

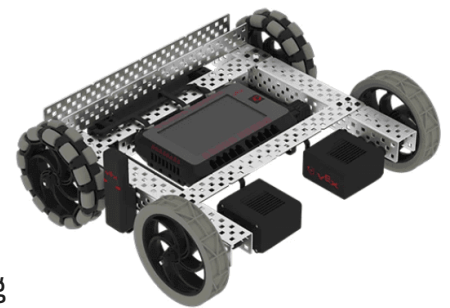
Drive the Speedbot to deliver pizzas to houses in this tasty challenge!





Challenge: Deliver a Pizza to Each House on the Field

To make a delivery, the robot will carry a pizza from the Pizza Shop to a house, pause to drop it off, and then return to the Pizza Shop (shown in yellow above).

Set Up and Rules:

- Complete the challenge using your VEX V5 Speedbot and the built-in Drive Program.
- Pizzas can only be delivered one at a time.
- The robot can start anywhere in the Pizza Shop.
- If the robot touches a house, or if a pizza falls off the robot during delivery, stop driving and try again.
- Reset the Field before each run.



Drive Mode Reminders	
	<p>Left Arcade</p> <p>Drive forward, reverse, left, and right using only the left joystick.</p>
	<p>Right Arcade</p> <p>Drive forward, reverse, left, and right using only the right joystick.</p>
	<p>Split Arcade</p> <p>Drive the robot left and right using the left joystick, and forward and reverse using the right joystick.</p>
	<p>Dual Drive</p> <p>Drive the robot's left motor using the left joystick, and the right motor using the right joystick.</p>

Hands-on time for this activity is approximately one hour.

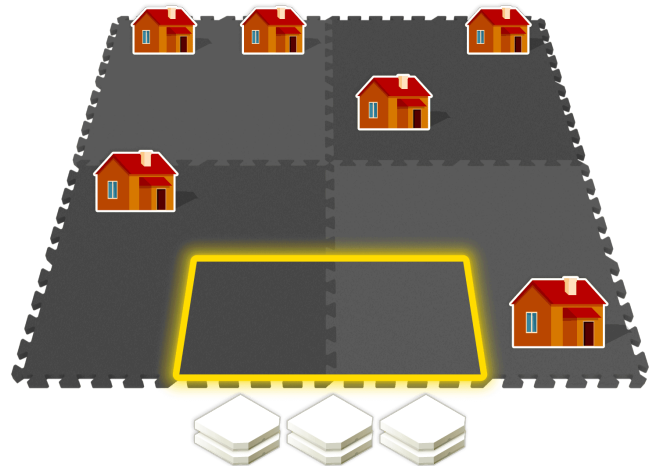
Preparing for the Activity

Additional materials needed for each group: (recommended group size is two–three students):

- [Pre-built VEX V5 Speedbot](#)
- A 4-foot by 4-foot Field marked off on the floor using V5 Field tiles or masking tape
- 6 objects to represent pizzas (ie. books, beanbags, or other objects that fit on top of the robot)
- 6 objects to represent houses (ie. printed images of houses to be placed on the Field)

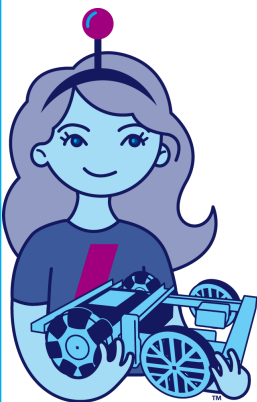
Set Up the Field As Shown:

- Mark the Pizza Shop with tape (shown in yellow to the right)
- Place 6 houses on the Field
- Place 6 pizzas beside the Pizza Shop, outside the Field



Facilitating Pizza Delivery

- 1. Introduce the activity.** Share the context here to help students connect what they will do with the robot to real-world applications.



Robotics challenges can look simple at first: drive forward, turn, hit the target. But once the timer starts, engineers quickly discover that small decisions can make a big difference. In Pizza Delivery, your team will take on a robotics challenge with clear constraints: a field to navigate, pizzas to deliver, and a limited amount of time to deliver pizzas to the right locations. To succeed, you will need more than driving skill. You will need a plan, communication, and a willingness to adjust your strategy based on what you learn.

As you work, focus not only on what your robot does, but on how your team solves problems together. Share ideas, test strategies, learn from each run, and look for ways every team member can contribute.

2. **Introduce how to drive the robot using the Driver Control Program.** Walk students through the steps to begin driving the robot. [Use this article for reference.](#)
 - a. Have students explore the different ways the robot can move using the joysticks.
 - b. Show them how to change the Controller Configuration on the V5 Brain. Give them time to practice driving in a square to try out each of the different configurations. They do not need to drive on the fields – driving on the floor is fine for this part of the activity.
 - c. Bring students together to check for understanding using the following prompt:
 - Which configuration was most comfortable for you? Why?

3. **Direct students to start the Pizza Delivery activity:**
 - a. Move around the room and talk with students, asking questions like:
 - What house did you choose to deliver your first pizza to and why?
 - Did it work the first time? If not, what did you do differently the second time?
 - What controller configuration did you use to deliver the pizza?
 - b. The robot can start anywhere inside the Pizza Shop with one pizza loaded onto the robot. The goal is to deliver a pizza to a house, then return to the Pizza Shop to pick up another.
 - When delivering, students may place the pizza beside the house.
 - Only one pizza should be delivered to each house.
 - c. When delivering, the robot should pause for a few seconds so a student can hand-place the pizza at the house. It should pause again at the Pizza Shop so the next pizza can be loaded.
 - d. The order in which pizzas are delivered does not matter. There are many valid approaches and combinations as long as all six pizzas are delivered.

Extending the Activity

- **Have students build the robot as part of the workshop.** Allow approximately 45 minutes for groups to build the [Speedbot](#).
- **Create a workshop challenge!** Have a friendly competition to see which group can deliver pizzas the fastest! You can use the [V5 Leaderboard](#) to keep track of students' progress in a central location.