

Assignment 6 – Basics of motors

For this assignment, you should work in groups of three. Make sure that everyone in your group has a chance to work at the computer.

Problem 1

Write a program that starts the motor running forward and display the text “Forward” on the LCD screen. Each time a button is pressed, the direction of the motor should reverse, and the LCD screen should change to say “Forward” or “Backward” depending on which direction the motor is currently moving.

Note that you can terminate a running program by pressing the enter and escape buttons (the orange button and the one below it) at the same time.

Problem 2

Build a cart-like robot which uses a single motor to turn wheels in order to move forwards or backwards in a line. You will need to find a way to attach the NXT brick to the robot so that it is carried with the robot as the robot moves.

Challenge problem

Once you have a robot which can move itself, write a program which makes the robot move forward as close to 5 feet as possible. If possible, use calculations based on the radius of the wheels to determine how much the wheels should rotate.