

Bots Breaking Barriers

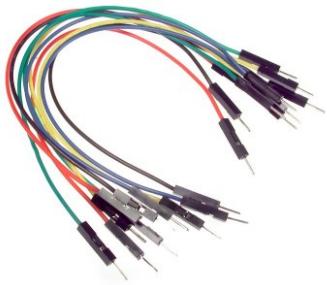
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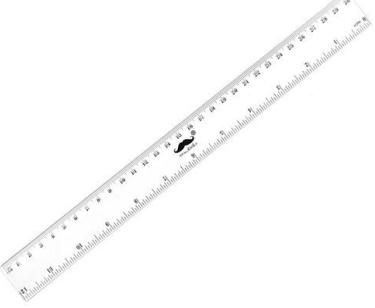
Art Bot - Mini Design

Description:

This DIY art robot is capable of being programmed to draw anything one's heart desires. It is currently adapted to use a standard marker (i.e. Crayola) but can be adjusted for use with other mediums in varying size diameters. Program it to draw shapes, write words, draw scenes, colour, and if you're up for the challenge, take a spin at programming the art bot to create spirographs!

Parts, Materials, Equipment:

		
Arduino UNO	Jumper wires x	Motor/Wheel Combo x4
		
Breadboard	9V Battery	Tape

		
Marker	Foam Core Sheet	Exacto Knife/ Box Cutter
		
Glue	Pencil	30cm Ruler

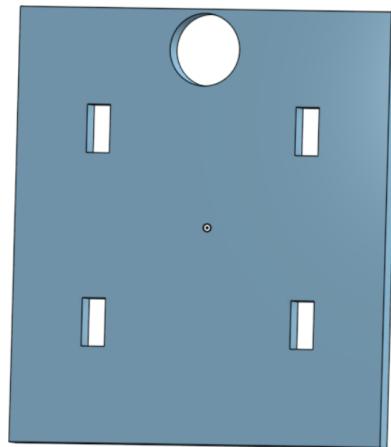
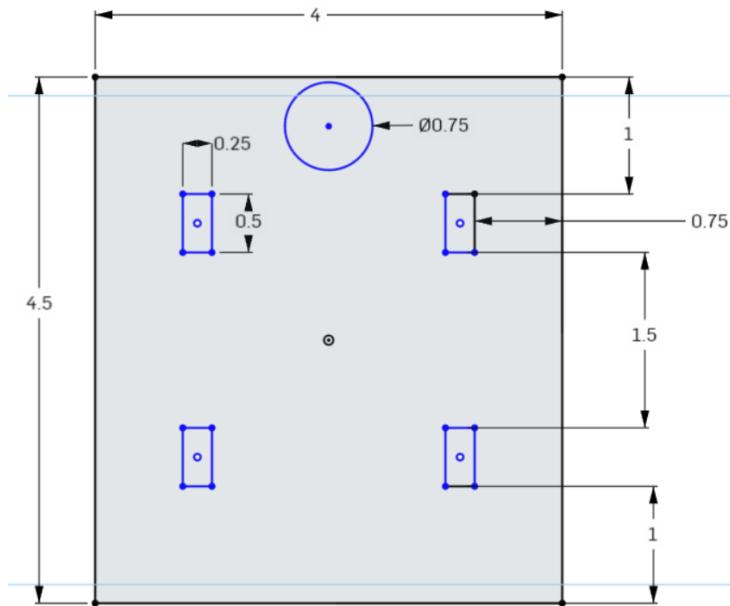
INSTRUCTIONS:

Foam Core Structural Pieces:

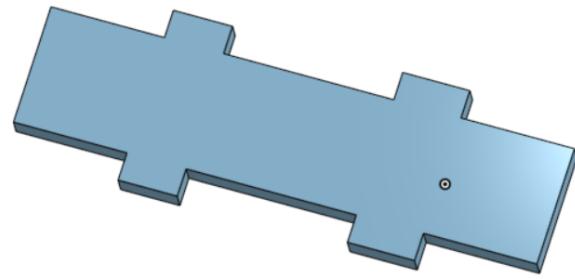
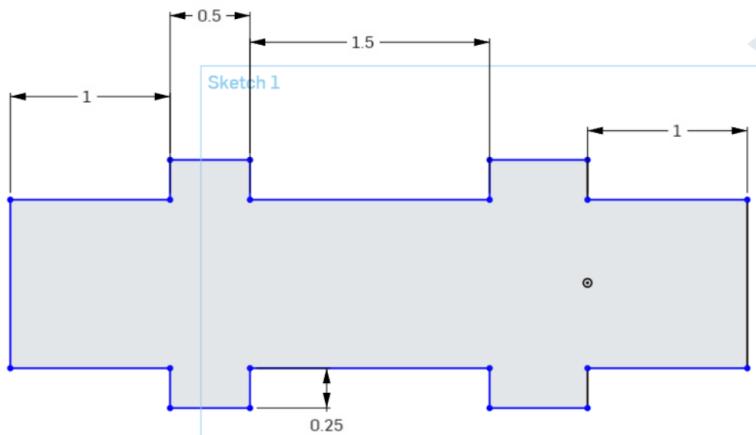
Use the pencil and ruler to sketch the following structural pieces of the robot on the foam core sheet. Then, using the exacto knife/box cutter, cut out the pieces. All units are in inches.

