

“Hey There, Handsome” - Firefly Art Grant Proposal

You are walking down a dark path when ahead you spot a glowing hand, the size of a person. Curiously, one of the fingers is glowing in color while the rest of the hand is glowing white. As you approach, you notice a podium with five levers situated in front of the giant hand. You find that you can move the fingers and thumb by pulling the levers, and that when actuated, each finger produces a distinct series of tones. You soon realize that the fingers are lighting up in order to prompt you to pull corresponding levers, guiding you to play melodies that have never entered your head before. The colors illuminating the hand swirl, strobe, and change as you manipulate the appendages, momentarily forging a connection between you, the avatar, and the music you create together.

My collaborator and I plan to install a stand-alone, 6' tall human hand whose fingers can be actuated with a series of ropes or cables, (as shown in the illustrations below). This installation's footprint will measure approximately 8' long by 3' wide. The vision is this: Participants approach the hand, which will have one finger illuminated internally with colorful LEDs. In front of the hand will be a wooden podium with five levers, and participants will be encouraged to pull the lever corresponding with the illuminated finger, which will actuate the finger on the hand. This, in turn, will produce a series of two tones specific to each finger pulled. Once that finger is released, a new finger will be illuminated, and when that lever is pulled a new series of tones will be played. Our hope is to create an interactive installation showing participants that creating original melodies can be accessible and within the grasp of our own hands.

