Learning Series

Push-ups



This robotics kit is a building block programming robot developed by ZMROBO. The kit is equipped with various sensors such as sound sensitivity, color, touch, photoelectric, lantern, ultrasonic, camera and a wealth of building blocks. Students can use their imagination to build a variety of building block robots, and use graphical programming software to program the robot and experience the joy of hands-on creation.

Learning Target

01

Knowledge goal

Loop module, application of the loop module.

02

Ability goal

Master the use of the loop module and use the loop module to set up the program.

03

Emotional attitudes and values

Push-ups are a human exercise.

Exercise can enhance people's resistance.

Learning Target

01

Learning focus

Mechanical reciprocating cycle.

02

Learning difficulties

Understand the principle of leverage of the push-up pair, reciprocating cycle.

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Course Introduction



Course Introduction



Let's look at a picture. Thinking?

1. What mechanical principles do you use for push-ups?
2. What are the benefits of push-ups?

It is a basic training in daily exercise and physical education classes, especially in military physical training. Push-ups mainly exercise the muscles of the upper limbs, waist and abdomen, especially the chest muscles. It is a very simple and effective force training method.

Course Introduction



push ups

Know about Push-ups

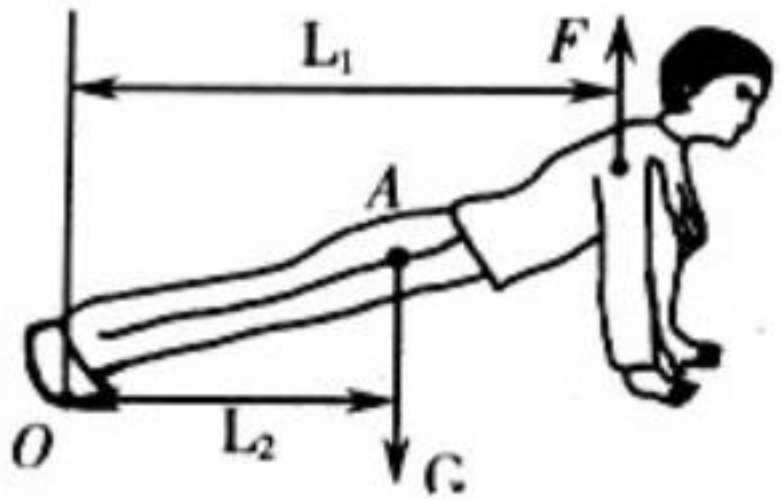
Push-ups (also known as Press-up), this common fitness exercise is called push-ups in mainland China, pushup （ ） in Taiwan, and palm presses （ ） in Hong Kong and Macau. It helps to increase the exercise effect of the pectoralis major.

Task Practice



Task Practice

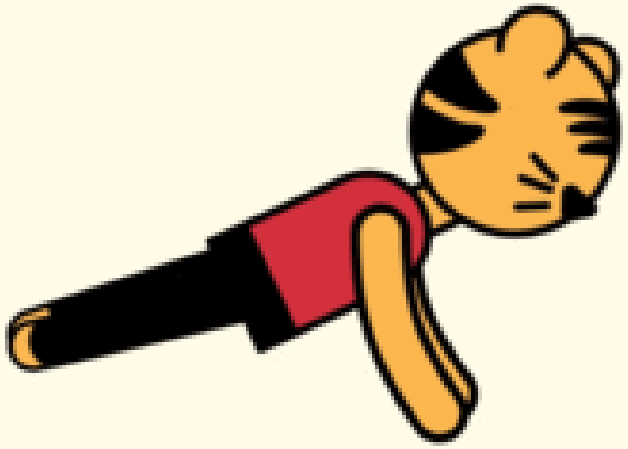
11 leverage principle (saving lever): o is the fulcrum, g is the resistance (the gravity of the human body), l1 is the long arm, l2 is the short arm, and f is the power.



Task Practice

Principle: The reciprocating motion of the reciprocating motion in the vicinity of a certain position is equal to 0 because of a positive stroke and a negative stroke.

Multi-finger mechanical movement repeats, such as pendulum, piston movement, etc.



