

REC for Cortex

1.14 Activity: Using Wireless Control

Name: _____ Class/Period: _____ Date: _____

Overview:

In this activity you will mount the receiver onto the BaseBot and troubleshoot basic robot behavior.

Duration:

25 Minutes

Materials:

Qty	Description
1	Assembled BaseBot from Activity 12
1	REC 1 Bundle

Procedures:

1.14.1: Install the Batteries

- 1 Using a screwdriver, remove the cover from the rear of the controller.
- 2 Following the diagrams inside the case, insert 6 fully-charged AAA batteries.
- 3 Replace the battery cover.



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1.14.2: Installing the Wireless Keys

Before installing the wireless keys, you must first synchronize your devices.

- 1 Plug one end of the USB cable into the controller.
- 2 Plug the other end into the joystick.



- 3 Turn on the joystick.

The controller and joystick LEDs will light up. Once the VEXNet light turns solid green, the devices are synchronized.

- 4 When you are finished, turn the joystick off.
- 5 Insert one wireless key into the joystick.
- 6 Insert the other wireless key into the controller.

The BaseBot is now ready for testing.

1.14.3: BaseBot Testing

Caution: Always lift the robot so that the drive wheels are off the ground before turning the power on. This will reduce the risk of an accident from unexpected movement.

- 1 Slide the power switch on the Vex controller to the ON position.

Note: The battery power light on the front of the controller should be green indicating a properly charged battery. If the light is red, it is time to recharge the battery.

- 2 Place the BaseBot on the ground.
- 3 Push the left joystick up (channel 3).
 - Did the left side of the BaseBot move forward?
- 4 Push the right joystick up (channel 2).
 - Did the right side of the BaseBot move?

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If either of side of your robot does not respond to the transmitter, review all the wiring connections you made in the last activity to make sure everything is correct.

Once you verify that both sides are responding to the input of the transmitter:

- 5 Push both joysticks up and verify that the robot moves forward.
- 6 Push both joysticks down to move the robot backwards.
- 7 Push one joystick up and the other down in order to turn the robot.

Congratulations, you have successfully built your first robot!

1.14.4: Engineering Notebook

Make a sketch of the transmitter in your engineering notebook and map which channels control the two drive motors on the BaseBot.

Questions:

- | | |
|-------------------|--|
| Question 1 | Which channel on the transmitter controlled the left drive motor on the BaseBot? |
| Question 2 | How do you make the robot move backwards? |