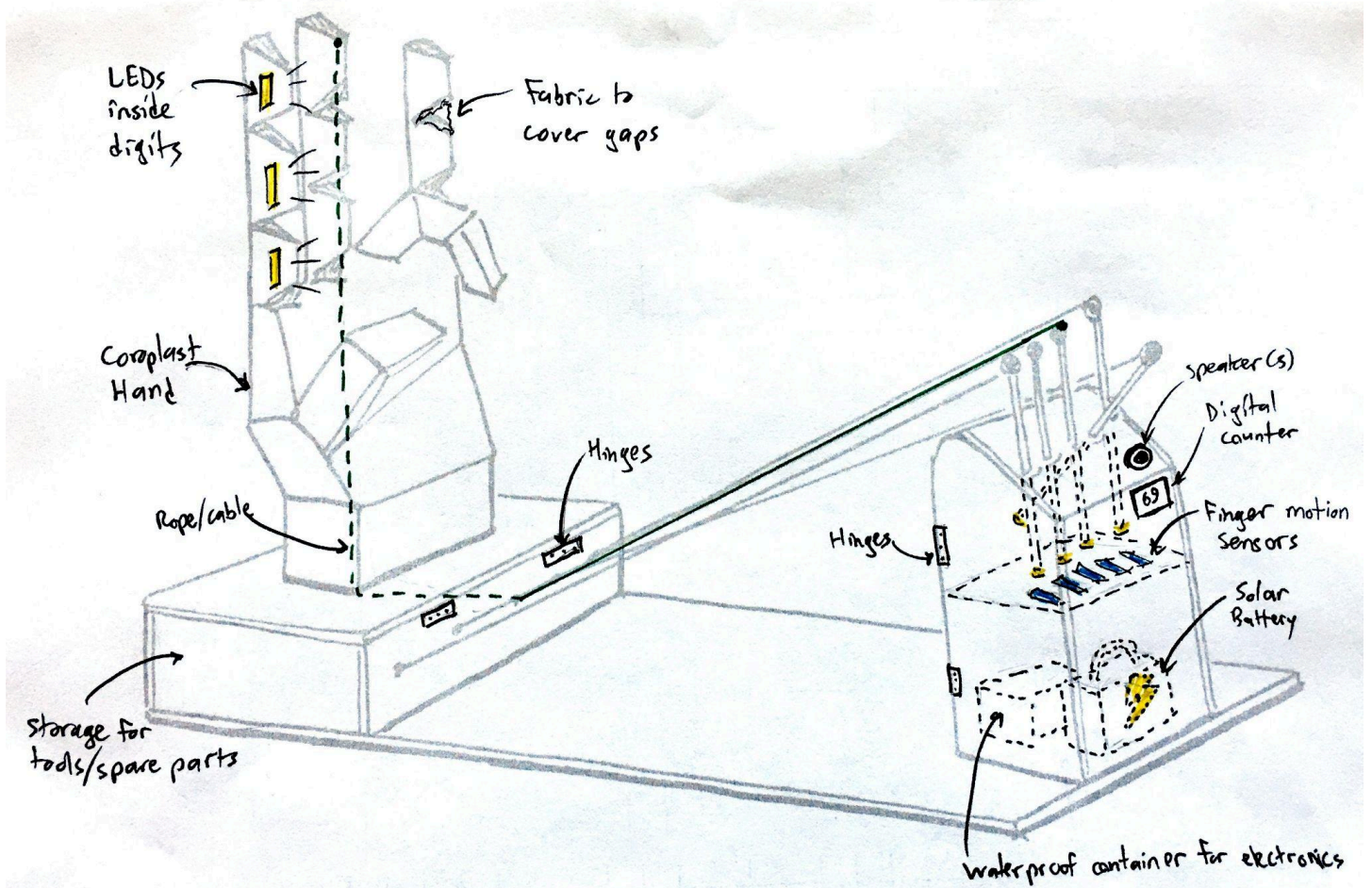
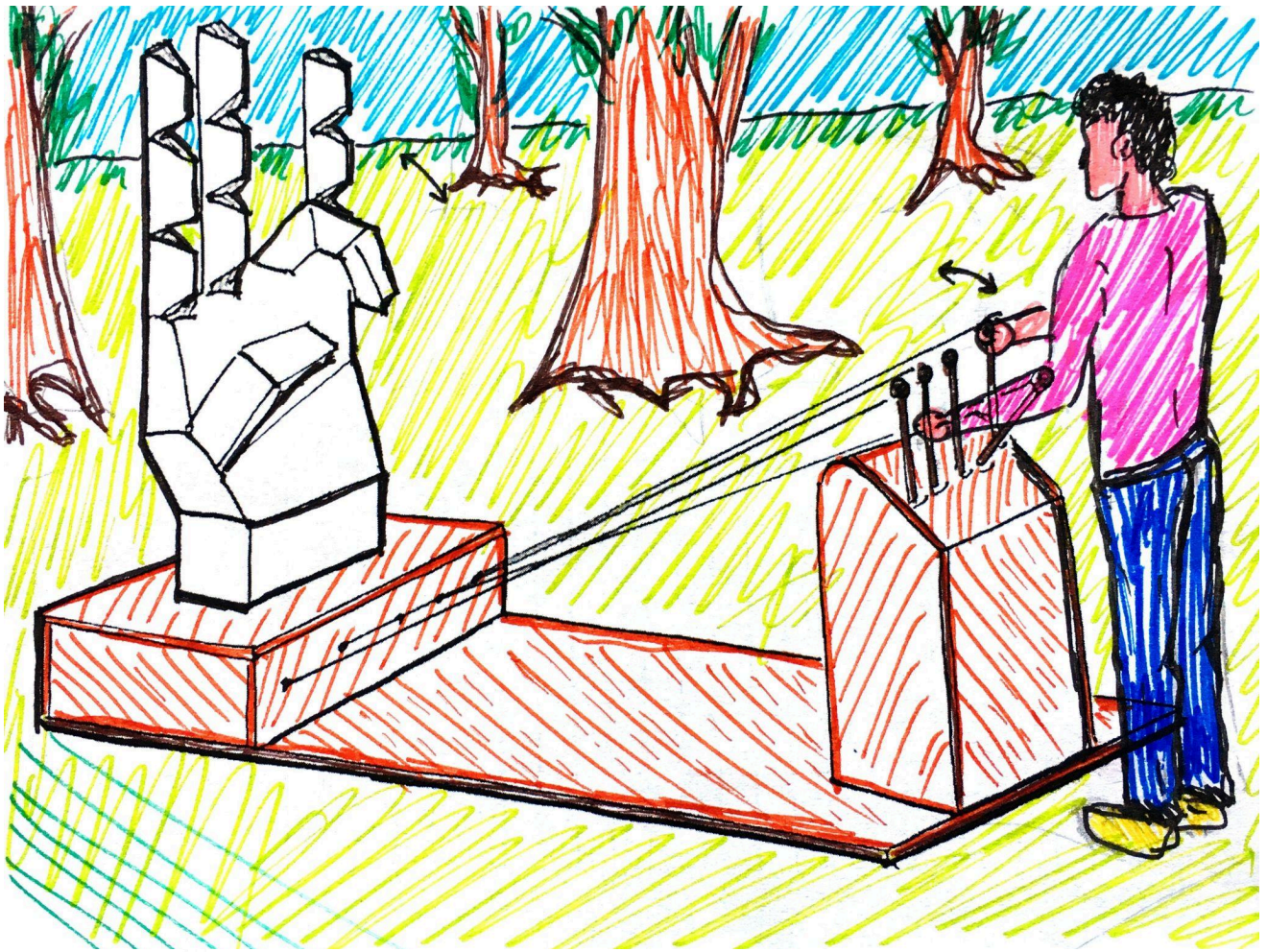
In order to create the light and sound effects proposed, we plan on programming a series of microcontrollers or Arduinos to trigger LEDs and specific sounds based on each actuated finger. All the electronic components will be housed in the waterproofed podium. Each finger will have its own assembly of an Arduino Mini, PIR sensor, SD card DF Player, bluetooth audio output, and LED signal output. Sounds will be directed either through one speaker housed in the podium or several smaller speakers located around the perimeter of the podium to provide a more immersive surround sound experience. To provide power for the electrical components, we will have a 300W solar Jackery generator inside the podium, which would be able to be recharged via solar panels during the day.

