

Introduction

Several years ago, I had an experience that changed my personal and professional life. I was invited to participate in a project about second-grade math instruction—an invitation that included attending a monthly workshop that focused on a specific mathematical unit of study geared especially for second graders. During each workshop, I had the chance to become familiar with an instructional unit and I was encouraged to try out the activities back in my classroom. The workshops also included rich discussions about how children learn mathematics.

My professional life changed because participating in the project gave me the support I needed to present a math curriculum that was cohesive and developmentally appropriate. I learned how to surround my students with concepts, allowing them to develop understanding over time. The units matched my sense of what was right for children and added depth to the attempts I had already been making to help my students become confident, flexible problem solvers.

My personal life changed because I no longer had to spend every Sunday night anxiously trying to figure out what to do in the coming week with my students in mathematics. I no longer was plagued by such thoughts as, “Nancy, you’re not prepared.” “You feel uneasy because you don’t really know if you’re headed in the right direction.” “You can’t go to movies; you have to figure out what to do during math next week!”

My hope is that this book will give you some of the same support that I experienced through my participation in the second-grade project. I hope that it will make your teaching easier and less fraught with doubt as you go about the sometimes lonely job of crafting a year-long math program for your students. This book may also broaden your definition of what a problem-solving curriculum in mathematics can be, building on the assumption that students retain what they understand, and that they are most likely to understand concepts that are developed in a learning environment that provokes thinking and encourages interest and perseverance.

The book is meant as a general guide for yearlong planning, not as a blueprint to follow in a lockstep manner. The chapters follow the months of the school year and offer suggestions for topics to be covered from fall to spring. I've tried to provide a basic structure that will make you confident about your long-range planning and yet give you the freedom to make choices based on the needs and abilities of your students and on your own personal strengths and interests.

I hope this book also helps you with some of the minute-by-minute decision making that you face as a teacher. I've tried to figure out what makes lessons work for me so that I could suggest ways to help you support your students as they experience the pleasures and hard work associated with mathematical problem solving. Motivating and supporting students by presenting lessons well requires planning and understanding. Some of my suggestions may cause you to reflect on your teaching practices and give you the confidence to try new ideas in ways that feel right to you. Also, at the back of the book, you'll find a complete list of resources mentioned in the monthly chapters. I hope you'll turn to many of these curriculum guides to expand on the ideas presented in this book.

Learning math can be an intriguing and joyful experience for young learners. Number, shape, data collection, and measurement are all aspects of the world of mathematics that beckon to second graders' inquisitive minds. Exploring these ideas in the company of classmates who are excited about learning and who care about one another can establish positive attitudes about mathematics that will be important for years to come. I wish you the best of luck as you work with your students throughout the year.