

Building the Autopilot with a Team

The build instructions will show students step-by-step instructions on how to build the Autopilot Robot. The Build Instruction Tips section will point out additional information for specific steps which will help students be successful with their build, so be sure to point out that section to students. There is an optional rubric to evaluate the robot build on [this page](#). If any rubrics are used to evaluate students, review the rubric or pass out copies before students begin working so they are clear on how they will be assessed.

Before starting the build, consider how your students will be organized. Will each student have their own robot, or will they work in pairs or teams? If working in teams, each student could build a portion of steps or each student could be given a role. The following roles can be utilized during the building of Autopilot:

- **Right wheel** — This person follows steps 1-6 to build the right wheel of Autopilot. This person is also responsible for making sure that the motor gets plugged into the correct port (port 6).
- **Left wheel** — This person follows steps 7-12 to build the left wheel of Autopilot. This person is also responsible for making sure that the motor gets plugged into the correct port (port 1).
- **Sensors** — This person follows steps 13-26 to build the frame and attach the sensors.
- **Robot Brain** — This person follows steps 27-30 to connect all of the components including the Robot Brain and making sure the sensors are attached to the correct ports. This person is also responsible for making sure that the battery is [charged](#) and [ready](#).
 - Port 2: Distance Sensor
 - Port 3: Color Sensor
 - Port 4: Gyro Sensor
 - Port 5: Touch LED
 - Port 8: Bumper Switch
 - Port 9: Bumper Switch

If there are two students in each group, the students can each choose two roles. If there are three students in a group, one of the students can choose to do two roles. If there are four students in a group, each student can have one role.

Provide the list of roles and their responsibilities to the students. Once students are in their groups, allow the members to choose their role. Circulate the classroom and make sure that every student has a role. There is an optional collaboration rubric on [this page](#).

Remind the students of roles throughout the exploration. For roles to work, students have to feel as though they will be held accountable for fulfilling those roles. Therefore,

interject if you see a student taking over someone else's role or not fulfilling their assigned role. Reminders about who is supposed to be doing what can be useful interventions.