The hand will be constructed out of white coroplast, taking advantage of its weather-proof, lightweight, and durable properties. The lever podium, hand platform, and base will be constructed with $\frac{3}{4}$ " plywood, wood screws, and various hardware, and stained a dark color to blend in with the surrounding nature. The installation base will be staked or lag bolted into the ground to prevent the installation from moving or tipping over. The hand's finger actuation will operate with either $\frac{1}{4}$ " ropes and pulleys or bicycle brake cables (for more reliable control and actuation). To make the hand look more realistic, the triangular cut-outs in the fingers will be covered in white fabric, to imitate the folding skin on the inside of a hand.

This project can be installed anywhere on flat ground, ideally adjacent to a walking path so that passersby can stop and interact with it. We would need at most a step ladder for dressing/maintaining/troubleshooting the tips of the fingers, and otherwise the rest of the installation will be conducted on the ground. Throughout the event, we will maintain the installation twice daily to ensure the structure is intact, to recharge the solar battery and make any needed repairs, and to enable illumination at night.

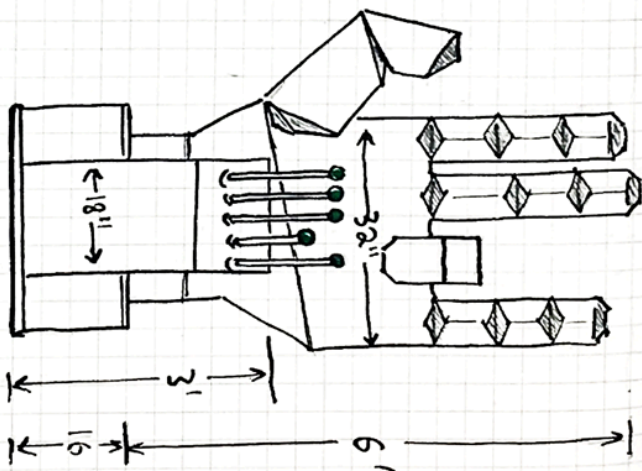
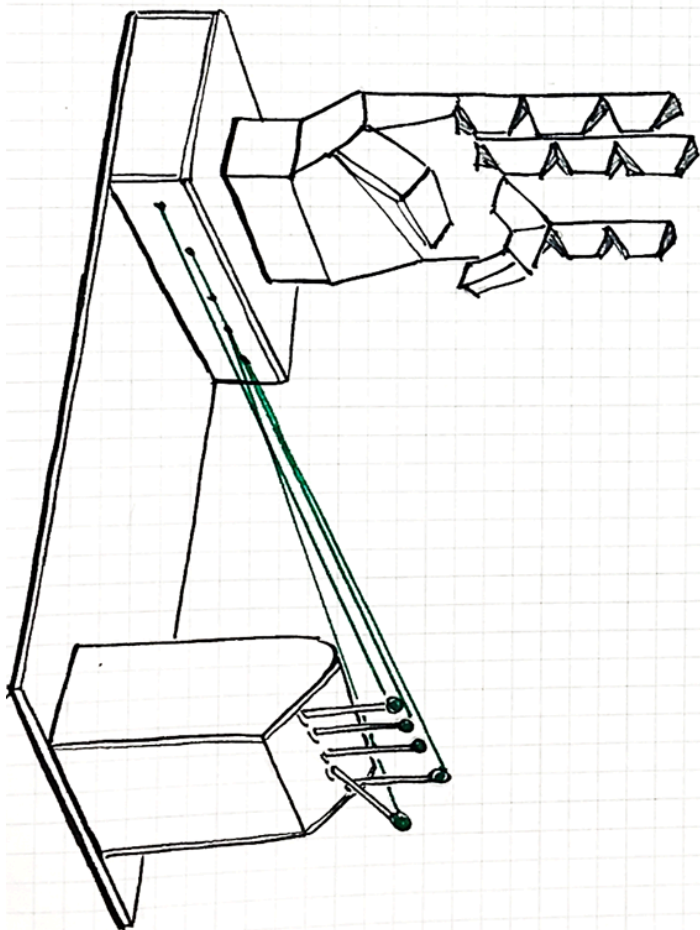
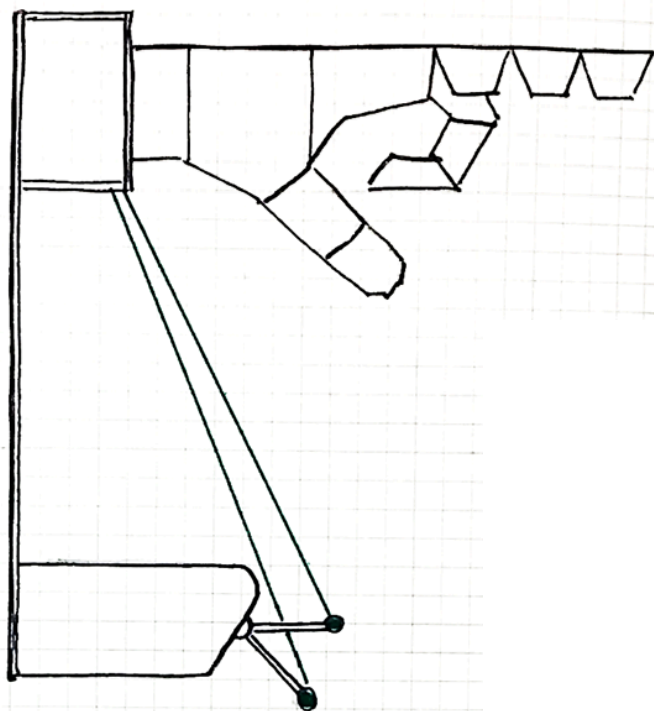
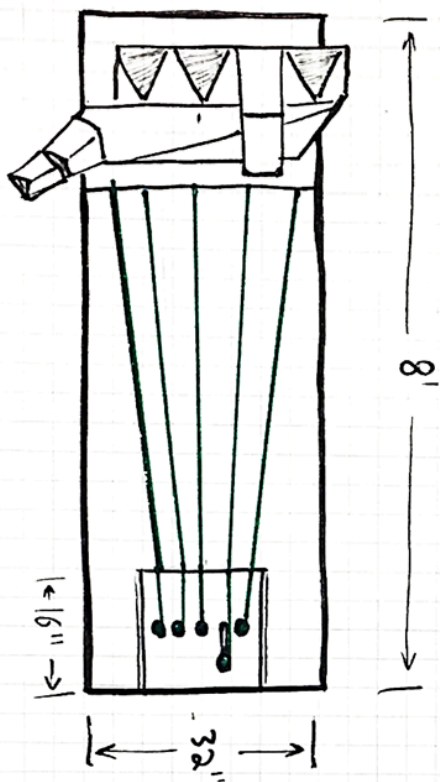
We are requesting \$1000 from Firefly Arts Collective to help cover tools and supplies for this project. We hope to beta test our installation at Jetlag Music Festival (Upstate NY, late June) before updating it and making it fully off-grid for Firefly, and our plan is to apply for additional funding from them to cover the remainder of our expenses. In summary, the illuminated hand art installation offers a multifaceted sensory experience that will enrich the Firefly event and leave a lasting impression on attendees. Through its striking visual presence, interactive musical elements, and opportunities for community engagement, the installation embodies the spirit of creativity, connection, and celebration that defines the festival. We believe that funding this project will not only enhance the overall experience for attendees but also contribute to the cultural vibrancy and artistic legacy of Firefly for years to come.

Thank you for considering our proposal. We look forward to the opportunity to bring this vision to life and create a truly unforgettable experience for our community.





Mechanical design proof of concept prototype: cardboard, duct tape, and string.



