



Swift Switch: Motorized Drawbridge

Use a motor and a switch from your VEX GO Kit to build a swift and efficient drawbridge. Can you make it the fastest and smoothest?

Step by Step

1. Construct a motorized drawbridge from your VEX GO Kit. For example, [view the build here as a starting point](#).
2. Remember, a drawbridge is intended to be a movable pathway over a gap. Your drawbridge must allow passage when lowered, but no entry when raised.
3. Use a timer to measure how long it takes for the drawbridge to fully raise from a flat position once the switch is activated.
4. Measure again how long it takes for the drawbridge to lower back to the flat position after the switch is reversed.
5. The goal is to make both these actions (raising and lowering) as fast as possible while ensuring the drawbridge operation remains smooth.
6. Once you've measured the speed of operation, experiment with different setups and modifications to your drawbridge design. Retest the speed after each modification. The aim is to improve the speed and smoothness of the drawbridge operation through these iterations.

'LEVEL UP'

- **Bigger Gap** - Can you make your drawbridge span a larger gap? Increase both the rope to raise/lower the bridge, as well as the length of the beam to find out!
- **Slower Motion** - Can you do the opposite of the challenge? Can you try to make your drawbridge raise/lower a lot slower?

Pro Tips

Switching it Up

- The Plus (+) and Minus (--) sign on the GO Switch correspond to the directional signal sent to the motor. Selecting Plus might not raise your drawbridge as intended, rather it will relate to the Plus sign of the motor (or whichever port the motor is plugged into).

Standard: ISTE (4) Innovative Designer - 4d: Students exhibit a tolerance for ambiguity, perseverance, and the capacity to work with open-ended problems.