90, 180, 360 Spins

Mission:
The robot will spin in place 90 degrees to the left, then 180 to the right, then 360 to the left again, and stop.

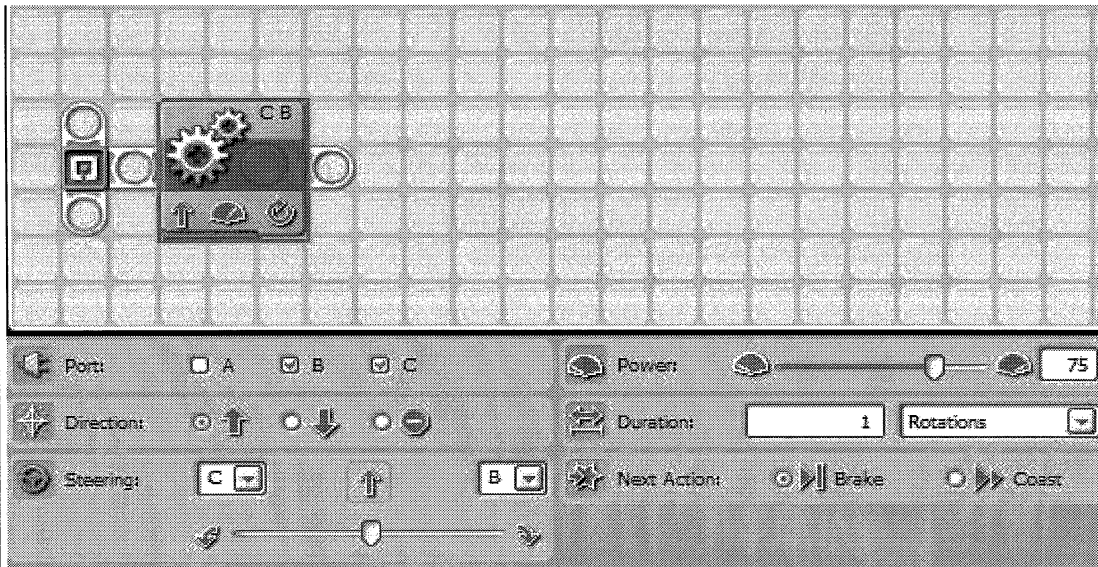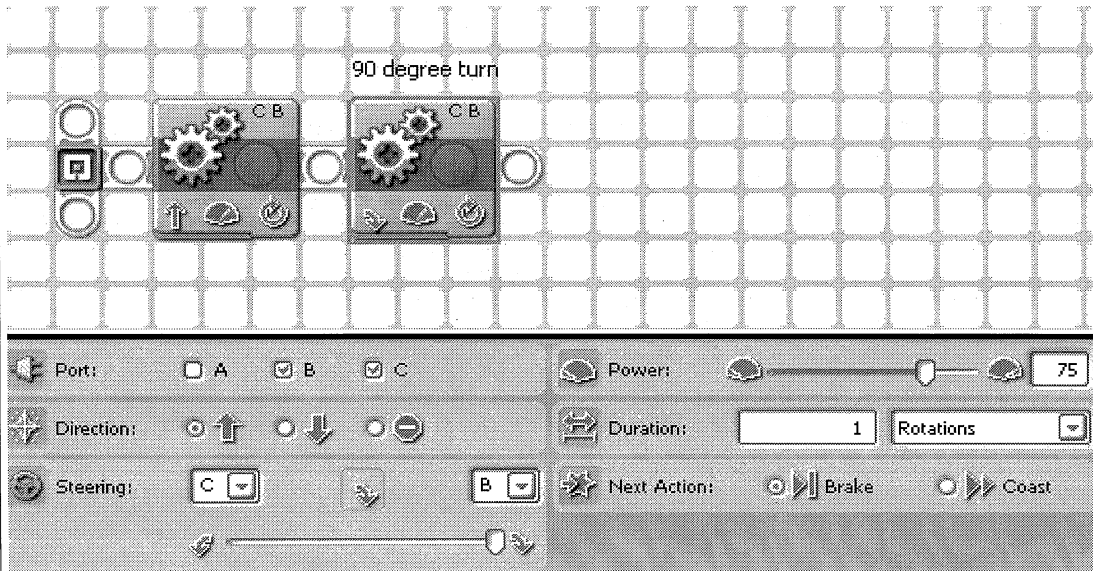**Equipment:**
none

Sensors:
none

Directions:

1. Place a Move block at the program bar and leave it at one rotation.

Port:	☐ A	☑ B	☑ C		Power:			75
Direction:	⊙ ↑	○ ↓	○ ↺		Duration:	1	Rotations	
Steering:	C ▼	↑	B ▼	Next Action:	⊙ ▌ Brake	○ ▶ Coast	

This makes the robot go forward one turn of the wheel.

