TABLE OF CONTENTS

FOREWORD

INTRODUCTION i

START THEM THINKING

1. TWO PLUS TWO EQUALS MORE: Active Listening 2
2. WATCH US WORK!: Group Interaction 4
3. SEARCH FOR SOMEBODY: Active Listening and Interaction 6
4. OPEN AND CLOSED DOOR QUESTIONS: Questioning Strategies 8

START THEM THINKING CRITICALLY

5. CAN SALLY TALLY?: Organizing Information 12
6. A HANDFUL OF COINS: Organizing Information for Analysis 14
7. CLAY IS MORE THAN PLAY: Attribute Identification 16
8. WHOSE SHOES?: Attribute Identification 18
9. WHEN YOU'RE IN, YOU'RE IN
   WHEN YOU'RE OUT, YOU'RE OUT: Analyzing for Critical Attributes 19
10. PATH OF PATTERNS: Perceiving Patterns 21
11. WHEN TO VENN?: Comparing and Contrasting 24
12. I DID A GRID: Comparing and Contrasting 26
13. LEAVE THE LEAVES TO US: Classification 29
14. PICK YOUR PATTERNS: Patterning (Matrix) 31
15. CAN'T WRITE, BUT CAN REPORT: Reporting for Analysis 33
16. ELVES TO GIANTS
    MINNOWS TO WHALES: Ordering 35
17. SHOW THE FLOW: Sequencing 37
18. NUMBER 1: Prioritizing 39
19. THE GREATEST, THE BIGGEST,
    THE SWEETEST: Analysis of Bias 41

START THEM THINKING CREATIVELY

20. A BETTER UMBRELLA: Brainstorming 44
21. LEG'S GO PIGGYBACKING: Finding Relationships 46
22. A STORM OF IDEAS: Brainstorming 48
23. I'M AN EXPERT: Brainstorming 49
24. CARE, FEEDING AND TRAINING:
    OF A PET THESAURUS: Generating Ideas 51
25. START WITH ME (MAPPING EVERYONE): Organizing Information 53
26. WRITING IS IDEA SHARING: Generating Ideas 55
27. WHITE OUT: Visualization 57
28. EDIBLE ESTIMATING: Estimating 59
29. I PREDICT: Prediction 61
30. BECOME THE THING: Personification 63

31. YOU'RE "IN FER" A BIG SURPRISE: Inferring 65
32. THE BIG IDEA: Generalizing 67
33. MEETING METAPHOR: Making Analogies 70

START THEM PROBLEM SOLVING AND DECISION MAKING
34. CANNED COLLECTIBLES: Problem Solving (Maths) 74
35. SHOE BOX CURRICULUM: Higher Order Processes (Language Arts) 77
36. TWENTY PAIRS = TWENTY LINES: Problem Solving 79
37. IT'S A PROBLEM: Problem Solving 81
38. THE HUMAN GRAPH: Decision Making 83

BIBLIOGRAPHY 85

INTRODUCTION

Before you dive into the activities presented here to start them thinking, I want to suggest a rationale for the thinking focus, and provide a brief overview of the key elements of the thinking classroom. In addition, I will provide an outline of the lesson format and suggest how to use this book to start very young children thinking.

Twenty years ago, Alvin Toffler startled the literary community with his best seller, *Future Shock.* In that document he boldly predicted the skills needed by the students of the future. He stated that students need the skills of:

- **Learning to learn**
- **Learning to relate**
- **Learning to choose**

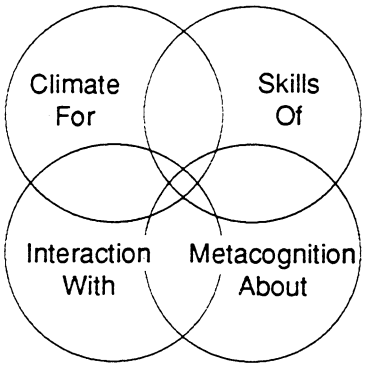
Today, we see the educational community focusing on these very skills. Metacognitive processing helps students learn about their learning and think about their thinking. Co-operative learning models stress social skills as students engage in team efforts. And, finally, information-processing models stressing problem solving and decision making are pervading the curricula from primary schools to universities.

What does this mean to me? Well, simply put, thinking teachers have thinking classrooms. To engage children in more complex cognitive processing, co-operative social behaviors, and a predisposition to lifelong learning, the teacher considers four key questions:

1. How do I set the climate for a thinking environment?
2. What are the thinking skills embedded in my curriculum and how do I teach the explicit skills as thinking?
3. How will I structure student interaction with other students and with the materials to foster thinking?
4. How will I lead children to think about their thinking metacognitively?

Let's look at these four areas more closely.

THE THINKING CLASSROOM



Setting the CLIMATE for Thinking:

- ☐ Is the room arranged to encourage student interaction?
- ☐ Am I visible and available?
- ☐ Am I asking how and why questions that require in-depth, and extended student responses?
- ☐ Do I use the wait-time, a 3-second pause after asking questions, and following student responses to allow time for thinking?

Teaching EXPLICIT SKILLS of Thinking:

- ☐ Am I identifying the thinking skills inherent in my curriculum?
- ☐ Am I taking advantage of the "teachable moments" by developing these thinking skills explicitly?
- ☐ Am I asking students to generate ideas with creative thinking skills: brainstorming, predicting, visualizing and associating?
- ☐ Am I asking students to evaluate ideas with critical thinking skills: classifying, comparing and contrasting, and sequencing?

STRUCTURED INTERACTION with Co-operative Thinking:

- ☐ Am I utilizing think/pair/share strategies?
- ☐ Am I structuring interdependent co-operative groups and focusing on social behaviors?
- ☐ Am I using a repertoire of individualistic, competitive and co-operative models of interaction?
- ☐ Am I using graphic organizers and mnemonic devices to help students interact with the material? (Venn diagrams, webs, matrices)

PROCESSING METACOGNITIVELY about Thinking:

☐ Are students required to plan, monitor and evaluate their own behavior?

☐ Am I asking questions that lead students into reflective thinking:

- What did you do well?
- What would you do differently next time?

☐ Am I using logbooks or work folders to document changes in student thinking over time?

☐ Are student thinking patterns becoming visible through discussion strategies and instructional techniques?

HOW TO USE THIS BOOK

With this broad framework in mind, the activities in *Start Them Thinking* have been divided into four major areas:

1. Start Them Thinking
2. Start Them Thinking Critically
3. Start Them Thinking Creatively
4. Start Them Problem Solving and Decision Making

Activities in the first section, Start Them Thinking, focus on readiness which lays the groundwork for future sessions. Active listening strategies, co-operative skills and questioning techniques provide the curriculum emphasis for these early sessions.

Start Them Thinking Critically provides 15 activities that cause analytical and evaluative mental processing by the youngsters. The lessons in this section are concerned with organizing and analyzing information, comparing, contrasting, classifying, sequencing and prioritizing.

Just as students are led to think critically in the second set of activities, Start Them Thinking Creatively leads students into generative and productive mental processes. This third section develops activities that ask students to behave creatively by brainstorming, visualizing, personifying, inferring and using analogies.

Finally, Start Them Problem Solving and Decision Making activities focus on the integration of both critical, analytical skills and creative, generative skills into the more complex processes of problem solving and decision making.