Design Assembly



Design Assembly



Assembly requirements

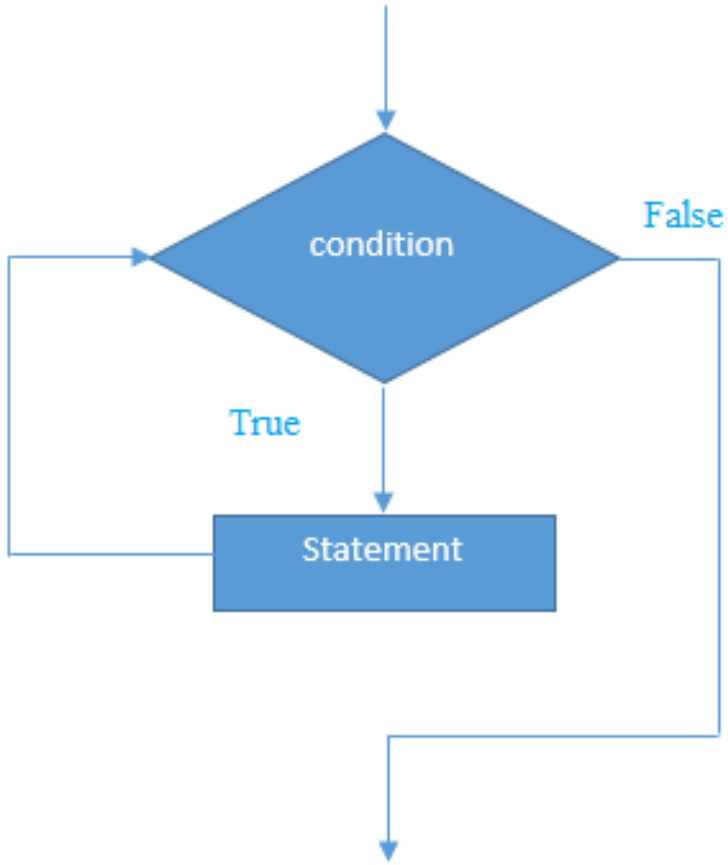
1. stable structure
2. focus is right
3. shape match

