

## Unit 0: Coding Unplugged

### Activity 4: Debugging Relay Race

#### Intro and Discussion Points:

Computer Scientists work as a team, and must rely on each other to find and point out one another's mistakes. Debugging is not a solitary activity!

#### Preparation and Materials:

- Large space
- [Grid paper program diagrams](#), laminated
- Small dry erase boards
- Expo markers

#### Timeframe:

1 class period

#### Student Learning Targets:

- I can work on a team to follow and debug a program.

#### Project Goals:

- Understand that precision and communication are important aspects of computer science.

#### Lesson Sequence:

- Establish or review the symbols you will need to draw the grid images (left, right, forward, backward, color in)
- Divide students into groups of 3-4, determine who will be team captain, and line up relay-race style.
- Place the image at the other side of the room from each team.
- The first student will run over to the image and write down the first symbol in the program needed to create that image.
- The first student then runs back and passes the expo marker the next person in line.
- The next person in line runs to the image, checks the program that has already been written, then either debugs the program by crossing out an incorrect symbol, **or** adds a new one. Each student can only do ONE action each time, so they cannot cross out AND correct the bug.
- That student runs back the next person in line and tells them how to fix the bug, or to move on to the next step.
- When all steps are complete, the captain checks the program one last time and declares it done.
- Points are awarded as followed: 2 points for being done first AND everything is correct, 1 point for having everything correct, but not completed first, 0 points if there are bugs.
- Repeat for each image.