

Computer Aided Design Level 2 Participant Resource Sheet



Computer Aided Design (CAD) is the use of computers to create, analyze and document a design. These processes are valuable in understanding how parts of a robot work together and in the manufacturing of the parts to build a robot.

This Level 2 badge is designed to introduce participants CAD processes. To earn the badge, participants must complete all tasks. Any CAD software program, such as Solidworks, Autodesk Inventor or PTC Creo can be used. Teams should consult the FIRST Resource Library at www.firstinspires.org for the current list of supported products and links for licensing and installation.

It is highly recommended that participants earn the CAD Level 1 badge prior to working on the CAD Level 2 badge.

Complete all tasks and review with a mentor.

Name: _____ Email used for badges: _____

Badge Completed Date: _____ Date Submitted: _____

Task	Mentor Sign and Date
Import robot parts from STEP files. Include the following: Origin, what they mean, used for common parts and catalog items and where to retrieve.	
Mate 3 EXISTING parts constraining 6 degrees of freedom.	
Mate 1 object on the surface using coincident	
Demonstrate 1 mate on center of circle	
Set part properties for both material and units	
Find total weight using CAD software and center of gravity on an FRC robot subsystem.	
Create an assembly drawing with complete parts list and report in a BOM (Bill of Materials) table<	