

Full Speed Ahead

Introductory Presentation

Opening Activity

Choose one of the objects to the right and in ten or more steps explain how it goes from rest to motion.



Opening Activity

Example of Car:

1. Unlock the driver's door
2. Open the door
3. Get into the driver's seat
4. Close the door
5. Put the key in the ignition
6. Turn the key to start the car
7. Depress the brake
8. Release the parking brake
9. Put the car in drive
10. Release the brake
11. Press the gas



Opening Activity

Example of Person:

1. Person decides they want to run
2. Person finds shoes and socks
3. Person sits down
4. Person puts on socks
5. Person puts on shoes
6. Person ties shoes
7. Person stands up
8. Person places either left or right foot forward
9. Person places other foot forward
10. Person repeats



Discussion Questions

What are some things that would inhibit these objects from moving?

Ankle Injury

Dead Battery

No Wind

Flat Tire

No Gas

What are some ways that robots move?

Wheels

Legs

Propellers

Treads

Discussion Questions

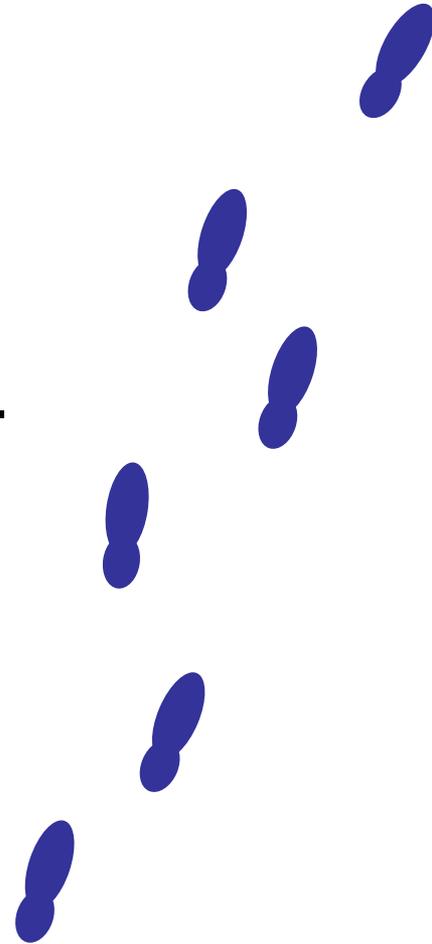
What are some ways that a robot's movement could be inhibited?

- Broken parts
- Obstacles blocking its path
- Improper programming
- No source of energy



Review

- The movement of a robot is determined by its programming.
- The programming will tell the robot what to do step by step.



Preview

There are also many steps to get a robot moving
“Full Speed Ahead.”

We’ll have to think about exactly what we want
our robot to do, in what order it should do these
tasks, and then program it accordingly.



Preview

What five steps would the robot have to take in order to go forward for 2 rotations?



1 Spin left motor

2 Spin right motor

3 Wait until the motors have spun two rotations

4 Stop left motor

5 Stop right motor

Preview

Now lets examine what that would look like in the NXT Educational Programming Software.



1. Spin left motor
2. Spin right motor
3. Wait for 2 rotations
4. Stop left motor
5. Stop right motor

Preview

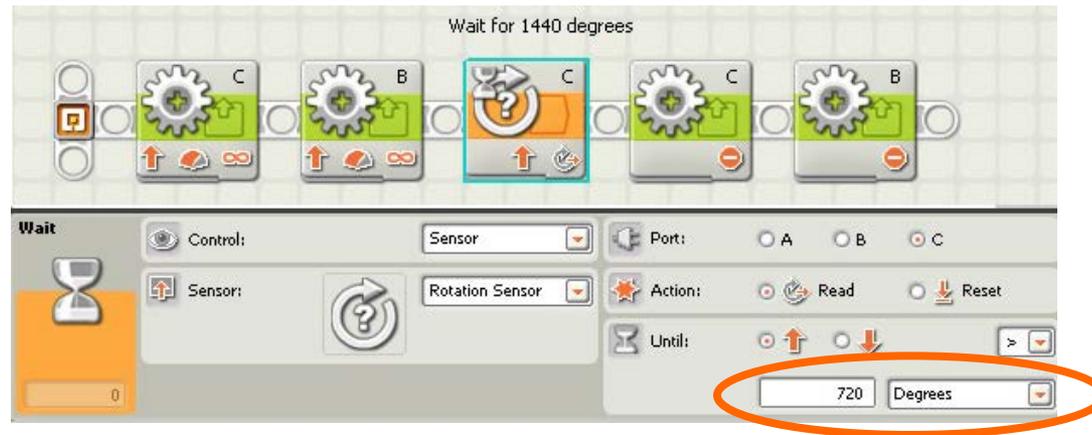
While programming your motor blocks, make sure you select the proper **output ports**, and set both motors to the same **direction** and **power** level.

