

Ocean Science Exploration

Lab 4 - Mission Relocation
Image Slideshow



Suggested Role Responsibilities

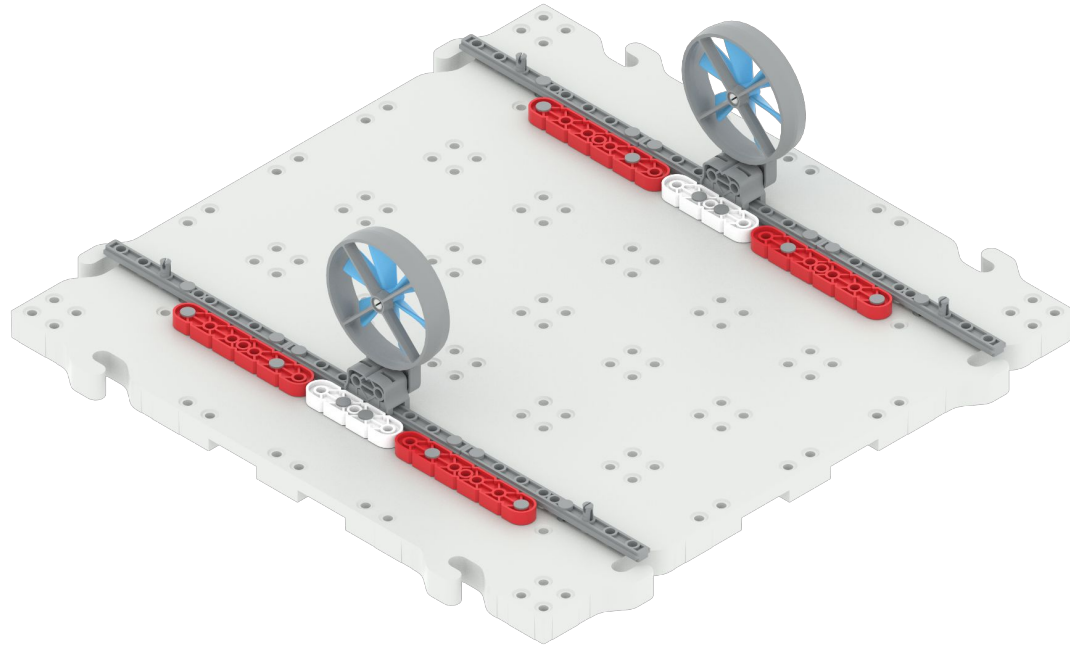
Builder

- Build steps 1-8 and 16-24 of the Competition Base 2.0
- Build steps 1-5, 16-29, and 41-50 of the Competition Advanced 2.0 Hero Robot
- Launch VEXcode GO and connect the Brain to your device
- Take the second turn to drive during Play Part 1

Journalist

- Gather materials for the Competition Base 2.0
- Build steps 9-15 and 25-34 of the Competition Base 2.0
- Gather materials for the Competition Advanced 2.0 Hero Robot
- Build steps 6-15, 30-40, and 51-59 of the Competition Advanced 2.0 Hero Robot
- Take the first turn to drive during Play Part 1

