

Suggested Steps

Follow these suggested steps to build a competitive VEX Robotics Competition Robot.

Step 1 – Select your team leadership.

Step 2 – Watch the game video, read the game manual to learn the rules and to understand how the game is played. Determine all the ways that points may be scored. **Record what you learn in your notebook.**

Step 3 – Brainstorm ways to play the game and things you will want your robot to be able to do. Be sure to record the various brainstorming ideas in your Engineering notebook.

Step 4 – Select a team member to be the student programmer. Select your choice of programming software. Each software company has online tutorials.

- To learn ROBOTC, tutorials are online at <http://www.robotc.net/>.
- To learn EasyC, tutorials are online at Intellitek.com.

Step 5 – (Done same time as Step 4). Build some prototypes of subsystems. 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. Remember to record results in your notebook.

Step 6 – As a group, decide on a design. All members should contribute to your engineering notebook. It makes this process easy and fast.

Step 7 – Build your chassis and drive system. Research what others have done in the past.

Step 8 – 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 and other mechanisms from your drawings. Be sure your drawings are included in your Engineering notebook!

Step 10 – Using the Cortex and a simple program that the programmers have written make the device you built in step 9 move. Will it do what you wanted? If not, then redesign until it does.

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

Step 11 – Assemble your entire robot. Mount electronics and battery. LABEL ALL WIRES AND MOTORS!

Step 12 – Bling the robot! Be sure that all decorations are non-functional.

Hints:

- ALWAYS check your size – building to 17-1/2" x 17-1/2"x17-1/2" in VRC is a good practice.
- Use only approved VRC 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!