Programming and Debugging

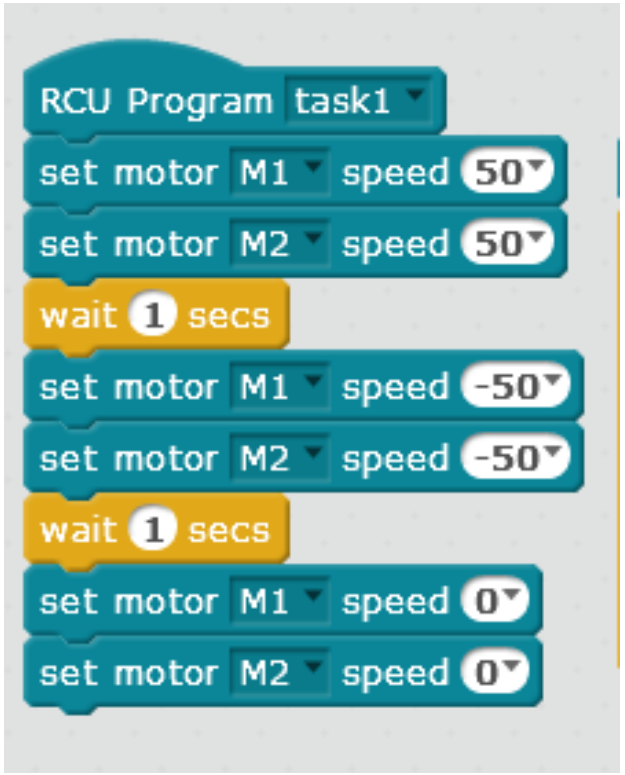


Programming and Debugging



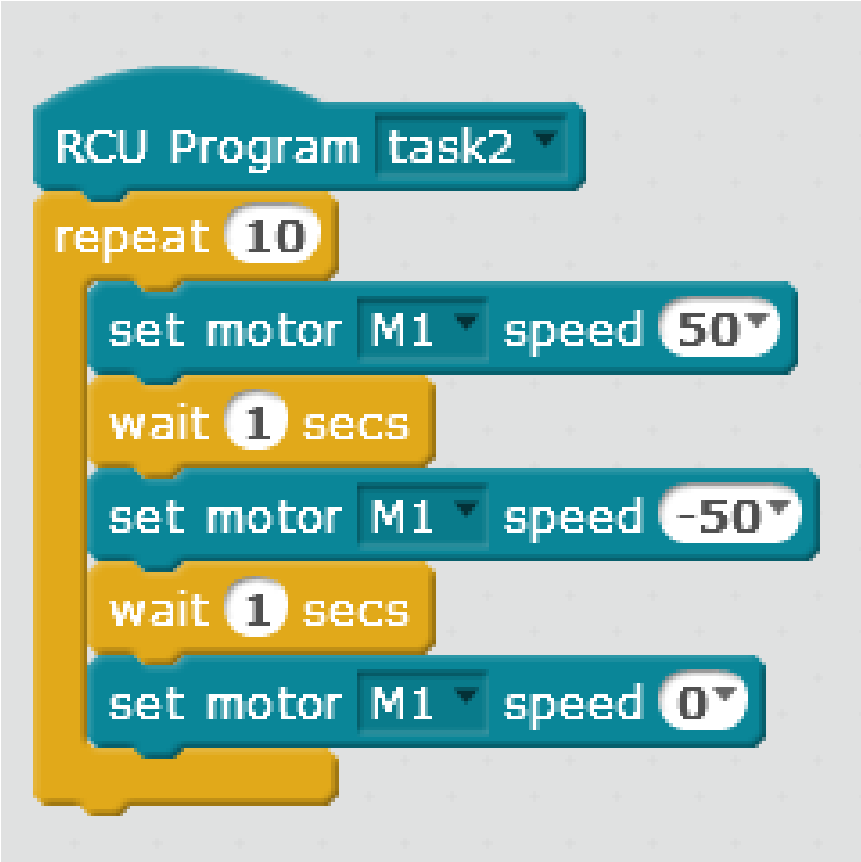


Programming and Debugging



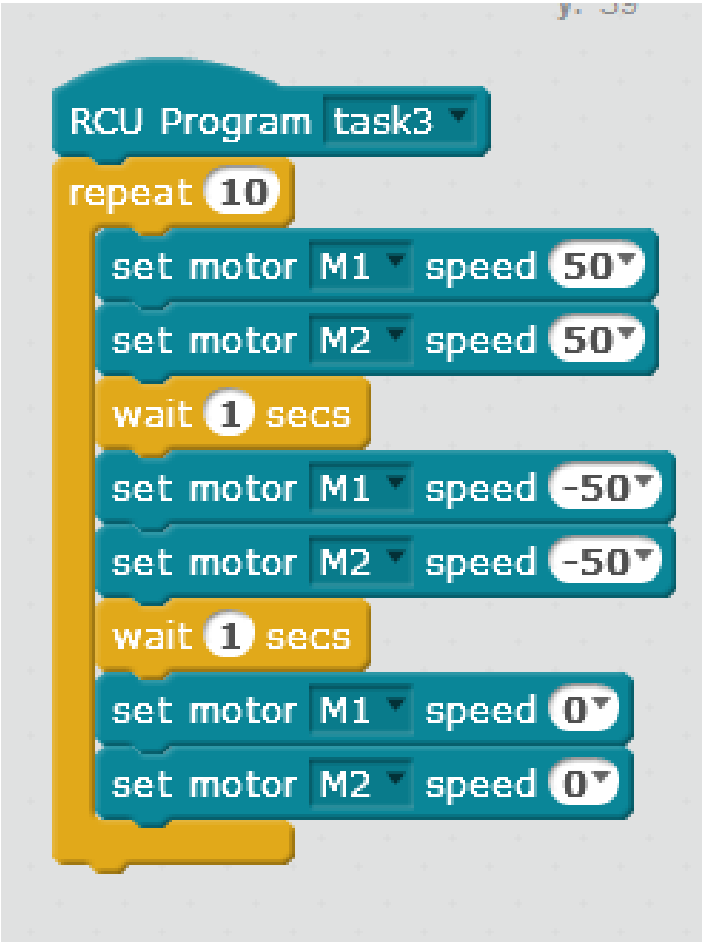
Push-up robot completes a push-up.

Programming and Debugging



The push-up robot repeats 10 push-ups.

Programming and Debugging



The robot repeatedly performs push-ups.

Checking Effect



Test Effect



Review the learning content and deepen your impression.

Question 1 The principle of push-ups

Question 2 What are the benefits of doing push-ups?

Question 3 Mechanical repeat cycle

Thank you for watching

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