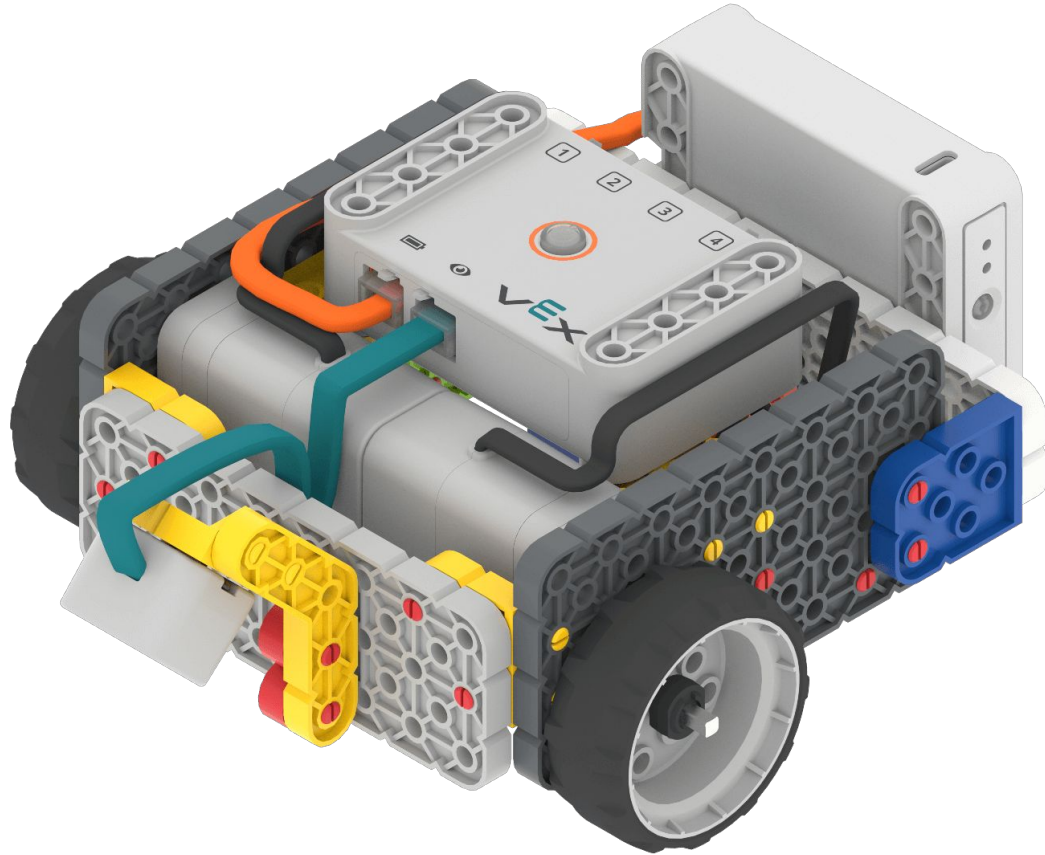
Turbines on the Field



Opening the Clam and Moving the Pearl



Competition Base

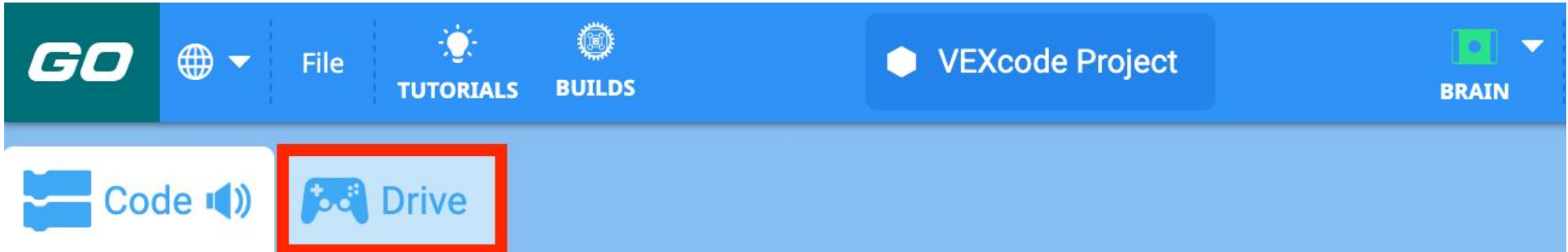


Competition Advanced Hero Robot



Mission Relocation Video

Select the Drive Tab



Select the Motor option for Port 2

Drive Mode

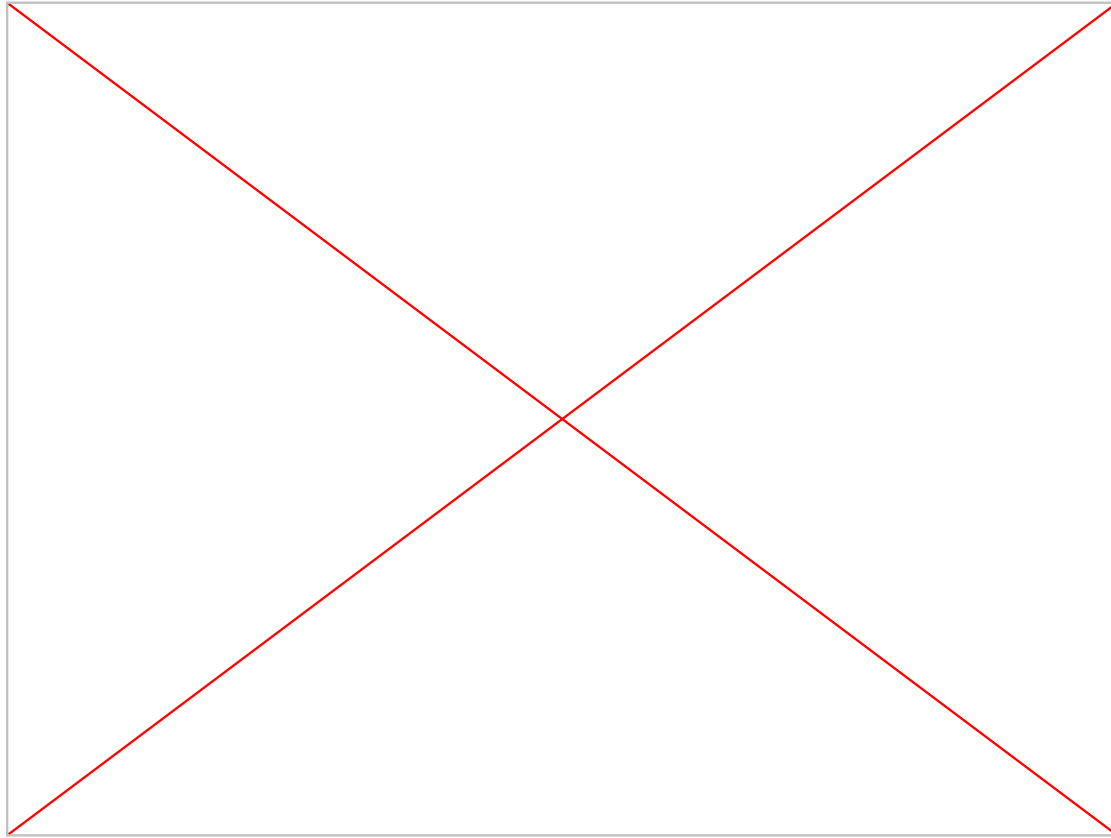
TANK DRIVE LEFT ARCADE RIGHT ARCADE SPLIT ARCADE

