA L. DEES	
A variety of cooperative learning activities to help teachers and students begin classroom cooperation (general).	
7. Small-Group Learning in the	
Secondary Mathematics Classroom	201
CALVIN D. CRABILL	
Procedures for group problem solving and inquiry in algebra,	
geometry, and algebra II/trigonometry (secondary).	
8. Real Maths in Cooperative Groups	_
in Secondary Education	228
JAN TERWEL	
Cooperation in small groups in heterogeneous classes in the	
Netherlands using maths in real-life situations (secondary).	
9. Integrating Computers as Tools in	
Mathematics Curricula (Grades 9-13):	
Portraits of Group Interactions	265
CHARLENE SHEETS AND M. KATHLEEN HEID	
Group interactions in algebra and calculus using computers as	
tools for mathematical explorations and problem solving	
(secondary and college).	
10. Cooperative Learning Using a Small-Group	
Laboratory Approach	295
JULIAN WEISSGLASS	
Free exploration and guided discovery in cooperative groups using	
a variety of concrete models (general).	

11. The Small-Group Discovery Method in Secondary- and College-Level Mathematics NEIL DAVIDSON	335
Procedures for guided discovery in cooperative groups with	
examples from calculus (secondary and college).	
12. Implementing Group Work: Issues	
for Teachers and Administrators	362
LAUREL ROBERTSON, NANCY GRAVES,	
AND PATRICIA TUCK	
Issues affecting the use of cooperative learning in mathematics	
with emphasis on teachers' decision making and factors affecting	
implementation (general).	
Appendix	
Sponsoring Organizations	380
Questionnaire Responses from Classroom Teachers	382
Resource Materials	399