

Table of Contents

Introduction	1
Part I. Connecting the Ideal with the Real	3
Idealism vs. Realism.	8
Children's Views of Mathematics as a Set of Arbitrary Procedures	9
What is Problem Solving?	10
Part II. Toward a Broader Concept of Problem Solving	13
General Problem Solving	13
Mathematical Problem Solving	13
Problem Solving 1	16
Depending on Clues	16
Solving One Problem May Create Another	16
When Do You Use Which Formula?	17
Social Management	17
Getting "Testwise"	17
Problem Solving 2	17
Recognition of the Triangular Numbers	19
A Child's Social Decision Making	19
Teaching About Area	20
A Teacher's Social Problem	20
A Project From Home	21
Part III. Understanding that Arithmetic Procedures are not Arbitrary	24
The Importance of Problem Solving 1	24
The Importance of Problem Solving 2	25
How Problem Solving 2 May Turn into Problem Solving 1	26
Turning Problem Solving 1 into Problem Solving 2	30
Too Much Specification	32
Discussing Equivalent Methods	36
A Place Value Shortcut	41
Planning Time for Problem Solving 2.	42
Place Value and Counting Again	45
What Happens When Mathematics Gets More Complex?.	49
Benny's View of Adding Decimals	50
Mat's Ideas about Adding Fractions	51
Tina's Views of Multiplication and Division	52
What is the Middle Grade Teacher To Do?	53
Conclusions	55
References and Recommended Readings	58
Practical Pointers Which Can Be Found in the Text	66