Main Base (A) x 1:

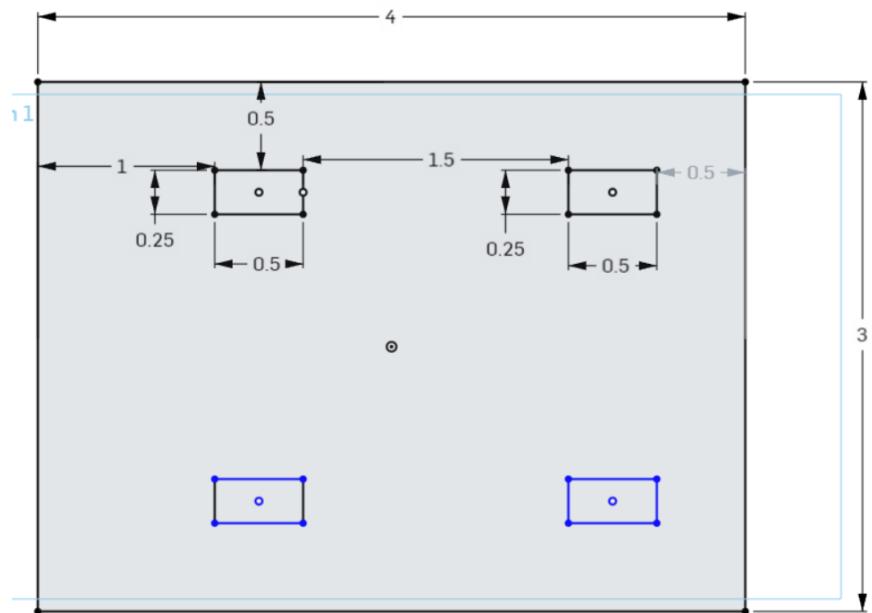
This will act as the main foundational base for the robot on which the breadboard will be placed and wheels will be attached. The marker will be inserted through the holes, as shown later on.

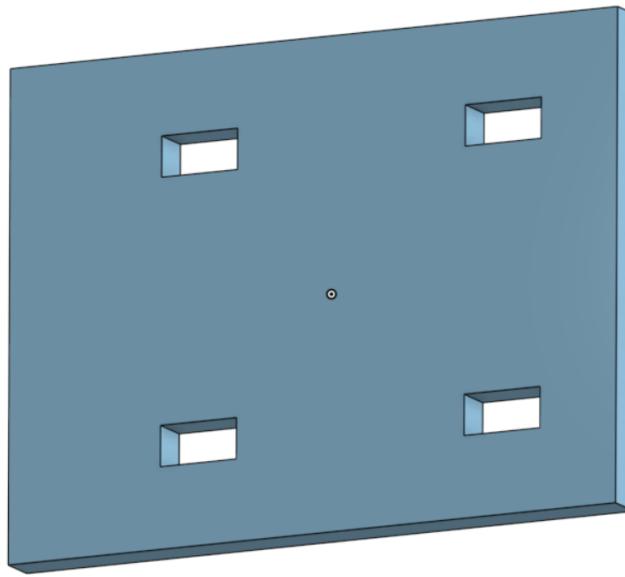


Side Supports (B) x 2:



Top Piece (C) x 1:



