

How to make bumpers:

Bumpers are a necessity for all robots but the process in making them can be complex.

Materials:

Pool noodles

Plywood- The width that is required by the rules

Gorilla Glue

Zip ties (long)

Long bolts

Nuts

Power drill

Aluminum tubing

Sharpie (Marking tool)

Hammer and Punch

1.) Read all Rules carefully!:

- Take note of: bumper zone → This will tell the height of the bumpers
 - → Dimensions
 - → Materials

2.) Cutting wood and tubing:

- Cut wood and tubing to required length (usually the length of the robot)

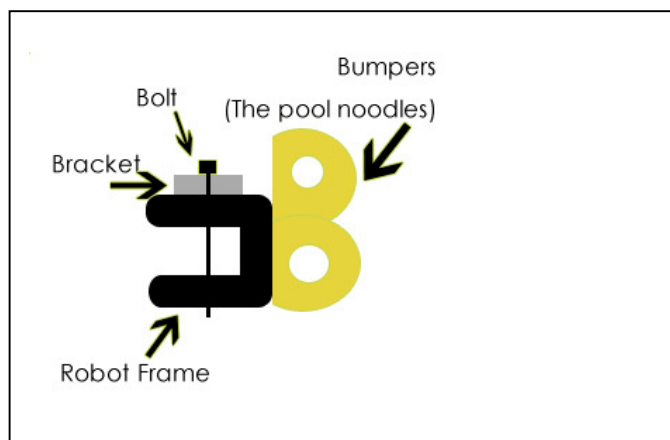
3.) Making brackets:

- Cut 10 brackets → 2' of light weight but sturdy aluminum
- Drill 2 holes (1/4 in) in side of metal to attach to bumper side
- Drill 1 hole on top of the metal to attach to the frame

Note: Works best if all brackets are EXACTLY the same

4.) Attaching the brackets to the bumper:

- 1.) Line up bumper to the frame at desired height
- 2.) Mark line vertically across
- 3.) Attach bracket to bumper with nuts and bolts to the top of line → make sure that brackets line up with holes on the bot



5.) Making the bumper cushion on top of the wooden bumper structure:

- Double up noodles and attach with gorilla glue and secure with zipties.

Final Bumper product: →

6.) Cover bumper with fabric

7.) With long bolts attach the bumpers to the frame.