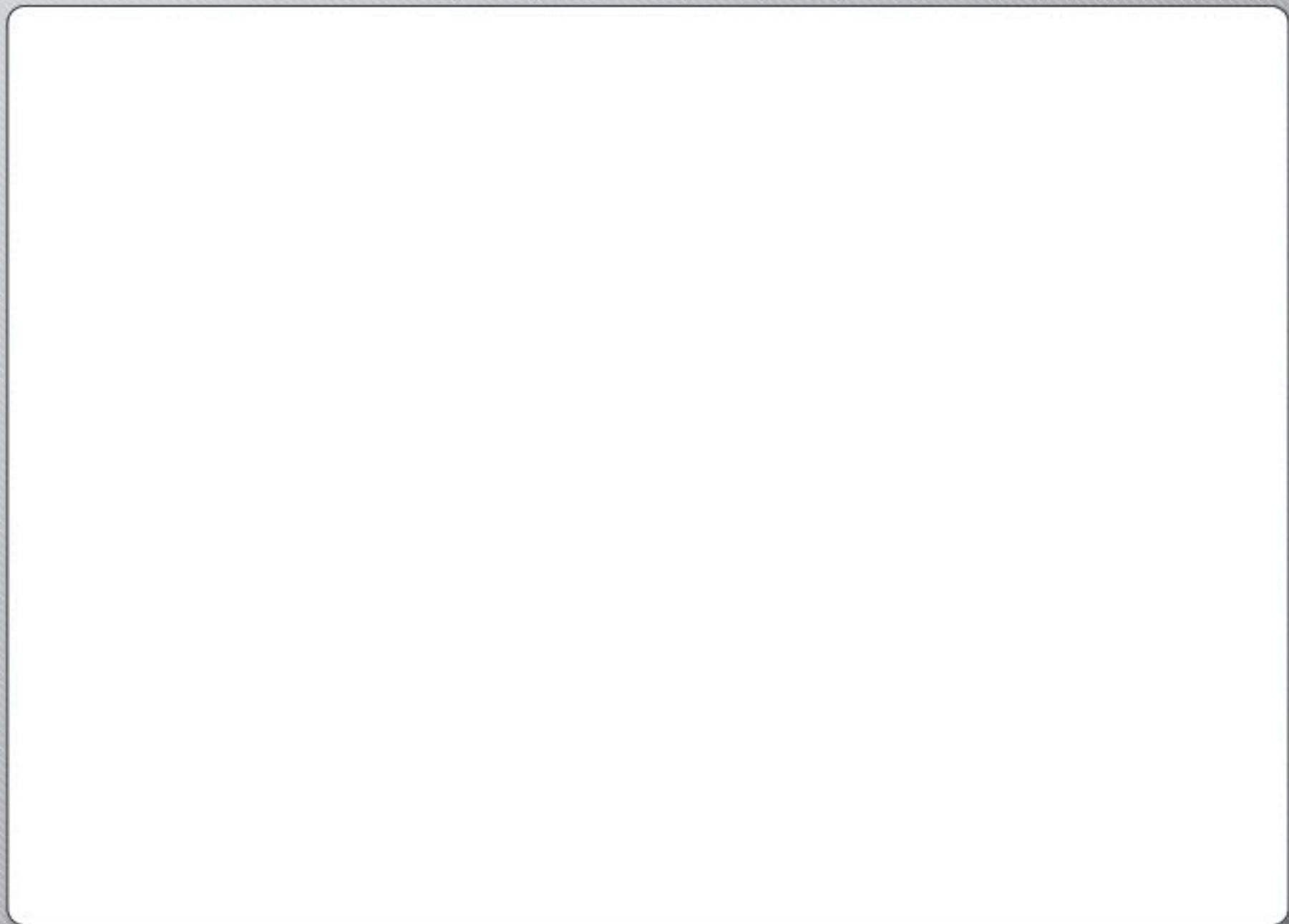


Preview

Don't forget, the *comments* you include in your program don't actually have any effect on what your robot will do.

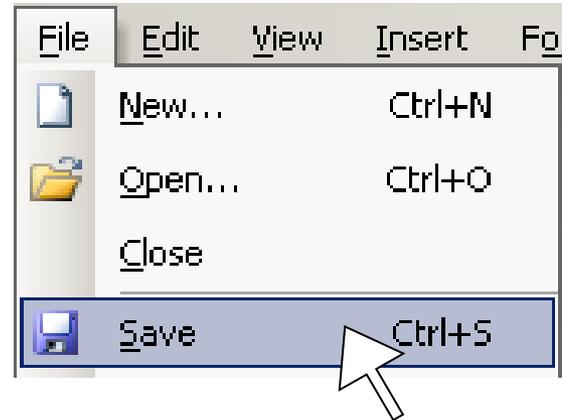
Comments simply act as reminders for you when you edit your program. Here, the “wait for 1440 degrees” won't do anything because the actual Wait Block is set to wait for 720 degrees.





Preview

Finally, be sure to save frequently. That way, if anything happens to your computer you don't have to start over.



Good Luck!

Now you have the necessary knowledge to get started in the Full Speed Ahead Activity.

