PART II
DESIGNING TOMORROW'S CURRICULUM

A basic premise of *Designs for Science Literacy* is that there will come a time early in the 21st century when it will be possible for any school district to design its own curriculum in its entirety, from kindergarten through the 12th grade. A district will be able to create a curriculum to advance the goals it values, incorporate the teaching approaches it believes will work well with its students, and use time and other resources as it wishes. It will be able to choose or construct a traditional or radical curriculum, or one that is conservative in some respects and innovative in others. It will be able to do that and still have an intellectually coherent, developmentally sound curriculum that meets national and state standards.

Currently, it is not possible for most school districts to undertake such sophisticated curriculum designing. The design tools are not available, most of the necessary curriculum-building materials have not been created, and the very notion of designing a whole curriculum—not just improving instruction in parts of the curriculum—is far from being widely accepted. The three chapters that make up Part II assume that these constraints will gradually be removed in the early years of the new century. The chapters also assume that, as with almost everything else, the curriculum design process will be computer-assisted.

A central proposition of these chapters is that significant responsibility for directing the process of K-12 curriculum design will be vested in teams of teachers. In creating a design, teachers will, of course, consult with parents and community leaders, university professors, materials developers, district curriculum specialists, colleagues in professional associations and scientific societies, and even with professional curriculum architects. Though legal authority for the curriculum has traditionally rested with

school-district boards and state agencies, teachers have had the main responsibility for its design and implementation, and that arrangement is expected to continue. The mark of a mature profession is that its practitioners have substantial decision-making authority over fundamental aspects of their work. On the other hand, teacher teams will not be held responsible for the extremely demanding task of creating the instructional materials that a curriculum will need.

There is little said about instruction in the three chapters in Part II. Although having good instruction day by day may well be as important as having coherent curricula, it is not necessary in curriculum design to spell out repeatedly what good teaching practices are. Both *Science for All Americans* and *National Science Education Standards* provide principles that ought to characterize K-12 teaching. But here, in the three chapters of Part II, it is assumed that instructional strategies will have been built into the blocks from which curricula will be configured. The chapters themselves focus on the nature, selection, and assembly of such curriculum blocks.

Chapter 3: Design by Assembly presents a concept of curriculum design by selection and assembly of already developed curriculum blocks, according to design specifications. It also suggests how computers can be exploited in the service of curriculum design and curriculum management. Chapter 4: Curriculum Blocks describes the properties of curriculum blocks, and how a large pool of them could be created. Chapter 5: How it Could Be offers three fictional accounts of how curriculum design could proceed in the early 21st century, assuming that the possibilities presented in Chapters 3 and 4 do indeed become realities.

The three chapters that make up Part II need not be read in order. In particular, some readers may find it helpful to look first at Chapter 5 to get an idea of how the ideas in Chapters 3 and 4 would eventually play out in practice, before returning to the details of blocks and how they may be assembled. The Introduction to Part III includes suggestions on practical approaches to reform that are also relevant to Chapter 5.