

## **P1 Purple Brainstorming Resources**

### [2019 Red Team P1](#)

2019 Red Team's robot utilizes a three mecanum wheeled robot. The layout of the wheels is in a triangle orientation. With different combinations of the dynamixel modules rotating, they were able to achieve x- and y-motion without needing to rotate their robot. By using their report and design files as a resource, we would like to make a similar robot using either a three- or four-wheeled setup.

### [2017 Green Team P1](#)

2017 Green Team's robot utilizes a track that spans the entire x axis of the field. The track is on wheels that move the entire track along the y axis. We used their design as inspiration for our first design idea. This strategy is useful because it maintains holonomic motion, which will be important for maintaining the direction of the laser pointer. This design could be problematic because you need to store where the robot is located in relation to the field and if the coordinates get off you could get lost.

### [2018 Green Team P1](#)

2018 Green Team's robot uses a two wheel based tower. We were inspired by their design and applied the idea to design 4. This design is useful since we have their files as a resource and all we need to do is add a laser and improve upon their design. Design 4.1 is an extension of the idea of a tower mounted laser.

### [Frictionless bearings](#)

These bearings a new way of keeping the balls inside of bearings separated. Traditional ball bearings use a cage device to help keep the balls an equal distance apart from each other. This introduces extra friction between the ball and the cage, so grease is added to assist in more frictionless movement. These new bearings do not use a cage, but rather there are divots and bumps added to the bearing to help keep the balls apart from each other. This allows for less friction to take place and for a bearing that is more efficient. We can use these types of bearings or concepts of them to aid in our rotating parts of our robot.