



Grand Blanc High School Robotics Team



Initial Member Deliverables Create a Working Drawing

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If you are new to CAD, you should complete the "ASSEMBLE CLAW IN AUTCAD INVENTOR" Deliverable before starting on this one.

You **MUST** complete the "Create a Part File" challenge **BEFORE** you may begin work on this challenge.

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, "TheMadCADer"
 - a. If you do not have a device to watch the video, you may use one of the Team computers, if they are available.
 - b. Link to Mike's Channel: <https://www.youtube.com/user/TheMadCADer>
 - c. Link to video: <https://youtu.be/noPwJmkrVvk?t=4m35s>
2. Take notes in your Engineering Notebook:
 - a. Helpful things to note:
 - i. Can a drawing be created from a part file that has not been saved?
 - ii. How is the size of the part on the paper changed?
3. If you have not already done so, 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 (i.e Nick instead of Nicholas).

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 computer/laptop. Please visit the EngiNERDs' VEX Teams Website for directions on how to download Inventor.

1. Make sure you've watched the entire "Assemblies and Drawings" tutorial video, and completed the Engineering Notebook portion above.
2. Open "Autodesk Inventor Professional" (version year doesn't matter)
3. Go to "New", and under the Drawings category, create a "Team 2337 Working Drawing Template" (skip the prompted entries for now, simply hit "OK" or "Cancel").
4. Place appropriate views and add necessary dimensions as shown in the video.
5. When finished, save the drawing file in your student folder.
6. Print the drawing file to the printer in the conference room.

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. Take notes while you are working in CAD and discuss any difficulties or interests that you may have.
3. Answer the following questions, USING COMPLETE SENTENCES:
 - a. What did you think of the video? Was it helpful? Would you like to watch more?
 - b. Did you enjoy this task? Why or why not?
 - c. Can a drawing be created from a part file that has not been saved?
 - d. How is the size of the part on the paper changed?



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- e. How do you determine how many views are necessary to fully describe a part?

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 to the computer you used, and ask him/her 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.

More Information:

If you ever get stuck or need assistance with Inventor, see if Mike is around. He's always happy to help.

- Numerical values in Inventor can be entered as fractions, decimal conversion is not necessary (example "1/16" can be entered instead of ".0625")
- The **Browser** is among the most important things to have when working in Inventor. Refer to this: <https://www.youtube.com/watch?v=auOG1kTD2KK>
- There are good ways to make holes and bad ways. Refer to this: <https://www.youtube.com/watch?v=n9kQr0DfM3w>