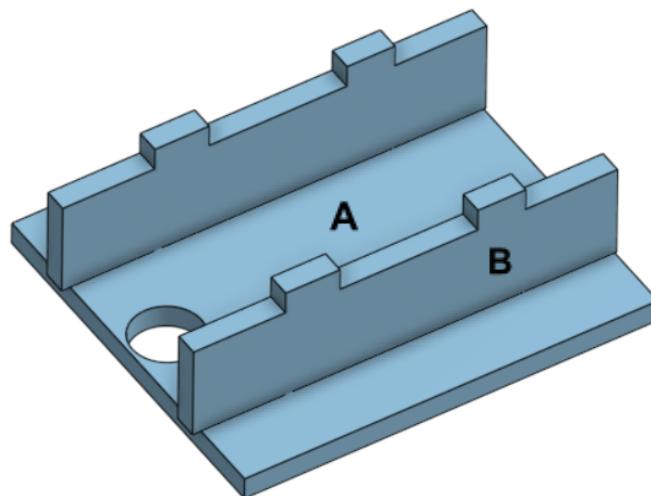


Structural Assembly

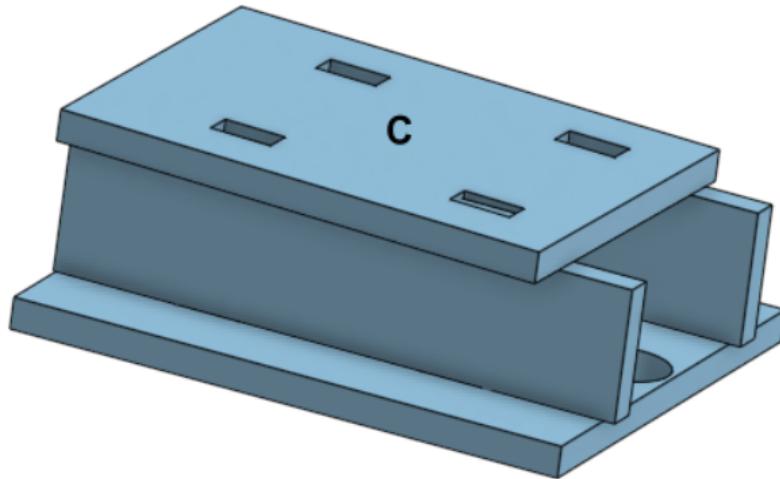
Now that all of the robot's structural pieces are cut out of the foam core, we can assemble them using glue and tape.

1. Main Base (A) & Side Supports (B)

Use hand force to slide the side supports into the slots of the main base.



2. Robot Top Cover:

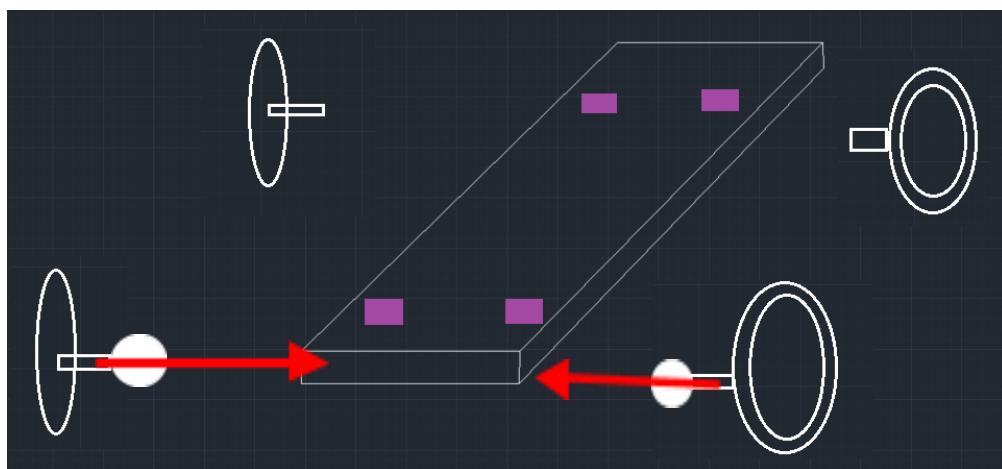


Robot Assembly

Now that all of the robot's structural sub-components are assembled, the sub-components can be assembled together to form the robot, along with the electronic equipment thereafter.

