

VEX IQ Robot Soccer

Check Your Understanding Questions Answer Key

Correct answers are highlighted.

Lesson 2:

Learn Questions

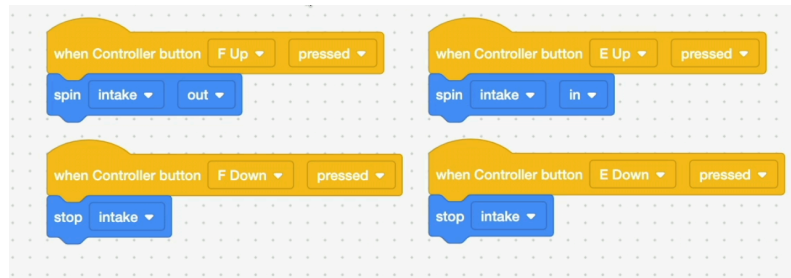
1. Which of the following best describes a manipulator?
 - a. Two motors that function as if they are one device
 - b. A mechanical sensor that reports if it is pressed or not pressed
 - c. A mechanism designed to manipulate an object to complete a task
 - d. A sensor capable of detecting 'capacitive' touch
2. The effectiveness of a manipulator is dependent on _____.
 - a. The object it is meant to interact with
 - b. The task it is meant to accomplish
 - c. The number of pins used to build it
 - d. Both A & B
3. Which of the following is NOT a consideration when designing a manipulator?
 - a. The color of the object being manipulated
 - b. The size and shape of the object being manipulated
 - c. The way the object is meant to be moved
 - d. The weight of the manipulator on your robot
4. A _____ manipulator has _____ attached to it.
 - a. Active; no motors
 - b. Passive; no motors
 - c. Passive; a motor
 - d. Intake; no motor
5. Which of the following is true of an active manipulator?
 - a. It has a power source or motor attached to it
 - b. It is not movable
 - c. It has no motors attached to it
 - d. It is not useful for lifting an object
6. An intake is an example of a _____ manipulator.
 - a. Drivetrain
 - b. Active

- c. Passive
- d. Unpowered

7. Which of the following is NOT a consideration when designing an intake for your robot?

- a. The parts you have available
- b. The weight of the object you are trying to collect
- c. The shape of the object being collected
- d. The color of the object being gathered

8. In the project shown here, what will the intake do when the E up button is pressed?



- a. The intake will stop spinning
- b. The intake will spin out to push out an object
- c. The intake will spin in to pull in an object
- d. The intake will slow down to 50% velocity

9. Which of the following is NOT an example of a usage for an intake on a robot?

- a. To collect an object and move it to a new location
- b. To push out an object to score a goal in a game
- c. To navigate around an immovable object
- d. To collect multiple objects at once to move them across a Field

10. Which of the following best describes a motor group?

- a. It is a type of gripper that is used to pick up and transport objects
- b. It consists of two motors that are going to function as if they are one device
- c. It is a decision made from observable and measurable data
- d. It is a device where each motor must be coded individually

11. Which of the following is NOT an advantage of using a motor group?

- a. It enables two motors to be programmed as one device
- b. It can be controlled using one or two buttons on the Controller
- c. It makes it more difficult to code your robot to move
- d. It can make your robot have more power, or lifting ability

12. To make a motor group, you must have two motors that are _____.

- a. Connected to the same port on the Brain

- b. Spinning in opposite directions
- c. Disconnected to each other
- d. Mechanically connected

13. Which of the following is NOT a possible mechanical connection for a motor group?

- a. Beam and plate
- b. Gear train
- c. Chain and Sprocket
- d. Two motors sharing a shaft

14. Which of the following is the correct order of steps to configure a motor group in VEXcode IQ?

- a. Open the Help; select 'Motion' blocks; then select the [Spin motor] block
- b. Open the Devices window; select the generation of your IQ Robot Brain; select 'Add a Device'; select 'Motor Group'; select the ports on the Brain that your motors are connected to; then select 'Done'
- c. Open the Devices window; select 'Add a Device'; select 'Bumper Switch'; then select 'Done'
- d. Open the Devices window; then select 'Controller'