2. Place another Move block after the first Move block and set it all the way to the right.

90 degree turn

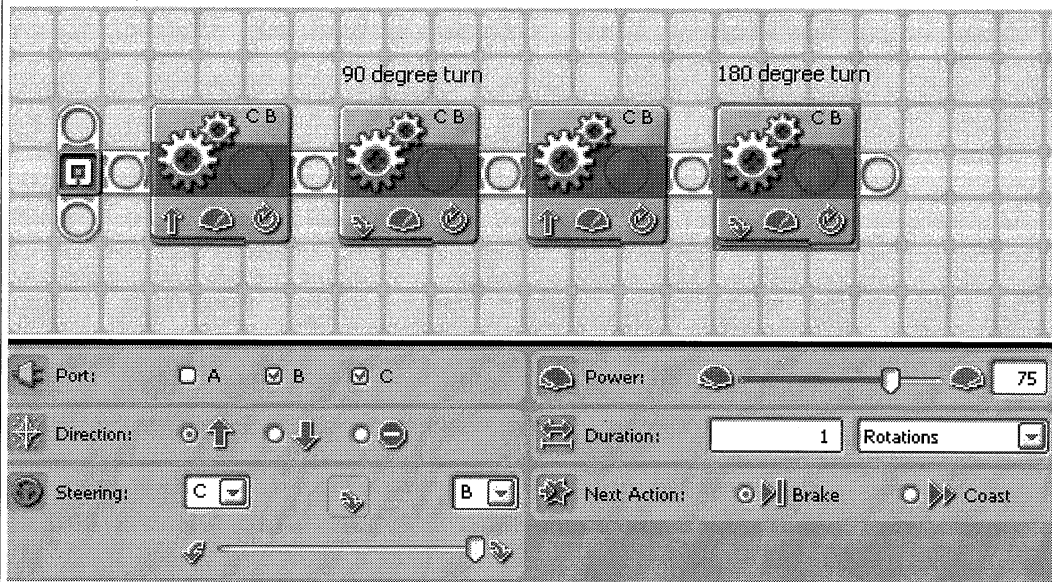| | Port: | ☐ A | ☑ B | ☑ C | | Power: | | 75 |
| Direction: | ◉ ⬆ | ○ ⬇ | ○ ⊖ | | Duration: | 1 | Rotations |
| Steering: | C ▾ | | B ▾ | | Next Action: | ◉ ▷‖ Brake | ○ ▷▷ Coast |

This makes the robot will spin in place. You will need to change the rotations so the robot will make a very accurate 90 degree turn.

