



Robot Build Process



Suggested Process to Build a Competitive VEX U Robot

Step 1 – Form team leadership

Step 2 – Research and brainstorm the game. Watch the game video, learn the rules, and how the game is played.

Step 3 – Select one team member to be the programmer. Select your choice of programming software.

Example: To learn EasyC, tutorials are on the disk and online at Intellitek.com. Each software company has online tutorials.

The ROBOTC user manual may be found at: <http://help.robotc.net/WebHelpVEX/index.htm>

Step 4 – (Done at the same time as Step 3) Build some subsystem prototypes. Learn all the parts and what they do. DO NOT build robots. Learn how to pick up items and how you want the robot to move.

Step 5 – As a group, decide on a path of design. The team should have been keeping an Engineering Notebook. Doing so makes this process easy and fast.

Step 6 – Build chassis and drive system. Use examples from a variety of resources.

Step 7 – Programming students should be using parts plugged into a Cortex to practice coding motor reactions using the competition template.

Step 9 – Build your end effectors or mechanism from drawings.

Step 10 – Using the Cortex and a simple program that the programmers have written make the device move. Will it do what you wanted? NO! Redesign until it does.

HINT: Go online and search what others are doing. Get ideas. Use the VEX Forum to ask questions about any problems you encounter.

Step 11 – Complete the robot. Mount electronics and battery. LABEL ALL WIRES AND MOTORS!

Step 12 – Bling the robot!

Hints:

- ALWAYS check your size. Build smaller.
- Use approved VEX EDR parts.
- Select a Battery Boss to manage the batteries.
- Practice, Practice, Practice.
- **Time:** A simple "I do one thing very well" robot will take 20 hours for a novice team. Add 10 hours if you try to do two things well. Three things well... Good Luck!