Grand Blanc High School Robotics Team
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Advanced Level Deliverables
Prototype Classic

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Mentor(s) to ask if you have questions about, and may sign off on this Challenge: Clinton Bolinger, Brandi Bolinger or Cathy Fillwock

Challenge Information:

1. Students who are not able to complete the "Melon Chuckin'" Deliverable before the Team Member, Partner and Alumni BBQ must complete this Deliverable by the designated deadline for submitting Engineering Notebooks.
2. Students who complete the "Melon Chuckin'" Deliverable may ALSO choose to complete this Deliverable. Engineering Notebook entries for Students who have already completed the Melon Chuckin' are not required, but highly recommended.
3. NO MATERIALS may be purchased for this Deliverable.
4. Materials will be restricted to the following items from the Team's SCRAP bins:
    a. Wood
    b. PVC
    c. Surgical Tubing
    d. Screws, nails, and other fasteners (Non-scrap items, with approval from Clinton)
    e. Any item(s) from the "Prototyping Materials" bin in the back room
    f. If you are unsure if an item is scrap, please ask Clinton Bolinger
    g. Remember: *everything is scrap, it's just a matter of when*

Challenge Instructions:

1. Closed-toe shoes and safety glasses must be worn while working with tools or prototyping materials.
2. Each Student will work independently or sign up to participate as a Team for this Deliverable.
    a. Online sign-up will be available on the Team's VEX website.
    b. Students may only sign THEMSELVES up to participate in this event.
3. Each Student or Team of Students will be tasked with designing and building at least TWO different iterations of prototypes that can:
    a. Effectively pick up a rubber kickball (available in the back room, in the game piece archives) from the floor, AND
    b. Consistently score the kickball into a Trash Can (similar to those used in the 2015 FRC Game)
4. Safety should be taken into consideration.
5. Iteration should be the main goal of this Deliverable, and Students should strive to create simple and effective machines that deliver the game piece efficiently.
6. Prototypes may be constructed and approved together, or on separate occasions, as long as both are completed and tested by the designated deadline for submitting Engineering Notebooks.

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Engineering Notebook Instructions:

Your responses do not need to be lengthy, but you need to write legibly and use complete sentences. Bullets may be used as a form of response.

***USING COMPLETE SENTENCES**, PLEASE ANSWER THE FOLLOWING QUESTIONS FOR EACH PROTOTYPE THAT YOU CREATE:*

1. Each Student will be responsible for documenting the following processes in his/her Engineering Notebook:
    a. Strategy
    b. Design Phase
    c. Prototype Phase
    d. Testing Phase
    e. Design Iteration
2. Suggestions for documentation:
    a. Drawings
    b. Charts/graphs
    c. Tables
    d. Photographs
    e. Topics of discussion
    f. Reasoning for decisions

BEFORE TURNING IN YOUR ENGINEERING NOTEBOOK:

Please copy down and legibly write responses to the following questions:

1. What is the most valuable thing you learned throughout the course of this Deliverable?
2. What was your most favorite part of this deliverable?
3. What was your least favorite part of this deliverable?

To Complete Your Challenge:

1. Ensure that your Engineering Notebook entry is complete.
2. Find one of the Mentors listed on this deliverable and guide them to the location where your prototype(s) are set up, and ready to test.
3. Demonstrate your machine(s) capability to complete the game piece delivery challenge.
4. Ask one of the Mentors listed on this deliverable to approve your Engineering Notebook entry and have your deliverables checklist validated.
5. Disassemble your prototype(s) and place any materials that can be reused into the “Prototyping Materials” bin in the back room.
6. Put away any tools or other materials that you used.
7. Leave your workspace cleaner than it was when you found it.