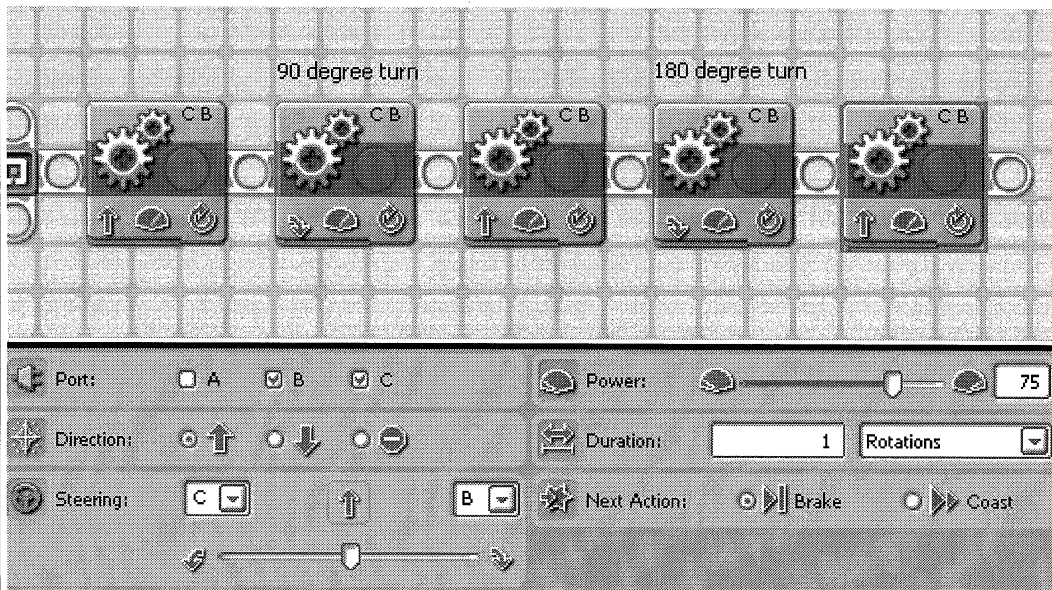3. Now place another move block into the program and leave at one rotation.
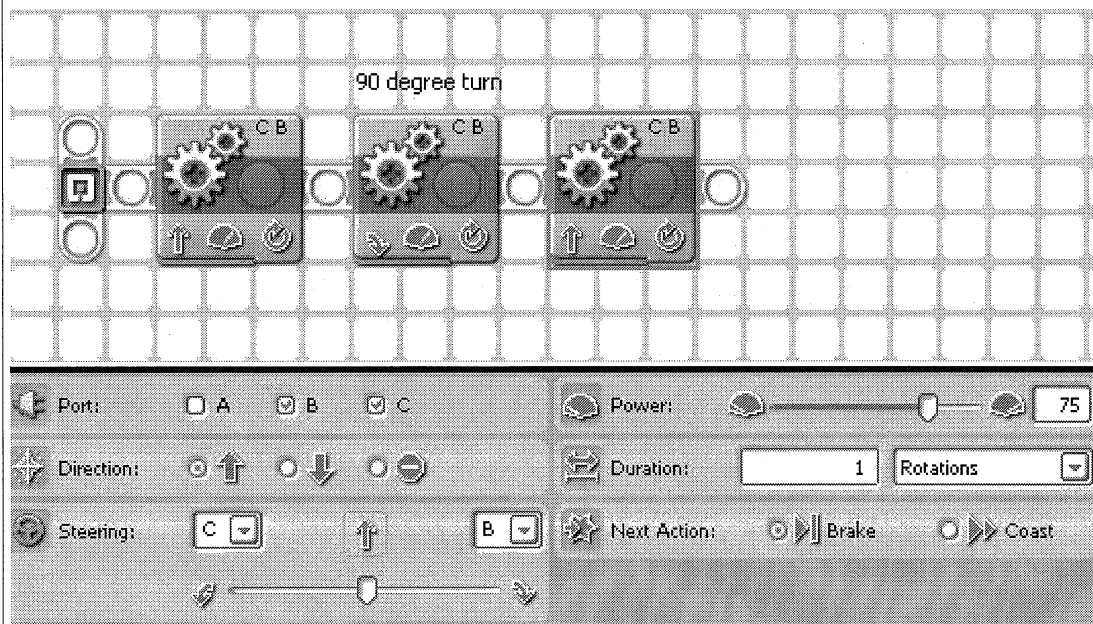
90 degree turn

	Port:	☐ A	☑ B	☑ C		Power:		75
Direction:	◉ ⬆	○ ⬇	○ ⊖		Duration:	1	Rotations
Steering:	C ▾	⬆	B ▾		Next Action:	◉ ▷‖ Brake	○ ▷▷ Coast

