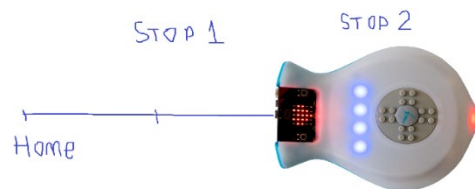


Teachers College, Columbia University
525 West 120th Street
New York NY 10027
212 678 3000

Sample Curriculum Module

Our activities will demonstrate the sophisticated math thinking embedded in cultural and community practices. We use community-based knowledge as the context for integrating coding to support math teaching and learning, by turning the Finch robots into culturally situated design tools.

Here is an example of a first-grade week-long module of five short culturally relevant activities that build upon students' cultural and community knowledge by supporting connections they make between math concepts and everyday experiences they encounter when using public transportation with their parents. In this module, students bring into their math learning a bus or subway ride from home to an important community resource (e.g. grocery store, cultural center, house of worship). This module focuses on representing and solving problems involving addition and subtraction (CCSM.1.OA.1) and could be students' first exposure to the Finch and the coding app FinchBlox. Each student will have their own robot, but all activities will be completed with a partner to provide opportunities for students to collaborate and learn from each other. During the first day, students will look at the subway and bus routes to identify stops near their homes and community resources, and count the number of stops for different routes. They would also name their robots and learn how to code it to draw a line, going forward and backwards. During the second day, students will learn to add a sound and/or light to their short computer program with the Finch to represent a bus or train stop. During the third day, students will code the robot to repeat a cycle of "move - stop - turn on light or sound - turn off light or sound" segments representing travel on a bus or a subway. They will label the route and stops made by the robot on a large piece of paper (11" x 18").



During the fourth day, students will have Finch draw one or two more routes they take on a bus or subway. They will be challenged to create one addition and one subtraction problem based on their drawings and have their partners solve these problems. In the last activity, students will engage in a whole class discussion to compare their trips, while the teacher could be asking questions like "how many more or less stops did it take Diego to get to a grocery store from home compared to Aisha?" or "how many subway stops did Camilla and Natasha travel in total?". Such short activities could take place in a variety of participation structures that map onto established

instructional practices, e.g., problems of the day working individually, exit tickets using Think-Pair-Share with a partner, or a mini-lesson as a whole group.