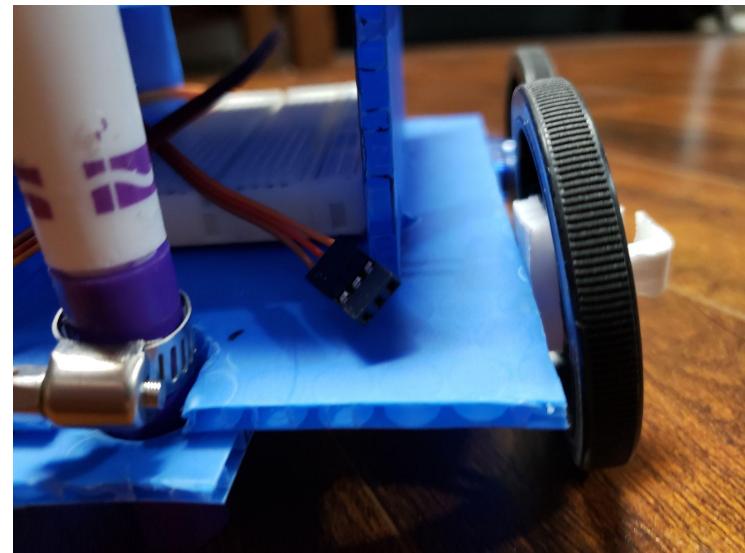
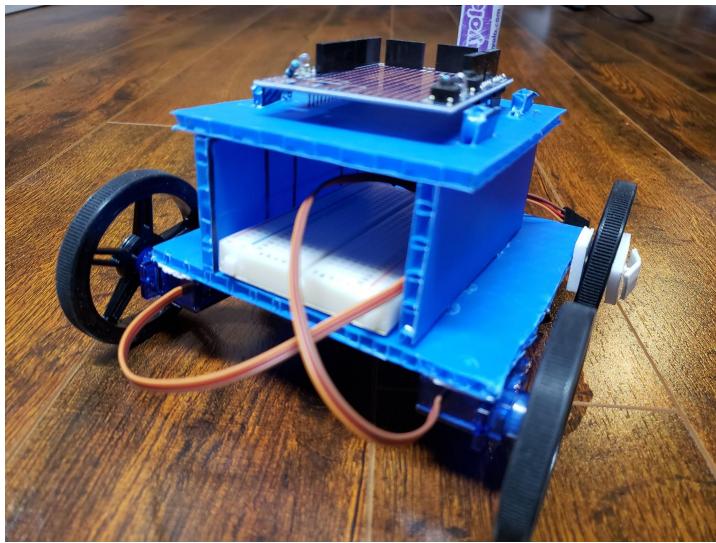
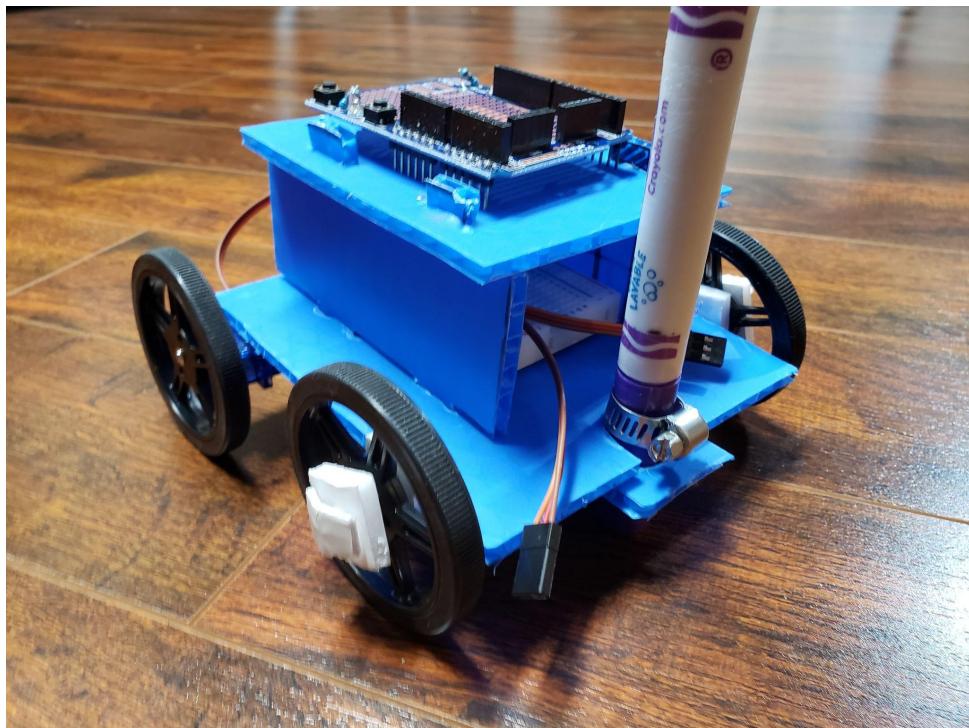
Main Base with Wheel Assembly/Attachment:

Glue two wheels with servo motors attached to the back of the main base. Remove the servo from the other two wheels, and use a toothpick with a small white spacer cut-out of foam core to fasten either side as the toothpick slides in the base



Final Assembly:

Tape the breadboard in the center of the main base, and the arduino in the center on-top of the top cover.



Circuit Design:

