Kit Contents

Your kit should contain the following:
- 3d printed plastic chassis
- 2x rear wheel inside
- 2x rear wheel outside
- 3mm plastic wire
- 2x front wheel
- 2x servo with bag of accessories
  - various servo horns (white plastic)
  - 2 long screws
  - 1 short screw
- 1x sonic sensor
- 1x sonic sensor mount
- 4 strands of wire with female to male connectors
- 1x battery pack
- 1x bread board
- 1x Arduino Nano w/ Atmega 328 with optional ICSP header pins (unattached)
- 2x jumper wires (red, black)
- 2 tank treads
- 1x moustache

Tools Required:
- small philips screwdriver
- hot glue gun

Assembly Guide

Mechanical:
1. Attach the front wheels to the front axel using the long screws that come with the servo.
2. Hot glue the sonar mount to the chassis, facing the front.
3. Mount the servos in place at the rear of the chassis. Test the fit of the treads before gluing them in place.
4. Assemble the rear wheels:
   1. Glue the long, thin servo horn into the thin part of the rear wheel.
   2. Glue the plastic wire into the holes so it is facing the open side of the wheel.
   3. Glue the top of the wheel in place, using the plastic wire to line it up.
   4. Trim off any excess plastic that sticks out.
5. Glue the battery pack to the chassis - ensure that the switch and power cables are accessible.
6. Remove the backing from the bread board and stick it to the battery pack.

Electronic:
1. Connect the four-strand wire to the sonar sensor.
2. Snap the sonar sensor into the mount, with the wires facing upwards.
3. Connect the arduino nano circuit board to the breadboard, in the middle.
4. Connect:
   1. Servo purple to the ground (black) rail of the bread board.
   2. Servo red to the 6v (red) rail of the bread board.

3. Servo orange to pins 2 (right) and 3 (left) on the arduino.
4. Sensor Trig to pin 12 on the arduino.
5. Sensor Echo to pin 11 on the arduino.
6. Sensor 5V to the 5V pin on the arduino.
7. Sensor Gnd to any ground pin on the arduino.
8. Red jumper wire from the red rail of the bread board to VCC on the arduino.
9. Black jumper wire from the black rail of the bread board to the same ground pin as used in step 7.
10. Battery red wire to the red rail on the bread board.
11. Battery black wire to the black rail on the bread board.

Turn on the power and watch it go!

Reprogramming:

1. Download the arduino IDE from http://arduino.cc/en/Guide/HomePage
2. Download the sketch from http://swarm.workshop.perforce.com/projects/tgray-a-simulacrum-of-completion/files/rover
3. Choose Arduino Nano w/ Atmega 328 as the board type.
4. Connect the arduino board to your computer via USB (not included).
5. Upload the code to the arduino board.
6. Use the supplied arduino libraries and examples to explore and expand your robot's capabilities.