



Curriculum Units by Fellows of the Yale-New Haven Teachers Institute  
1999 Volume V: How Do You Know? The Experimental Basis of Chemical Knowledge

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## Preface

In March 1999, seventy-four teachers from the 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 and successful model of university-school collaboration that integrates curriculum development with intellectual renewal for teachers. In 1998, it undertook a national initiative to demonstrate that the approach the Institute has taken for twenty years in New Haven can be tailored to establish similar university-school partnerships under different circumstances in other cities. Teachers had primary responsibility for identifying the subjects the Institute would address. Between October and December 1998, 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. Seven seminars were organized, corresponding to the principal themes of the Fellows' proposals. The seminar entitled *How Do You Know? The Experimental Basis for Chemical Knowledge* was led by J. Michael McBride, Professor of Chemistry. 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 seven volumes, one for each seminar. A list of the 136 volumes of Institute units published between 1978 and 1999 appears on the following pages. Guides to each year's units, a topical Index of all 1236 units written between 1978 and 1999, and reference lists showing the relationship of the units to school curricula and content standards are available from the Institute. An electronic version of many of these curricular resources is accessible by connecting to 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.

The DeWitt Wallace-Reader's Digest Fund and the National Endowment for the Humanities have provided the Yale-New Haven Teachers Institute major grants in the form of both endowment and program support. In

addition, a number of individuals and foundations, notably the William Randolph Hearst Foundation, the Zimmerman Foundation and the Horace W. Goldsmith Foundation, have made gifts and grants toward the Endowment Fund for the Teachers Institute. The 1999 Institute was supported also by grants from the Sherman Fairchild Foundation and the Camille and Henry Dreyfus Foundation. The materials presented here do not necessarily reflect the views of the funding agencies.

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New Haven

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