



FTC 18225 High Definition & Everstem Education
Proudly Present:

CADTable CADathon

Rules and Regulations

1. General Information
2. Eligibility
3. General CAD Guidelines
4. Novice, Intermediate, and Advanced Categories
5. Submission and Judging



General Information

Resources:

Website: <https://cadtable.everstem.org/>

Devpost: <https://cadtable.devpost.com/>

Discord: <https://discord.gg/RyGtxJJNj6>

This document: <https://bit.ly/cadtablerules>

Workshop Signup: <https://forms.gle/bbJZBYzYj5V7dRV59>

*Previous CAD Workshop Presentations and Recordings Available on the Website
Mentorship or Questions May be Asked Through Discord*

Timeline:

March 22st 7-8 PM PT - How to Design a Part workshop

March 23rd 4:30-6 PM PT - How to Integrate a Part into an Assembly Workshop

March 27th 12 PM PT - Competition Kickoff and Prompt Release

March 28th 5-6 PM PT - How to Render a Photorealistic Image

April 3rd 8 AM PT - Submissions due

April 3rd 5 PM PT - Awards Ceremony

Questions or Concerns:

If you have any questions or concerns, please join our discord server (link above) and you'll be able to contact the organizers!

Gracious Professionalism

While inherently a competition, by hosting this event both FTC Team 18225 High Definition and Everstem Education hope to spread interest in CAD and other forms of design. We hope that teams will be able to both compete with and learn from each other, using this opportunity to connect with people who share the same interests and passions.

As the FIRST website says, "Gracious Professionalism is a part of pursuing a meaningful life. One can add to society and enjoy the satisfaction of knowing one has acted with integrity and sensitivity."



General CAD Guidelines

1. Although we will be hosting our workshops using Onshape (and Fusion for the rendering), any of the below software will be permitted. If you have another software that you think should be added to the list, let us know and we will review it.
 - a. Onshape
 - b. Solidworks
 - c. Fusion 360
 - d. Autodesk Inventor
 - e. TinkerCAD
 - f. FreeCAD
 - g. Creo
 - h. AutoCAD
 - i. CATIA
2. If your design has moving parts, they should be mated so that they are mobile in the right ways (i.e. parts slide linearly, and rotate around correct axes)
3. Appearances should be assigned in ways that clearly differentiate different parts of the build.

Please see the **Submission and Judging** section for information on submission formats and the judging process.



Prompts

Novice Division

Design a Trophy

- The trophy must be for the 1st place team of a selected theme (For example, the 1st place winner of a tennis competition)

Rubric

<u>Theme</u> <i>Trophy design reflects theme selected for trophy</i>	<u>Aesthetics</u> <i>Create an example trophy to show its detail</i>	<u>Creativity</u> <i>Unique representation of the theme</i>	<u>Practicality</u> <i>Size constraint between 12" x 12" x 12"</i>
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These will be skilled on a scale of 1-5, from 1 = weak to 5 = strong.

Intermediate Division

Improving the Pringles Can

- Your goal is to make an innovative product to improve the overall experience of removing Pringles from the can without ruining the perfect stack.
- Requirements: The product needs to hold the Pringles snugly and needs to accommodate people's hand sizes. Keep the price of production low - this can't be something that costs hundreds of dollars!

Rubric

 CADTable Intermediate Judging Rubric

Advanced Division

Design an Apartment Complex

- Build an apartment complex that combines high density with comfort, collaboration, and a green footprint for an estimated 1000 residents

Rubric

Renewable technologies	Reduction in waste	Small footprint	Realistic Design
Open spaces	Walkability	Resources used to build	Energy-saving methods



These will be skilled on a scale of 1-5, from 1 = weak to 5 = strong.

Submission and Judging

Submission Portfolio

The following elements are required in the submission to Devpost:

- Design STEP File
- URL to project (Onshape) or editable project file (example: .f3z)
- Up to 4 Images
- 2 minute Video
- Engineering Notebook (Optional)

As Devpost only allows the submission of one file, you will need to put these files into a editable folder link (preferably Google Drive) onto Devpost.

Design STEP File

- Please export a STEP file and include this as part of your portfolio.
- Please ensure that this STEP file is viewable in Onshape (i.e. try uploading it to Onshape yourself) to make sure that judges can view it properly and it appears as desired.

Images

- Other than the raw STEP file, we also ask that you produce 4 images from your desired perspectives and include these as part of your portfolio.
- These can include photorealistic renders using software such as Fusion 360, and may include your design in a real-world background. We request that you include at least one solid color background for judging purposes.
- Please note that these images **are not required**; if you do choose to include them, however, you may include a maximum of 4.

2 Minute Video

- Video that details the following
 - Your design choices



- Why your design meets rubric requirements
- Anything else you want the judges to know
- Required for novice, intermediate, and advanced divisions, but graded more harshly for the advanced division.

Engineering Notebook (Optional)

- Along with your STEP file and images, you may include a short-form documentation of your design process and an explanation of your product.
- This notebook will be evaluated for the design process and rationale behind the product as part of the criteria for judging.
- This will only help improve your score and will not hinder it.
- Up to 2 pages in length with reasonable font size.

Judging

Each submission will be judged by a panel of judges specific to the category. Each judge will give their own aggregated score based on the rubric, and then the score across the three judges will be averaged to obtain a final score.

Participants will be ranked based on this average score. The top 5 submissions will be reevaluated to ensure an accurate final ranking. Prizes will be awarded to the top scorers in each category.