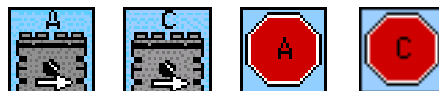


Programming Explorations

Using multiple motors

Working with two motors

It's time for you to try working with a model that has two motors and can move around. Take one of these models. The two motors should be connected to 'output ports' A and C, so you will be making use of the following symbols in your program:



Having separate symbols for each motor means that the motors can be controlled independently, which means that you can control the direction your model goes in.

Your first task is to write a program that makes the model move forward for a few seconds then stop. Here is how you might describe the program in words:

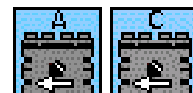
Start the program.
Start motor A.
Start motor C.
Wait for a few seconds.
Stop motor A.
Stop motor C.
Stop the program.

Write this program in ROBOLAB and try it out on your model.

- Does your model move exactly in a straight line? If not, why do you think that might be?
- Does it always move the same distance each time the program is run? (Remember that you can run the program again just by pressing the green RUN button on the RCX. You don't have to download the program twice.)

Moving in reverse

Modify your program so that, instead of stopping after a few seconds, the model goes backwards. Use these two symbols to reverse the motors:



Make the model go backwards for the same length of time as it goes forwards. Only stop the motors right at the end of the program.

- Does your model always end up back exactly where it started? Try this a few times. If it doesn't get back to where it started, why do you think that might be?

What do you think the model will do if you use the following program?

Start the program.
Start motor A.
Start motor C.
Wait for a few seconds.
Stop motor C.
Reverse motor A.
Wait for a few seconds.
Stop motor A.
Stop the program.

Create this program in ROBOLAB and try it out on your model.

- Did it do what you expected?

Making the model turn

Can you work out a way to make the model turn? Have the model move forward a short distance and then turn to the left.

How would you change your program to make your model turn to the right instead of the left?