4. Place another move block and set it to double the setting for the 90 degree turn. This should give you a 180 degree turn. You may need to adjust it a bit to make it more accurate. Set the steering all the way to the right.
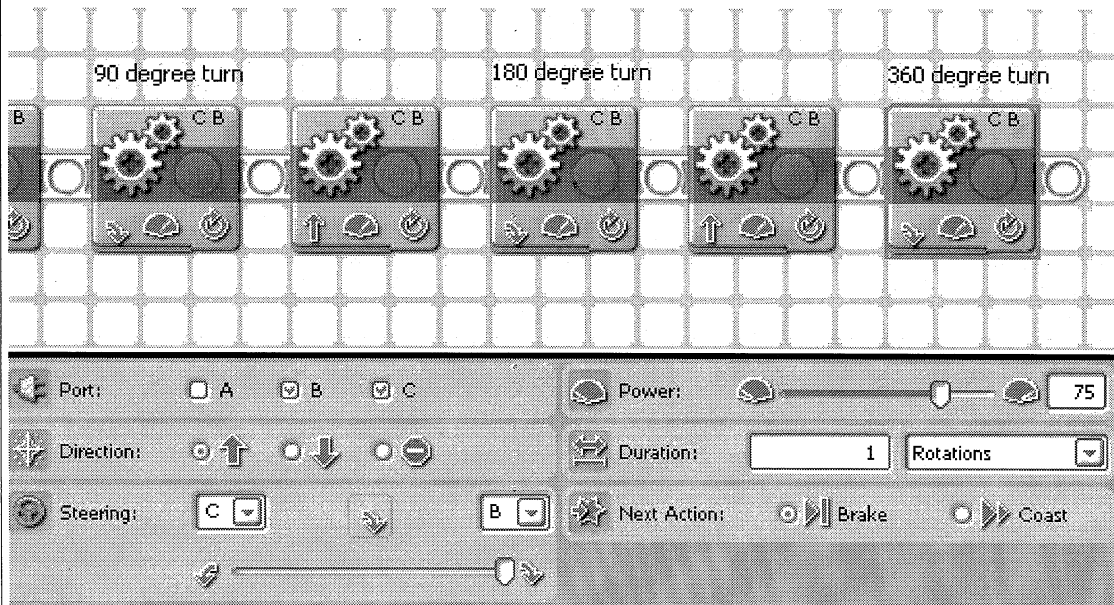
90 degree turn   180 degree turn

	Port:	☐ A	☑ B	☑ C		Power:		75
Direction:	⊙ ⬆	○ ⬇	○ ⊜		Duration:	1	Rotations
Steering:	C		B		Next Action:	⊙ Brake	○ Coast

5. Place another Move block and leave it at 1 rotation

90 degree turn   180 degree turn

	Port:	☐ A	☑ B	☑ C		Power:		75
Direction:	⊙ ⬆	○ ⬇	○ ⊜		Duration:	1	Rotations
Steering:	C		B		Next Action:	⊙ Brake	○ Coast

6. Place the last move block and set it to rotate double what you did for step 4. This will give you a 360 degree turn. Remember to set the steering bar all the way to the right.

90 degree turn · 180 degree turn · 360 degree turn

Port:	☐ A	☑ B	☑ C		Power:				75
Direction:	⊙ ↑	○ ↓	○ ⊖		Duration:		1	Rotations
Steering:	C ▼		B ▼		Next Action:	⊙ ▌▌ Brake	○ ▷▷ Coast

This is what the final program looks like.

90 degree turn · 180 degree turn · 360 degree turn
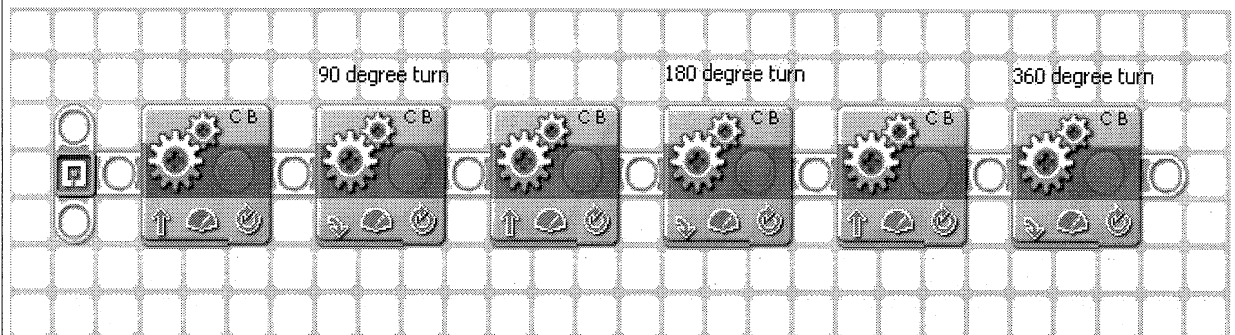
Secret to success: As you can see from this exercise, that various turns are easy to figure out once you know how to make a really accurate 90 degree turn. You can double it for a 180 degree turn or you can cut it in half for a 45 degree turn. Another secret is to use as few turns as possible since every time your robot turns, there is a chance that it will not turn perfectly and over several turns, this can make the robot get out of position quite a bit.