Port 2 Timer Port 3

LED BUMPER	RESET TIMER	ELECTROMAGNET
MOTOR	00:00.0	MOTOR
	START TIMER	

Port 2 Port 3

Select the Drive Mode



Drive Port 2 Motor controls

Drive Mode

TANK DRIVE LEFT ARCADE RIGHT ARCADE SPLIT ARCADE

Port 2 Timer Port 3

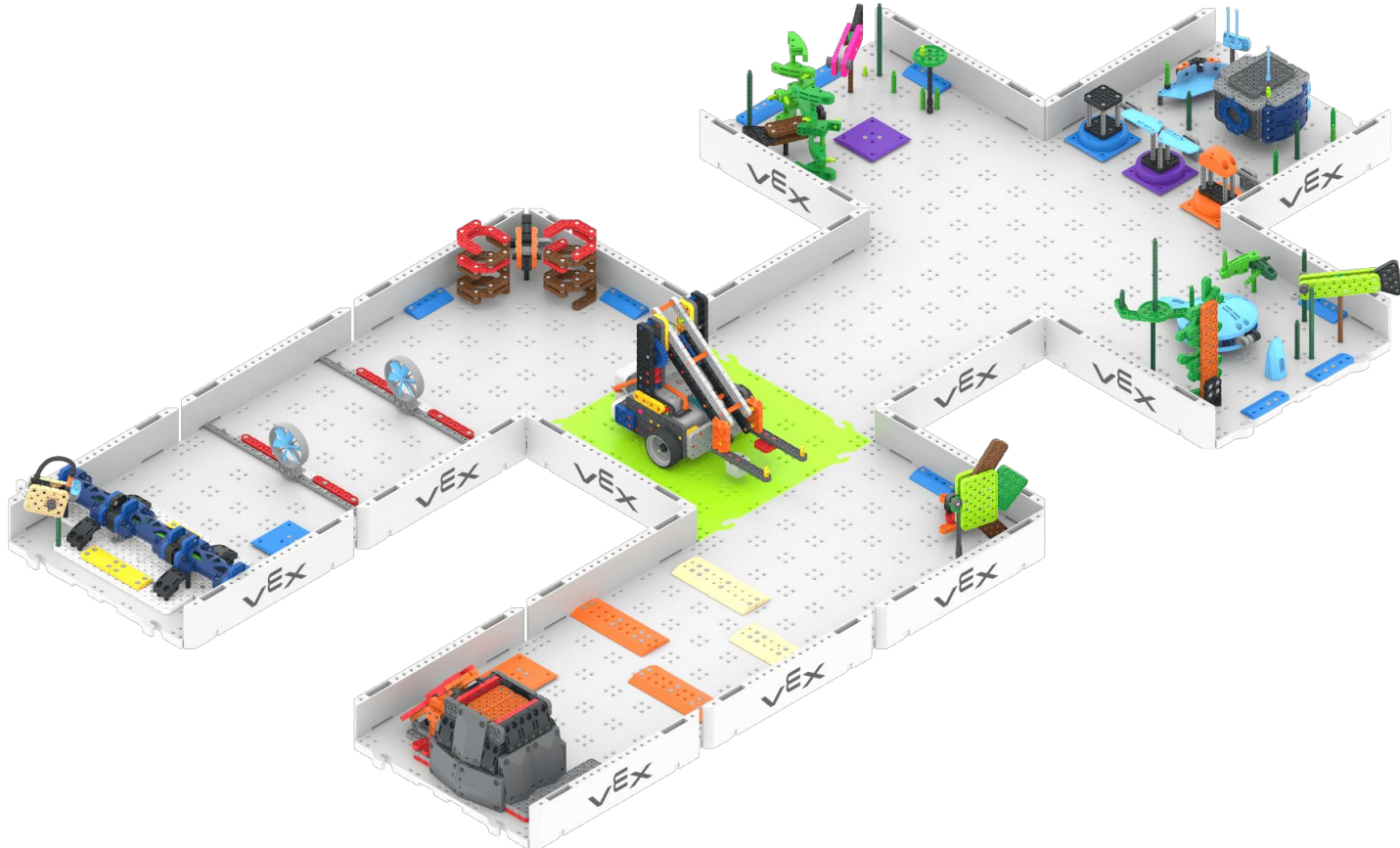
LED BUMPER RESET TIMER 00:00.0 ELECTROMAGNET

