

Modifying Curriculum “Mindfully”

No one curriculum can meet the needs of every student and every teacher. Whether the curriculum is a textbook, a fully developed curriculum program, or instructional materials that they have themselves developed, teachers continually revisit their teaching materials. They modify them to meet the needs of their current students as well as to suit their own beliefs about good teaching and learning. Teaching is an ongoing process of design, and teachers must continually interpret teaching materials for their classrooms and students.

Teachers modify instructional materials for a variety of reasons including:

- to accommodate the different learning styles of students (differentiated instruction);
- to redesign an activity that is too complex or did not work well for a particular group of students;
- to substitute for a costly activity;
- to make an activity more local and site-based in order to make the concepts more relevant to students;
- to meet their own beliefs about what constitutes good teaching and learning;
- to address the external demands of school policy, parents, and/or testing.

Foundation Science acknowledges that teachers will modify the materials. So that modifications might true to the original as possible, each reading, activity, and discussion is accompanied by a description of its purpose and its role in the bigger context of the learning experience. Teachers can use these descriptions as a basis for customizing instruction to the specific needs of students while hewing close to the intentions of the developers. In this way the intended outcomes, pedagogy, and spirit of the original can be retained as the materials are modified. The nature of the modification should not alter the original intention of the activity or reading, the content, learning outcomes, or pedagogical approach. Rather, the modification should facilitate students’ access to the scientific content of the materials by the acquisition of knowledge and understanding in ways that accommodate their specific needs and that enhance their ability to demonstrate their newly acquired understandings.

Some ways in which the curriculum could be modified include:

- **Changing the Story** - A teacher who senses that the ‘story’ in each LE is too distant from students’ experiences to be of interest may substitute a story of greater relevance or appeal to the students, perhaps because of other coursework they are doing or interests they have. The substituted story should fulfill the purpose of the story to engage students in the concepts they are about to explore in the learning experience and present them with a challenge to address that reflects the content.
- **Modifying, Substituting, or Augmenting an Activity**- In certain cases an activity may be too expensive, too time consuming, or too complex to conduct. A teacher may choose to conduct the activity as a demonstration or provide the data for students to analyze and discuss. In either modification, students should discuss the steps of the procedure so that they can understand the steps involved in the experiment. Alternatively, a teacher may substitute an alternative activity that achieves the purpose and intended outcomes of the activity provided in the curriculum.

- Modifying a Reading - The reading level for *Foundation Science* can be challenging for some students. Teaching strategies within the teacher guide provide different approaches to support students' comprehension of the reading and ability to extract information. Strategies include reading out loud in class, jigsaw reading, class discussions of the main ideas in each section of a reading, and use of alternative readings provided in the curriculum. Many readings are broken up into smaller sections by *Think About It* questions designed to help students stop and think about what they have read and, by responding to the questions, extract important information and make meaning of what they have read. A teacher may choose to develop *Think About It* questions for other readings where students might need more support. The questions should help students recognize the main ideas of the section and identify information relevant to addressing the challenge. If a teacher elects to develop a substitute reading it is important that the new reading reflect the intended purpose and learning outcomes of the original reading.
- Pathways through a Unit - Each unit in *Foundation Science* has been designed as a progression for deepening and extending concepts for each topic of biology. Concepts in each successive learning experience build upon and expand one or more concepts developed in earlier learning experiences. Because of state framework requirements, variation in levels of student interests, time considerations, or decisions about student learning outcomes, a teacher may elect to forgo an in-depth investigation into a particular topic. By comparing the Goals for Understanding in successive learning experiences, a teacher can determine how deeply each learning experience takes specific concepts and decide whether to carry out that next learning experience. Alternatively, a teacher may want to extend student learning beyond the core curriculum. Suggestions for additional activities related to the concepts in the learning experience are provided at the end of each learning experience in a section entitled "Extending Ideas."