Steps in Designing Instruction

NOTE: These steps may be interrupted, repeated, or completed in a different order, as you wish.

1. Select a topic around which you would like to develop student understanding, e.g., cell specialization, composition of the earth, gravitational forces, conservation of matter, etc. Topics may be identified by browsing the chapters and sections in the table of contents of *Science for All Americans (SFAA)* and then checking the *SFAA* index for a sequence of topics list for each section; by thinking of a topic that you would like to teach differently; or by exploring topics that you do not currently teach, e.g., design constraints and trade-offs; evolution theory and resistance to it; interactions of science and mathematics; or physical and conceptual models.

2. Using the table of contents and the index, find and read about your topic in *Science for All Americans.*

3. Complete a journal entry in which you respond to your reading. Note any ways in which SFAA*'s recommendations for content are different from what is now taught.*

4. Find the appropriate chapter and section in *Benchmarks for Science Literacy (Benchmarks)* for the topic selected.

5. **Read the introductory essay at the beginning of this *Benchmarks* section.**

6. Record in your journal several ideas you got from the introductory essay.

7. Read the short essays and K-12 list of benchmarks for each grade level, noting ideas about what experiences students need to have to understand particular benchmarks. Look for new topics related to the topic you selected in step 1, topics that should be omitted, and topics that should be taught in different ways and/or at different grade levels.

8. Complete a journal entry about your thinking as you read the essays and the lists of benchmarks for each grade level.

9. a. Use the *Also See* box to identify chapters and sections of *Benchmarks* where you might find benchmarks related to your topic.

b. Examine a relevant strand map from *Benchmarks on Disk*.

10. Comment in your journal on how the connections you identified might help shape instruction.

11. Read about research related to your topic in *Benchmarks*, Chapter 15: The Research Base.

12. Reflect in your journal about how the research might affect your instructional planning.

13. In *SFAA*, read Chapter 13: Principles of Effective Learning and Teaching.

14. Design an instructional plan applying what you learned as you used this design process.

15. Write a short rationale explaining how your planned instruction reflects the principles of Project 2061.