NOTES FOR INSTRUCTOR

The activity is designed to have students behave like a path-planning algorithm. Each team (or “function”) receives limited information and uses it to make a new package for the next team or rover. This is why the teams are not allowed to communicate with each other. By the end, students will hopefully identify the unexpected challenges of the activity and will be able to connect them to the challenges of autonomous navigation.  Some examples of challenges that may be identified are:

1. Accurately marking obstacles on the map.
2. Determining blind spots on the map and navigating accordingly.
3. Translating the path into code (this one is largely dependent on the level of experience students have with programming and how Pathing designs the routes.)

General Notes

1. The course should be set up in a different room, or at the very least blocked from the student’s view.
2. We suggest that one instructor should always be with the students, and one be with the course. This is not a necessity but may help the activity run smoother.
3. The “rover” should be a device with a camera and internet connection (phone, laptop, etc.) This is so the Mapping team can receive a video feed from the rover’s point of view.
4. Two video calls should be set up. One between the Mapping team and the rover’s onboard camera and one between the Coding team and the instructor with the rover.
   1. Calls can be set up with Zoom, Microsoft Teams, or similar software.
   2. The Coding team should be screen sharing so the instructor can read their code and move the rover accordingly.
   3. If the instructor can go between the Coding team and the course, no video call is needed.
5. If your students are experienced with programming, the Coding section may be adjusted to use another language. Restructuring this section is left to you. If you opt to do this, we suggest adding a penalty for submitting code that does not run/compile such as losing a Power Point.