This robot is designed so that it can be built quickly and driven around either autonomously or with the V5 Controller.
Parts Needed

Can be built with:

- VEX EDR V5 Classroom Starter Kit

- 3x - 2x2x20 U-Channel
- 2x - Angle 2x2x14x20
- 2x - 3 in Shaft
- 2x - 4 in Shaft
- 4x - Bearing Flats
- 4x - 1 Post Hex Nut Retainer w/ Bearing Flat
- 6x - 4 Post Hex Nut Retainer
- 2x - 4 in Wheel
- 2x - 4 in Omni Wheel
- 3x - 300mm V5 Smart Cable
- 8x - High Strength Shaft Insert
- 4x - 0.375 in Spacer
- 4x - 0x2 Connector Pin
- 14x - 8-32 Nut
- 12x - Rubber Shaft Collar
- 16x - 8-32 x 0.375 in Screw
- 2x - 8-32 x 0.5 in Locking Screw
- 2x - 8-32 x 1.5 in Locking Screw
- 2x - V5 Smart Motor
- 1x - V5 Battery Cable
- 1x - V5 Robot Brain
- 1x - V5 Radio
- 2x - V5 Battery Clip
- 1x - V5 Battery
2x - B-32 Nut

2x - B-32 x 0.375 in Screw

2x - 4 Post Hex Nut Retainer

2x - 2x2x20 U-Channel

1x - Angle 2x2x14 x 20
2x - B-32 Nut

2x - 8-32 x 0.375 in Screw

2x - 4 Post Hex Nut Retainer

1x - Angle 2x2x14x20
2x - 8-32 Nut
2x - 8-32 x 0.375 in Screw
2x - 4 Post Hex Nut Retainer
1x - 2x2x2x20 U-Channel
2x - #8-32 Nut

2x - #8-32 x 0.375 in Screw

2x - 1 Post Hex Nut Retainer w/ Bearing Flat
2x - 8-32 Nut
2x - 8-32 x 0.375 in Screw
2x - 1 Post Hex Nut Retainer w/ Bearing Flat
2x - Rubber Shaft Collar

2x - Bearing Flat

2x - 4 in Shaft
1x - 0.5 in Spacer

1x - 8-32 x 1.5 in Screw
2x - Bearing Flat
1x - Step 6 Sub-Assembly
1 x - 0.5 in Spacer

1 x - 8-32 x 1.5 in Screw
1x - 0.375 in Spacer
2x - Rubber Shaft Collar
1x - 4 in Wheel
2x - High Strength Shaft Insert
1x - 0.375 in Spacer
2x - Rubber Shaft Collar
1x - 4 in Wheel
2x - High Strength Shaft Insert
1x - Rubber Shaft Collar
1x - 3 in Shaft
1x - 0.375 in Spacer

2x - Rubber Shaft Collar

1x - 4 in Omni Wheel

2x - High Strength Shaft Insert
1x - Rubber Shaft Collar

1x - 3 in. Shaft
1x - 0.375 in Spacer
2x - Rubber Shaft Collar
1x - 4 in Omni Wheel
2x - High Strength Shaft Insert
1x - V6 Radio

2x - 8-32 x 0.375 in Screw
4x - 0x2 Connector Pin

1x - V5 Robot Brain
Build Instruction Tips

Check the Appendix for info on how to use the new Hex Nut Retainers.

Step 4: The green icon indicates that the build needs to be flipped over (upside down).

- Step 6: Only one of the two sub-assemblies made in this step is used right now. The other will be used later in step 9.
- Step 7: Make sure your Smart Motors are oriented in the correct direction (screw holes facing the outside of the build and the shaft hole towards the inside).
- Step 10: Make sure your Smart Motors are oriented in the correct direction (screw holes facing the outside of the build and the shaft hole towards the inside).
- Step 18: The green icon indicates that the build needs to be rotated (180 degrees).
- Step 20: The blue call out shows what the orientation of the Robot Brain should be if the build were flipped right side up. Make sure the 3 wire ports on the Robot Brain are facing the V5 Radio!
• Step 22: The green call outs indicate which port on the Robot Brain to plug each device into using their respective cable.