MOTOR START TIMER MOTOR

Port 2 Port 3

The screenshot displays the VEX GO control interface. At the top, the 'Drive Mode' section contains four buttons: 'TANK DRIVE', 'LEFT ARCADE', 'RIGHT ARCADE', and 'SPLIT ARCADE'. Below this, the interface is divided into three columns: 'Port 2', 'Timer', and 'Port 3'. The 'Port 2' column contains 'LED BUMPER' and 'MOTOR' buttons. The 'Timer' column features 'RESET TIMER', a digital display showing '00:00.0', and 'START TIMER' buttons. The 'Port 3' column includes 'ELECTROMAGNET' and 'MOTOR' buttons. On the left and right sides of the interface are joystick icons. A red box highlights the 'Port 2' joystick, which has a green arrow pointing up and a red arrow pointing down. A similar green and red arrow pair is visible next to the 'Port 3' joystick.

Ocean Science Exploration - Stage 4 Field



Mission Relocation Practice Activity

VEX GO Practice Activity



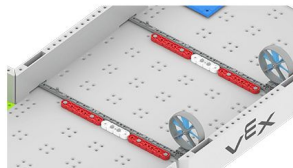
Mission Relocation

Practice Goal:

Move both turbines to the white beam.

Step by Step

1. Decide which turbine you are going to first. Then think about how you will move the turbine to the white beam in the middle of the tile. Make a plan for where and how you will use drive controls to move the turbine.
2. Power on your Hero Robot and connect it to VEXcode GO. Place your robot on the green starting tile.
3. Open the Drive Tab in VEXcode GO and select your driver configuration. Select the motor button in Port 2, as shown to the right.
4. Drive your robot according to your plan, to move one turbine and then continue to move the second turbine.
5. What worked well? What do you want to do differently? Continue to practice moving the turbines.



'LEVEL UP'

- **How far?** - Using a new strategy, move the turbine from the red beam to the next red beam. Did your strategy change or stay the same?
- **Timed Trial** - How fast can you move both turbines? Is there an easier turbine to start with? What is your timed strategy?

Pro Tips

Drive Modes

- Try out different drive modes to see which is most comfortable for you, and makes it easier to manipulate objects on the Field. Different modes may work better for different drivers!

Standard: ISTE (1.7) Global Collaborator - 1.7c: Students contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.

Mission Relocation Competition Activity

VEX GO Competition Activity



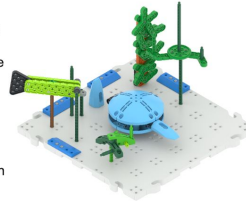
Mission Relocation

Competition Goal:

Score as many points as you can in 1 minute by moving both turbines, opening the clam and delivering the clam to the green tile.

Competition Rules:

- Each task is worth 1 point:
 - Move the 1st turbine from the red to the white beam.
 - Move the 2nd turbine from the red to the white beam.
 - Open the clam.
 - Deliver the pearl to the green tile.
 - End the match with the Hero Robot on the green tile.
- Each match begins with the Hero Robot on the green tile.
- Stop driving after 1 minute. Count the tasks that are scored, and the position of the robot on the Field at the 1 minute mark to score the match.
- If teams score the same number of points, the team that can finish the tasks the fastest wins.
- The robot cannot be touched while it is driving during the 1 minute match. If the pearl falls out of the field, it can be hand placed back onto the Field.



Pro Tips

Timed Tasks

- Game strategy is important in this competition. Use your time wisely!
- In this competition, where the robot ends the match is important! Remember to factor that in as you plan your path for your match.

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Example of a Match Order sheet



Fill in each team's name beside the competition order numbers.

Order	Team	Score
1	Team A - Alex and Tiernan (Driver - Tiernan)	
2	Team B - Mike and Austin (Driver - Austin)	
3	Team C - Jason and Lauren (Driver - Lauren)	
4	Team D - Tim and Alaina (Driver - Alaina)	
5	Team A - Alex and Tiernan (Driver - Alex)	
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