Auto Etch A Sketch

Needs

* Autodraw
* Case
* Image to gcode

Wants

* Battery operated
* Fast draw speed
  + Sub 30 seconds for text
  + Sub 10 minutes for images
* Etch easily removable to erase
* Mechanically Simple
  + Top webcam mount
  + Stand for electronics/sit on
    - MAYBE MAKE IT FOLDABLE TO PUT ON WALL???
  + Motor mounts
  + Think geared vs ungeared

Tasks

* Plan Electronics
  + Controller
    - Wifi access?
    - USB access for webcam?
  + Motor
    - Torque?
  + Motor controller
  + Battery
  + Indicators
  + On/off
* Plan Mech
  + Gears
    - Ratio
    - Teeth Size
    - Mount location
    - Mount technique (screw holes)
  + Case
    - Etch a Sketch slot
    - Motor fit
    - Cap fitment
    - Electronics box
* Buy Shit

Resources to follow/take ideas from

* [How this robot that got us into OpenSauce](https://www.youtube.com/watch?v=iQhhutAanu0&ab_channel=EveryFlavorofRobot)
* [Arduino etch a sketch clock finished](https://www.youtube.com/watch?v=Andqi_PZBqo&ab_channel=randrcomputers)
* [Raspberry Pi Auto Etch A Sketch™](https://www.youtube.com/watch?v=6tTF2i9Zns8&t=296s&ab_channel=element14presents) ([Raspberry Pi Auto Etch A Sketch™︎ -- Episode 372 - element14 Community](https://community.element14.com/challenges-projects/element14-presents/project-videos/w/documents/8497/raspberry-pi-auto-etch-a-sketch----episode-372))

Purchase List

* [STEPPERONLINE Nema 17 Stepper Motor Bipolar 2A 59Ncm(84oz.in) 48mm Body 4-Lead W/ 1m Cable and Connector Compatible with 3D Printer/CNC: Amazon.com: Tools & Home Improvement](https://www.amazon.com/STEPPERONLINE-Stepper-Bipolar-Connector-compatible/dp/B00PNEQKC0/ref=sr_1_3?adgrpid=1338106213675303&dib=eyJ2IjoiMSJ9.6bwZgnYtcN_NH0492YUVI9XBhazjIL2BEzxAl-WtHf_H6ObROcgIjvFMM7ditz2Lq-dlz4nNZcTzrlASFO5yME5vLRJmksSpHocz2HEEyd9T4QFou-LiFHBrjgpKsC_yeUmW74dcQDnbDfv6ZeDpJsOVUJL_Oh0AqyNhWkgMNUv_HvJbDHTAP1JiR11N75LGwa16xLQ2hyCt8H_hQ0WnZ116sGkDFqotvyviFBLUOKs.gTwlwfgYCLooAvY1ehavSausHltXpW77rr3uFuDO8j0&dib_tag=se&hvadid=83631787975713&hvbmt=be&hvdev=c&hvlocphy=45310&hvnetw=o&hvqmt=e&hvtargid=kwd-83631977711171%3Aloc-190&hydadcr=24662_13493378&keywords=stepper+motor&mcid=d1f3112ee76f3a5ab5b97a3a938d1583&msclkid=f00d8b121d5814304032e3b04c6c1dea&qid=1755468089&sr=8-3)
  + Fast, can handle 2A current if im pushing it hard
  + 12V
  + Overkill probably
* [Amazon.com: ELEGOO 3PCS ESP-32 Development Board USB-C, 2.4GHz Dual Mode WiFi+Bluetooth Dual Core Microcontroller for Arduino IDE, Support AP/STA/AP+STA, CP2102 Chip : Electronics](https://www.amazon.com/ELEGOO-ESP-WROOM-32-Development-Bluetooth-Microcontroller/dp/B0D8T53CQ5/ref=sr_1_4?crid=1HLGYWDJO4KE4&dib=eyJ2IjoiMSJ9.XBINg-sjhfF_gUtnMiKGjqjuRJgrvEqFyqImJMAjfvujud_4gMIiqQQY-xb6H2GubU84I0xkfubAilY35t8rXVs-doi3lKxFBvl8PKCchRJqpFTNM1fg2rW4B8XBtL2Tr8Y63yKYmk3IunH38UaSoUAR1_wDQKx_HcFPCwCaLCDgeFvE0b_FyAKFCapgqqnrOBJnsfluHqxq9fw9XtAmXvwGeLkqb8ATSND78O0hobM.KsHQpRkFmVdhpoEdTnLCDe6gciPQgtWdog4v9NrfTp0&dib_tag=se&keywords=esp32+wroom&qid=1755469825&sprefix=esp32+WR%2Caps%2C157&sr=8-4)
  + Built in wifi
* [Amazon.com: BIGTREETECH TMC2209 V1.3 UART Stepper Motor Driver 2.8A Peak Stepstick Silent Driver for Manta M8P, Octopus V1.1, Octopus Pro, SKR 3, SKR V1.4 Turbo, SKR Pro V1.2 3D Printer Control Board (2 PCS) : Industrial & Scientific](https://www.amazon.com/BIGTREETECH-TMC2209-Stepper-Printer-Motherboard/dp/B08SMDY3SQ/ref=sr_1_5?crid=320YZUBMIC7KO&dib=eyJ2IjoiMSJ9.k3D7TYuYVqg_1YbQyRIp-pDs0Ecrrn-kb9eWxFJenfJbW2aOLawdZqNsMd6a_PAX2Le8XflkSz5UkTKW59knATXFydrDTxJ5fxG43B41f8_TzJwoHAXNmMaG5TNGCaRz-W-UXrpwdPSZ1IpnggcgTJLUly1fSVmhWlJOfZcEiHHA337dxaTpEdulW79S3raOBm8hGN0nzqjcG7ZzqEBybjETFOSoEfcdUijtB9R7mms.5ECSlvucZXTk2uO6XNkZ43ev8C3YDZN7j4Epb2Fbd8E&dib_tag=se&keywords=tmc2209&qid=1755469418&sprefix=TMC22%2Caps%2C173&sr=8-5&th=1)
  + Smoother steps according to chat