

Coding Communication Challenge

In this coding challenge, students will practice collaboration and communication skills in order to conquer a robot obstacle course while maintaining a safe distance.

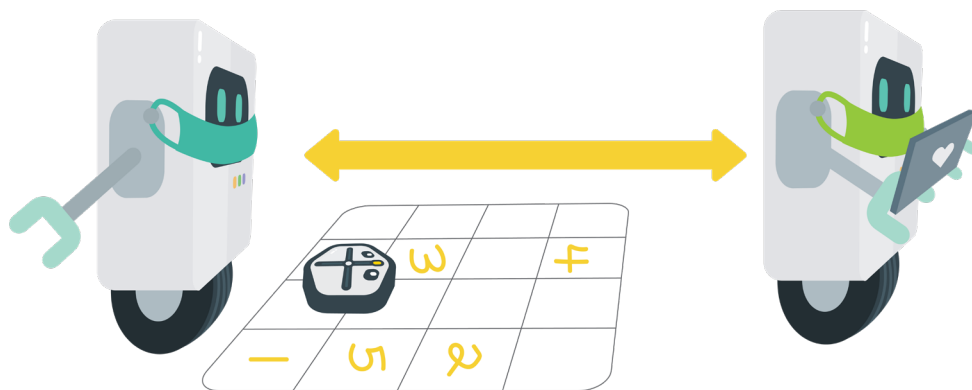
Teacher Prep

Robot Station

- Establish a safe, socially-distant area on a table or the floor of your classroom for Root and your fold-out whiteboard grid.
- Place a whiteboard grid, Root Robot, dry-erase marker and cloth, and a vinyl cling sheet at the station

Coding Station

- 6ft+ (2 m+) away from the Robot Station, set up a seat (facing **away** from the Robot Station) and coding device.
- Open the iRobot Coding App on your coding device and connect to the Root Robot at the corresponding Robot Station.



With the Class

1. Divide students into pairs. One student will serve as the Robot Wrangler (RW) and one will be the Coding Captain (CC).
2. Seat the RW at the Robot Station. Seat the CC at the Coding Station, facing away from the Robot Station so they cannot see Root.

Subject(s):

Coding / Robotics
SEL: Communication

Experience Level:

Beginner
Intermediate

Time:

15-20 mins

Group Size:

1-4

Supplies:

Root Coding Robot
iRobot Coding App
Coding Device
Whiteboard Grid
Dry-Erase Marker
Dry-Erase Cloth
Vinyl Clings

3. Challenge the RW to create an obstacle course on the whiteboard grid, either with their dry-erase marker or the vinyl clings. *The CC should not be able to see the obstacle course*

* Their course should contain:

- One (1) starting point
- Three (3) “checkpoints” for Root to reach
- Two (2) “obstacles” for Root to avoid
- and one (1) finish point
- *NOTE: Obstacle course requirements can be scaled up or down for difficulty level).*

4. After the course has been assembled, challenge the RW and CC to code Root to complete the obstacle course. They must do so only by verbal communication, as the CC will not be able to see the course and the RW does not have access to the coding device.

5. Make sure to wipe down the entire coding station, including Root, whiteboard grid and clings before switching groups.

Assesment

Students may:

- Demonstrate their solution to the teacher
- Take a screenshot of their coding solution paired with a photo of the obstacle course

Extension

Reverse Engineer Activity

- Provide students with a print-out of an iRobot Coding project with a blank whiteboard grid. Challenge students to design the grid that would match the provided coding project, including the starting point, checkpoints, obstacles and finish point.

Real World Connections:

When helping to diagnose a problem over the phone, IT technicians need to be experts in how to ask for specific details from their clients. The better they are able to understand what their client can see, the faster they'll be able to problem-solve!