Advanced CAD Week 8: Final Project Part 1 - In-Class CADding

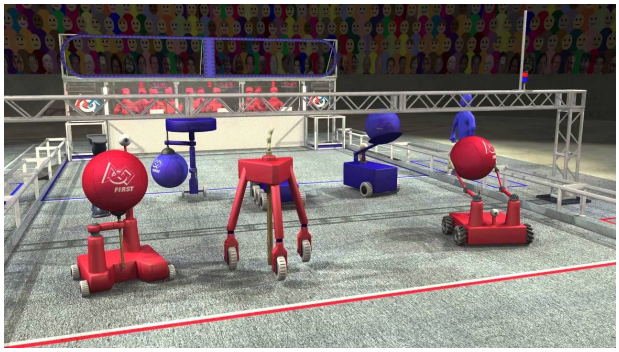
Rohawks 3419 -- Celina, Nathan, Lili -- 2019-2020

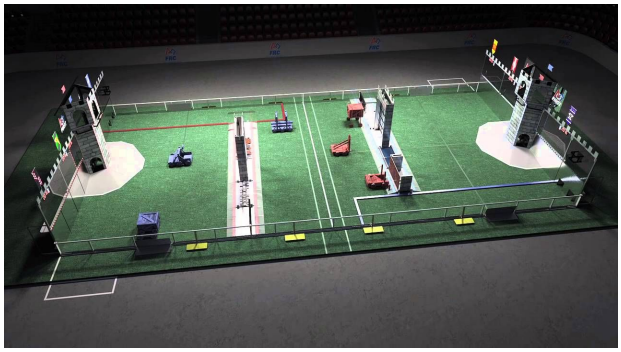
Lesson Goals

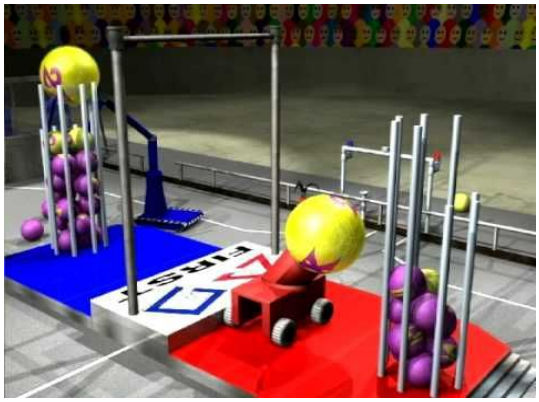
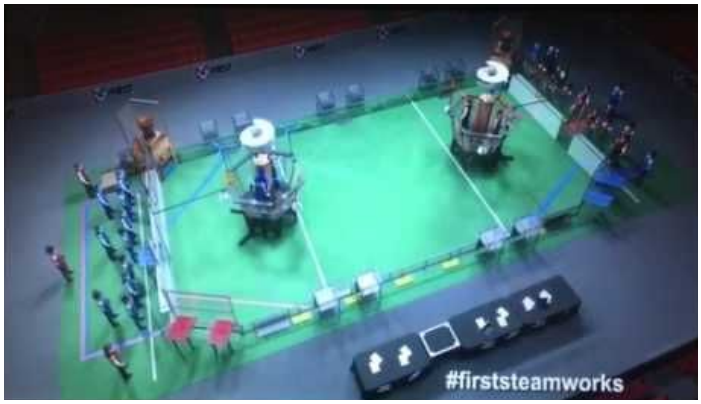
- To let students self-organize into groups and begin work on their final projects.
- To give students a chance to ask questions of their teachers and get feedback on their preliminary designs.

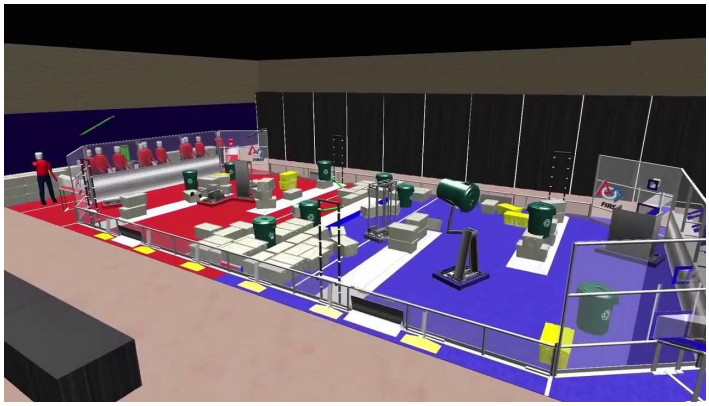
Lesson Plan

- Setup
    - At the beginning of the course (Week 1), we should make it clear that there will be a final project, so it isn't out of the blue. A few days before Lesson 8, we should send out an e-mail containing the details of the project.
- Explaining the challenge
    - Each group of 3-4 will design a subsystem from one game, that they can choose themselves. We've chosen particularly interesting mechanisms from many different years so that - collectively - our CAD team will be ready for anything in the coming season!
    - We can provide the following games and subsystems as a starting point - they all look like fun, interesting, and unique design challenges:
        - Intake: Aerial Assist (2014)
        - Drivetrain: Stronghold (2016)
        - Shooter: Steamworks (2017)
        - Elevator: Recycle Rush (2015)
        - Minibot: Locomotion (2011)
        - Climber: Frenzy (2004)
    - Since this is a CAD class, not robot design, it is 100% OK to look at old videos for inspiration as to what to design.





    - When designing your subsystem, focus on the big picture of how the pieces fit and work together. The specifics like material and weight are less important for the prototyping phase of the design process. The goal of this exercise is to give students experience designing their own mechanism. There will be lots of time to work out the details when the prototypes are complete and the actual robot is being built.
    - Good luck!
- After the project is announced and people have organized themselves into groups, the teachers should walk around answering questions. One of us should also be CADding on the Smartboard, to provide an example and show them our process.