Grand Blanc High School Robotics Team

Initial Member Deliverables
Assemble Claw in AutoCAD Inventor

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Mentor(s) to ask if you have questions about and can sign off on this Challenge: Clinton Bolinger, John Boehnke OR Mike Hasselbach

Before Beginning this Challenge:

1. Use a device (preferably a personal laptop, phone, etc) to watch the "Assemblies and Drawings" tutorial by Mike Hasselbach, the "Mad Cadder"
    - If you do not have a device to watch the video, you may use one of the computers in the back room. Please do not use the Programming Laptops or PR Laptops.
    - You may choose to watch the whole video, but only the first 5 minutes will be applicable to this challenge.
    - Link to video: https://youtu.be/noPwJmkpRvk
2. Take notes in your Engineering Notebook, and write down important or interesting pieces of information.

Challenge Instructions:

You must complete the following portions of this challenge on one of the four desktop computers in the back room at Premier OR download a licensed student edition of AutoCAD Inventor on your personal laptop/computer. Please visit the VEX Team Website for directions on how to download Inventor.

1. Make sure you've watched the first five minutes of the "Assemblies and Drawings" tutorial video, and completed the Engineering Notebook portion above.
2. Take notes while you are working in CAD and discuss any difficulties that you may have.
3. Create a personal folder on the EngiNERDs Server
    a. From a computer in the back room, open an explorer window
    b. On the left side of the explorer window, scroll down and select the "EngiNERDs Shared" drive, go into the "Students" folder
    c. Right click and select to create a "New Folder"
    d. Change the name of the folder to YOUR First Name, Last Name (Example: Clinton Bolinger). Please do not use nicknames, unless it is a shortened version of your real name.
4. To Complete the CAD portion of the challenge:
    a. Open the AutoCAD Inventor program
    b. In the upper left side of the screen, click on the drop down menu and select "New"
    c. Under the "Assembles" menu you will find a file named VEX_CAD_CLAW_TEMP.iam. Click to open the file
    d. As soon as the file is loaded, select "SAVE AS" from the drop-down menu, and save a copy into the folder that you created.
    e. Change the name of the file you saved to "20XX VEX AutoCAD Inventor Challenge - FIRST NAME LAST NAME" (with the XX replaced with the current year)
5. Following the steps outlined in the first five minutes of the "Assemblies and Drawings" tutorial video, constrain the parts that are inserted in the file you saved until it resembles a completed VEX ClawBot Claw.
6. Save your work, and print a copy of your 3D Assembly to the Printer in the Conference Room.

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Engineering Notebook Entry Instructions:

1. Attach a copy of your printed drawing into your notebook (scissors and glue sticks are available for use while in the conference room)
2. Answer the following questions:
    a. What did you think of the video? Was it helpful? Would you like to watch Did you enjoy this task? Why or why not?
    b. What did this task teach you about AutoCAD Inventor that may assist you while you are designing CAD assemblies of future designs?
    c. Why is it important to take the time to properly constrain each part in an assembly?

To Complete Your Challenge:

1. Ensure that your Engineering Notebook entry is complete,
2. Open your completed assembly on the computer,
3. Find one of the Mentors listed on this challenge and escort him/her to the computer you used, and ask him to inspect your completed work,
4. Ask the Mentor to approve your Engineering Notebook entry and have your deliverables checklist validated,
5. After you've been validated:
    1. Save your work,
    2. Close AutoCAD,
    3. Shut down the computer (only at the end of the meeting).
6. Clean your workspace AND the floor around you:
    1. Wipe off tables,
    2. Push in Chairs,
    3. Sweep the floor.