15. Which of the following is TRUE of adding your motor group to your Controller?

- a. You can select the buttons you wish to use to control your motor group, and the direction of movement for those buttons
- b. The left joystick is automatically selected, and cannot be changed in any way
- c. You must configure your Controller before configuring the motor group
- d. The buttons will control the individual motors in the group, not the direction of movement

Challenge Activity Questions

1. What size Field is One-on-One Soccer played on?

- a. 3' x 3'
- b. 4' x 4'
- c. 4' x 6'
- d. 3' x 4'

2. Which of the following statements is true about the One-on-One Soccer Challenge?

- To earn one (1) goal, the cube must be partially placed through the opposing team's goal.
- To earn one (1) goal, the entire cube must be placed through the opposing

team's goal. No part of the cube can remain in contact with the Field.

- To earn one (1) goal, steal the cube from the opposing team's robot.
- To earn five (5) goals, the cube must be partially placed through the opposing team's goal.

3. Where does your team's robot start in the One-on-One Soccer Challenge?

- a. The robot starts in the corner of the Field.
- b. The robot starts inside your team's goal.
- c. The robot starts in front of your team's goal, in the square on the left side.
- d. The robot starts in front of the opposite team's goal, in the square on the left side.

4. What happens when a goal is scored in the One-on-One Soccer Challenge?

- a. The game is over.
- b. The timer stops and the Field is reset.
- c. The timer continues to run.
- d. The robots switch sides of the Field.

5. In the One-on-One Soccer Challenge, the robot must:

- a. Fit completely inside of the starting square at the beginning of the match, including all attachments and/or modifications
- b. Include attachments made only with IQ parts
- c. Extend past the lines of the starting square
- d. a and b

Lesson 3: Robot Soccer Competition

Competition Questions

1. What size Field is Robot Soccer played on?

- a. 4' x 6'
- b. 2' x 6'
- c. 1' x 3'
- d. 3' x 4'

2. Which of the following correctly describes the Robot Soccer Field Setup:

- a. Robot Soccer is played on a Field with no walls.
- b. Robot Soccer is played on a 4' x 6' Field with walls. Three walls are removed from each short side of the Field to create an opening to represent the red and blue alliance goals.
- c. Robot Soccer is played on a 4' x 6' Field with walls. Walls are removed randomly to create openings to represent goals.
- d. Robot Soccer is played on a 6' x 8' Field with walls on the long sides only.

3. How many robots play in a match of Robot Soccer?

- a. 2 robots vs. 2 robots
- b. 1 robot in a timed trial
- c. 1 robot vs. 1 robot
- d. 4 robots vs. 4 robots

4. Which of the following best describes the goal of the Robot Soccer competition?

- a. To push the opposing alliance's robots off the field through the goals.
- b. To score the most points in 60 seconds of play by moving the cube completely through the opposing alliance's goal.
- c. To move the cube over the walls of the Field as many times as possible.
- d. To score the most points in 60 seconds of play by moving the cube partially through the opposing alliance's goal.

5. How is a goal scored in Robot Soccer?

- a. By disabling the other alliance's robots
- b. By placing the cube partially through the opposing alliance's goal.
- c. By moving the cube to the center of the Field as many times as possible in 90 seconds.
- d. By placing the entire cube through the opposing alliance's goal, with no part of the cube remaining in contact with the Field.

6. What happens when a team scores a goal in Robot Soccer?

- a. The game is over.
- b. The timer stops and the Field is reset.

- c. The timer continues to run.
 - d. The robots switch sides of the Field.
- 7. Which of the following is a violation of the Robot Restrictions?**
- a. Making an attachment for the robot that fits completely inside for the starting square
 - b. Making an attachment with parts from the IQ Kit
 - c. Creating a modification to a robot that extends past the lines of the starting square