Fidelity and the ECS Curriculum
ECS InBrief Series

The *Exploring Computer Science* (ECS) curriculum provides a comprehensive set of inquiry-based lessons that comprise a yearlong, introductory computing course for high school students. The course is designed to allow learners to move through successive refinements from informal to complex ideas about computer science. The instructional materials present learning experiences for students that introduce, reinforce, and apply key ideas and concepts of computer science as they progress through the sequential units of the course.

CONCEPTUAL APPROACH	ECS UNITS
Introduce Foundational Knowledge of CS	Unit 1: Human Computer Interaction Unit 2: Problem Solving
Reinforce Learning CS through Coding & Design	Unit 3: Web Design Unit 4: Introduction to Programming
Apply Applications in Computing	Unit 5: Computing and Data Analysis Unit 6: Robotics

Modifications to Lessons in Units 1-4 of ECS:
The first four units carefully integrate the learning progressions of key concepts at the foundation of computer science and are considered the core part of the ECS curriculum. The introductory two units build key ideas and problem solving strategies for computer science that are further developed in later units. These introductory units do not focus on a particular computing tool, but rather provide opportunities for students to develop computational thinking practices that span the field and go beyond learning the intricacies of specific technologies. Units 3 and 4 reinforce this learning by engaging students in coding and design activities.

In order to support an equitable classroom culture, it is important for teachers to adapt the context of particular activities to fit the interests of their students, to connect current events to the computing classroom, and to determine what outside resources make sense to use in support of these adaptations. To balance the need for local customization and to keep the learning progressions intact, modifications to these lessons or units should be done with attention to meeting the same daily objectives as listed in the original curriculum. In other words, student-learning objectives as identified in the curriculum must be tightly adhered to as they are fundamental and build upon each other, but classroom activities designed to meet those objectives may be modified as needed. Adapted lessons should also support inquiry and contribute to an equitable classroom-learning environment.

Modifications to Units 5-6 of ECS:
The final two units provide an opportunity for students to apply key concepts learned in earlier units within particular domains. These two units are well suited to be substituted with units that focus on different applications or tools that build on concepts from Units 1-4. The dynamic nature of the rapidly changing field of computing and the diversity of students enrolled in ECS makes it important to provide flexibility of tools or new applications. Alternative units might include game design, media computation, or the development of mobile phone applications. To maintain the pacing of the course, each substituted unit should be approximately 6 weeks in length. Again, these alternative units should support inquiry and contribute to an equitable classroom-learning environment.