RMP Work:

Most Critical Subsystem; Scooper:

1. Resize “Motor arm connecting shaft” to fit ¼’ motor bracket ( re-add Eclips as well)
2. Resize screw connecting “L bracket” and “Lever arm W motor” (make longer w/ nut)
3. Check clearance of the “Frame” with the “String winder” to make sure it wont hit the top of the frame
4. Check to make sure the scooper will sit flat on the ground properly (we have to lower the wheels raising the scooper even farther off of the ground)

Frame:

1. Cut box of frame into 4 distinct parts (top frame, side frame{2 identical pieces}, bottom frame)\

Top:

1. Add screw holes onto top piece of frame for L brackets (close fit w/ nuts {maybe clearance} or tapped holes)
2. Add screw holes onto top piece of frame for connecting side frame pieces (clearance holes/ close fit)

Side:

1. Add screw holes on the top edge of the side frame pieces to connect to top frame (tapped holes to receive screws)
2. Add screw holes on side of the side frames to connect to the bottom frame from the outside of the RMP near wheels (close fit/ clearance)
3. Lower the axle holes to lower the wheels in the front (maybe move forward as well but need clearance for scooper)
4. Axle holes need a bearing in them for wheels in front (make axle holes with clearance for it

Bottom:

1. Add screw holes on edge of the bottom frame to receive screws from side frames (tapped holes) (spring pins enough?)
2. Add screw holes on the bottom frame for L brackets that hold the driving axle (tapped holes)
3. Add screw holes on the bottom frame for axle driving motor mounts (tapped holes)
4. Add screw holes on the bottom frame for brush mounts and L brackets that mount to it (tapped holes)

Treads: (Decision needs to be made on treads or Reg. wheels)

1. Tread wheels need to be designed or bought as a package with treads
2. Alternatively, tensioning system probably on front frame
3. Brackets with bearings need to be created to hold rear axle level with front wheels
4. Add a way to connect wheels to axle
5. Split rear axle needs to be made to control rear wheels separately
6. Motor system to control wheels/axle needs to be made
7. Eclips to constrain the axle with the brackets
8. Front axle cannot be connected if using treads
9. Mounting system for front axle needs to be made

Brushes

1. Remake mounting brackets that mount to the brushes to have a clamping force in the same direction as the brushes point (90⁰ to where the screw holes are now)
2. Make sure that is a possible way to mount the brushes
3. Create a trigger mechanism for moving brushes into position once game starts (maybe use rear axles/motor)
   1. Can make it fall off of our RMP once game start if necessary
4. Make sure brushes are constrained enough
5. Are current mounting brackets possible to make (Redesign top mounting brackets?)
6. What will make the brushes stay in their place once they move into position
7. Longer brushes the better
8. They need to be mounted far enough back to stay within 10” constraint

Approval packages:

1. Frame Parts
2. Brush parts
3. Tread Parts

Bill of materials:

1. All parts need to be added before Friday Nov. 5th

Manufacturing:

1. 3 parts of our RMP Scooper need to be made by Monday, Nov. 8th

3D printing team assignment:

1. 3D printed part is due Wednesday, Nov. 3rd
   1. Must be less than 7g and less than 1 hour print time
   2. We have to print it on Monday, Nov. 1st (Last time slot)
2. Goal is to use least material with strongest load strength
   1. Competition in class, winners get prize? Personally, it’s the very last thing I’m focused on
3. Follow up questions due on Monday, Nov. 8th

Homework 4:

1. Due on Tuesday, Nov. 9th
2. On top of the team portion, we have 2 individual homework questions at the very end of HW 4 because fuck us right?

To keep in mind:

1. Make parts modular if possible (same part, multiple uses)
2. Everything needs to be made out of stock materials that come in kit or bought in shop.
3. Be careful of how much we plan on “spending” budget needs to be approved by squad and comes out of our pocket.
4. Check when making parts if it comes in kit or if it is bought
5. 3D, water jet and laser cut parts do not need a manufacturing plan