Bulldozer - NXT

Suggested Time	60 minutes
Age	8 - 13
Challenge	In this activity, design and construct an NXT sturdy car and program it to be controlled by touch sensors that can push dirt.

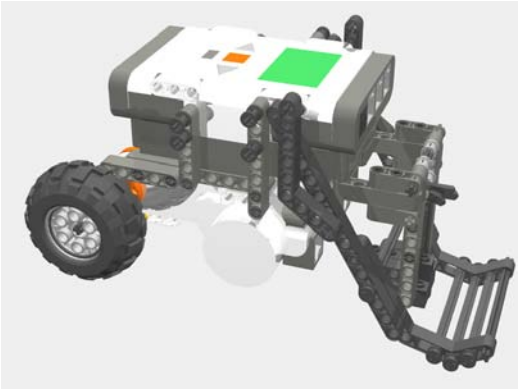
Topics	Distance, Time, Touch & Light Sensors
Subjects	Math, Science, Engineering & Technology
Programming Themes	Motor Forward / Backward, Touch Sensor Forks, Loops, Jumps / Lands
Related Math & Science Concepts	• Gears • Wheels and Axles • Acceleration • Velocity
Materials	• NXT Car • 2 Touch Sensors • Dirt represented by LEGO pieces, cotton balls, etc.

Building Instructions

1. Start with the original two-motor car. Build a skid plate for the front of the NXT car to allow for a good turning radius.

2. Build a plow and attach it to the front of the NXT.

3. Wire the motors to the outputs of the NXT.



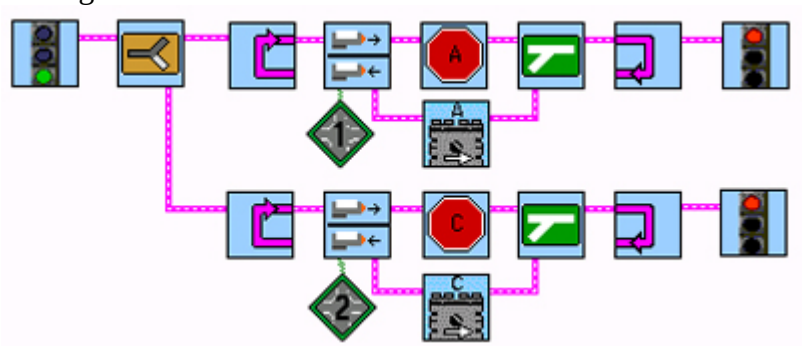
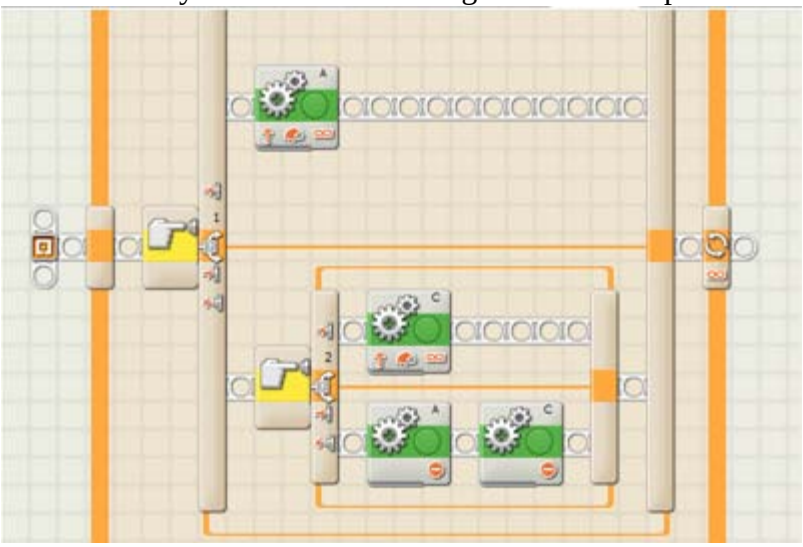
4. Make a touch sensor controller, and wire the inputs to the NXT.

Building Hints:

- *3 motors are essential to allow the bulldozer to turn.*
- *Turning is easier to accomplish if a free wheel or skid plates are used.*

Programming Instructions

1. Choose whether to use ROBOLAB or LEGO NXT Software to program (follow step 2 for ROBOLAB; follow step 3 for LEGO NXT Software).
2. In ROBOLAB Inventor 3, program the bulldozer to be controlled using 2 touch sensors.



3. Using the LEGO NXT Software, program the bulldozer to be controlled by 2 touch sensors using a series of loops and forks.