BE STEM READY Learning Super Trajectory Robot 3



This robotics course introduces programming, sensors and motion.

The kit includes sensors and programmable components for learning.

sensor, photoelectric sensor, color light, ultrasonic, camera and many building blocks parts. Students can build various building block robots with their imagination, and use graphical programming software to program the robot and experience the joy of hands-on creation.

Learning Target

01

Knowledge goal

Checking code value and programming anchor point stop.

02

Ability goal

Familiar with understanding patrol code value, programming fixed point stop program.

03

Emotional attitudes and values

Understanding of artificial intelligence, ahead of science and technology, use the programming logic to solve life difficult problem.

Learning Target

01

Learning focus

The patrol line encodes value measurement, and the robot completes the task at a fixed point.

02

Learning difficulties

Complete the point stop programming task.

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Course Introduction



Course Introduction



Let's look at a picture. Think about what sensors he's using to distinguish between the black line and the white area.

The Super Track Race is a competition held by the Video Education Center. It mainly uses photoelectric sensors to drive along the black line and complete the tasks shown in the picture along the line.

Course Introduction



Super Track

Meet Super Track Robots

Light sensors, also known as brightness sensors, are included in many tablets and phones. Usually located above the handheld screen, it can automatically adjust the brightness of the handheld screen according to the current brightness of the handheld device. This lecture will build a super track robot, used to patrol black and white.

Teaching New Knowledge



Teaching New Knowledge

The motor rotation Angle, 1 degree =1 code value

Coded value test:

Open E6 -- Test -- Encode Value -- Push the cart on the ground -- Read the code value.

Fixed stop:

The car will stop its patrol automatically after it reaches a certain coded value.

Design Assembly



Design Assembly



Assembly requirements

1. stable structure
2. focus is right
3. shape match

Programming and Debugging



Programming and Debugging

Task1 When you reach mission area 1, sound the buzzer for 3 seconds.

Programming and Debugging

Task2 Reaching mission area 2, the LDE flashes three times.

Programming and Debugging

Task3 Reaching mission area 3, private server motor lifted

Checking Effect



Test Effect



Review the learning content and deepen your impression.

Question 1 The use of coded values?

Question 2 What is robot localization?

Question 3 How does the robot feed back coded values?

Thank you for watching

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