THE IMPACT OF THE LEAD TEACHER PROFESSIONAL LEARNING COMMUNITY WITHIN THE RICE UNIVERSITY MATHEMATICS LEADERSHIP INSTITUTE	
J. Sack and N. Kamau	141
UNDERSTANDING ELEMENTARY TEACHERS' USE OF SCIENCE TEACHING TIME: LESSONS FROM THE BIG SKY SCIENCE PARTNERSHIP R. Jones and E. Swanson	163
PART II: Regular Journal Features	
HELPING KINDERGARTENERS MAKE SENSE OF NUMBERS TO 100 L.B. Jaslow and V.R. Jacobs	195
MATHEMATICS SPECIALISTS INCREASINGLY APPRECIATED AND SOUGHT	
D. Blount and J. Singleton	215
FORMULATING A STATE APPROACH TO PROFESSIONAL DEVELOPMENT R.E. Howard, S. Sarani and J. Woods	223
CONNECTING MATHEMATICS AND THE APPLIED SCIENCE OF ENERGY CONSERVATION	222
R.E. Carbone and J.M. Pearce	233
LET'S OBSERVE! S. W. Brown	245

## CONTENTS Volume 11

## PART I: "Mathematics and Science Partnership Institutes"

BUILDING MIDDLE-LEVEL MATHEMATICS TEACHERS' CAPACITIES AS TEACHERS AND LEADERS: THE MATH IN THE MIDDLE INSTITUTE PARTNERSHIP	
R. M. Heaton, W. J. Lewis and W. M. Smith	1
UNDERSTANDING TEACHER LEADERSHIP IN MIDDLE SCHOOL MATHEMATICS: A COLLABORATIVE RESEARCH EFFORT J. E. Pustejovsky, J. P. Spillane, R. M. Heaton and W. J. Lewis	19
THE PENN SCIENCE TEACHER INSTITUTE: A PROVEN MODEL C. Blasie and J. Butler-Kahle	41
OREGON MATHEMATICS LEADERSHIP INSTITUTE PROJECT: EVALUATION RESULTS ON TEACHER CONTENT KNOWLEDGE, IMPLEMENTATION FIDELITY, AND STUDENT ACHIEVEMENT D. Weaver and T. Dick	57
DEVELOPING LEADERSHIP IN A NATIONAL COHORT OF SECONDARY BIOLOGY TEACHERS: USES OF AN ON-LINE COURSE STRUCTURE TO DEVELOP A GEOGRAPHICALLY DISTANT PROFESSIONAL LEARNING COMMUNITY  P. Balcerzak, V. May, and B. Schaal	85
THE IMPACT OF EARLY POSITIVE RESULTS ON A MATHEMATICS AND SCIENCE PARTNERSHIP: THE EXPERIENCE OF THE INSTITUTE FOR CHEMISTRY LITERACY THROUGH COMPUTATIONAL SCIENCE K. S. Murray, M.A. Henry, and M. C. Hogrebe	95
K-5 MATHEMATICS SPECIALISTS' TEACHING AND LEARNING ABOUT FRACTIONS  J. W. Whitenack and A. J. Ellington	109
VIRGINIA'S MATHEMATICS SPECIALIST INSTITUTE PROJECT: A SUMMARY OF EVALUATION FINDINGS	
P.S. Smith and M. Wickwire	127