DEVELOPING IDEAS

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Is everyone familiar with the rules?

No → Go back to "Kick-off" flowchart

Yes ↓

Make sure all students are reminded of the Robot Priorites list made during kick-off sessions

All students should be clear on what their robot has to do and what is most important, and should notice that drivetrain is number 1 on the priority list

A DRIVETRAINS

Before any manipulators are thought of, the team should choose what the best drivetrain for this year's competition is

→ Make students follow the **flowchart** provided on drivetrains – they will reach a conclusion quickly using it

Once the team has decided on a drivetrain, it's time to brainstorm ideas for the game

B GENERATING CONCEPTS

Now is when to figure out "HOW" to accomplish the "WHAT." It is a good idea to both think outside the box and use pre-existing designs

→ This stage **does not** mean students should start making their ideas – that will be the next session

C BRAINSTORMING

In the brainstorming, students are encouraged NOT to make any judgments on the ideas proposed, only to compile a large list of ideas

← Focus on the quanitity of ideas generated instead of the quality of ideas generated. Many ideas are generated in the the hope that a few good ideas will develop

E.g. ← Repeat the game *stubots* where students acted as robots, but this time, the students should identify the functional qualities of the robot. Students should really focus on the robot manipulation

Let's say a task in this year's challenge involves picking up a ball from the ground. When the students are the "robots," they will motion picking up a ball from the ground. That motion means that the robot will need a manipulator, hence students have to now think of how to make that

Make the students identify the key actions of the robot after *stubot*

Once they have made a list of all possible mechanisms necessary to complete every task, it is time to move on to the next step

D SPECIFICATION RANKING

Divide ideas on the list and split them into three categories:

R = Required (MUST be included)

P = Preferred (important, but project won't fail without it)

W = Wish (not important, but would be good if possible)

→ On Required, students should have things like a drivetrain or a mechanism to move field objects

On Preferred, students should have more detailed ideas of how to pick up field objects, but relatively simple ideas

On Wish, students should have mechanisms that are ideal to complete tasks but are hard to make

Make sure someone has recorded this list for the next prototyping day