



Curriculum Units by Fellows of the Yale-New Haven Teachers Institute  
2006 Volume IV: Math in the Beauty and Realization of Architecture

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## Preface

In March 2006, sixty-five teachers from twenty-three New Haven Public Schools became Fellows of the Yale-New Haven Teachers Institute to prepare new curricular materials for school courses. Established in 1978, the Institute is a partnership of Yale University and the New Haven Public Schools, designed to strengthen teaching and improve learning of the humanities and the sciences in our community's schools. Through the Institute, Yale faculty members and school teachers join in a collegial relationship. The Institute is also an interschool and interdisciplinary forum for teachers to work together on new curricula.

The Institute has repeatedly received national recognition as a pioneering model of university-school collaboration that integrates curriculum development with intellectual renewal for teachers. Between 1998 and 2003 it conducted a National Demonstration Project which showed that the approach the Institute had taken for twenty years in New Haven could be tailored to establish similar university-school partnerships under different circumstances in other cities. Based on the success of that Project, in 2004 it announced the Yale National Initiative to strengthen teaching in public schools, which aims to establish Teachers Institutes in states throughout the country.

Teachers had primary responsibility for identifying the subjects the Institute would address. Between October and December 2005, Institute Representatives canvassed teachers in each New Haven elementary, middle, and high school to determine the subjects they would like the Institute to treat. The Institute then circulated descriptions of seminars that encompassed teachers' interests. In applying to the Institute, teachers described unit topics on which they proposed to work and the relationship of these topics to Institute seminars and to courses they would teach in the coming school year.

Six seminars were organized, corresponding to the principal themes of the Fellows' proposals. The seminar entitled "Math in the Beauty and Realization of Architecture" was led by Martin D. Gehner, Professor Emeritus of Architectural Engineering. Between March and August, Fellows participated in seminar meetings, researched their topics, and attended a series of lectures by Yale faculty members.

The curriculum units Fellows wrote are their own; they are presented in six volumes, one for each seminar. A list of the 176 volumes of Institute units published between 1978 and 2006 appears on the following pages. Guides to each year's units, a topical *Index* of all 1588 units written between 1978 and 2006 and reference lists showing the relationship of the units to school curricula and academic standards are available from the Institute. An electronic version of these curricular resources is available on the Institute's Web site (<http://teachersinstitute.yale.edu>).

The units that follow contain four elements: objectives, teaching strategies, sample lessons and classroom

activities, and lists of resources for teachers and students. They are intended primarily for the use of Institute Fellows and their colleagues who teach in New Haven. Teachers who use these units may submit comments on them at <http://teachers.yale.edu>.

The Yale-New Haven Teachers Institute is a permanently endowed unit of Yale University. The 2006 Institute was supported also by grants from the Sherman Fairchild Foundation, the Jessie Ball duPont Fund and the Howard Hughes Medical Institute. The New Haven Public Schools, Yale's partner in the Institute, has supported the program annually since its inception. The materials presented here do not necessarily reflect the views of the funding agencies.

James R. Vivian

New Haven

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