	Component	Quantity	Total Cost	Description
Mechanical Components	3/4" 4'x8' ply sheets	3	\$150.00	https://www.homedepot.com/p/23-32-in-x-4-ft-x-8-ft-BC-Sanded-Pine-Plywood-201428/100061386
	Construction screws, 1 box	1	\$11.00	https://www.homedepot.com/p/Grip-Rite-9-x-2-1-2-in-Star-Drive-Bugle-Head-Construction-Screw-1-lb-Box-212GCS1/207200494
	Hinges	6	\$31.00	https://www.homedepot.com/p/Everbilt-3-in-Square-Radius-Satin-Nickel-Squeak-Free-Door-Hinge-28616/314151781
	4'x8' white Coroplast sheet	3	\$105.00	https://www.homedepot.com/s/coroplast%20corrugated%20plastic%20sheet?NCNI-5
	9' brake cables/housing	5	\$75.00	https://www.biketiresdirect.com/product/jagwire-slick-stainless-tandem-brake-cable-s-himano-sram
	Steel cable	50ft	\$13.00	https://www.homedepot.com/p/Everbilt-1-16-in-x-50-ft-Galvanized-Steel-Uncoated-Wire-Rope-811072/300018981
	Cable crimps	20	\$11.00	https://www.homedepot.com/p/Everbilt-1-16-in-Aluminum-Ferrules-10-Pack-42574/205887624
	White zipties, 14", 1 bag	1	\$55.00	https://www.homedepot.com/p/Commercial-Electric-14-in-Cable-Tie-Natural-500-Pack-GT-370ST-500/203531931
	Hardwood dowels, 96" long	2	\$34.00	https://www.homedepot.com/p/Waddell-Aspen-Round-Dowel-96-in-x-1-25-in-Sanded-and-Ready-for-Finishing-Versatile-Hardwood-Rod-for-DIY-Home-Projects-6430U/204397059
	Waterproof electronics box	1	\$27.00	https://www.amazon.com/dp/B0B61L9P95/ref=twister_B07RPNW-C8V?_encoding=UTF8&th=1
	Black PLA 3D printing material	1	\$25.00	https://www.amazon.com/HATCHBOX-3D-Filament-Dimensional-Accuracy/dp/B00J0ECR5I/ref=scr_1_1?crid=DWMUJ756EIXT2&dib=eyJ2IjoiaWMSJ9.2n0ndN0AxcQhRCf8bFqJUL_UWIFPc560a47CO4xoAcDw2FIC2CZCMXVl.nJ35Hw4nlgQjgdlmh8k8H4uGwVEmvYIMnDyDkN7LDy_g28dw48c7bn8tpbucuz65X1A8OKBx4_v6fQIwl20ieUvDJNIMwxXql8VvUINmatQ2ZnN403naJSTJN_XyEz0IE_ZO7GLYAR_u1u-3jK8X7gzXqnJv7_OelATN2luwu7BM.QXnube19QoBVTCTCwXQsTe09mTpo2K0NBf-opxhiuc&dib_tag=se&keywords=black+pla&qid=1709232153&srefix=black+PLA%2Caps%2C469&sr=8-1-spons&sp_csd=d2lkZ2V0TmFtZT1zcF9hdGY&pssc=1
Electrical Components	Solar Jackery 300W	1	\$300.00	https://www.amazon.com/gp/product/B0CFVCBQJ7/ref=ppx_yo_dt_b_asin_title_o00_s00?ie=UTF8&th=1
	Waterproof LED strips, 3.2ft	6	\$90.00	https://www.amazon.com/LOAMLIN-WS2812B-Individually-Addressable-Waterproof/dp/B09577D22S/ref=scr_1_8?crid=2NZRQ6FJDHWA3&dib=eyJ2IjoiaWMSJ9.4qDpsSSmZV65dHWH5DvIV-2TJkFbaXx43pXRV2FGGJFP25UgBavEp4Y6eM5x0-bSJB-oL-emma43Ze5p8bJEDLv7Q6UYAJimChiqBhVTvPqlbn1dieDsAl4wGJlcvrIPBu4Dq13vTxAHSn5MgSdW62eDax1mafVnI2hTNL37_I7c9537FpBjIKVkc9LNO3oCMRBR98O8mbXl_Zxn2kqBBAVlQEqQ2pt6dYzrNXQl6kGcGkWB8DnteULqMxPkJ5vFvviqxmQ6d_gblUj1cVtp_zkmgNkLDqgAWIQ_S4H9n5RblVb9kYVt7OFIPp2ketrSxbrkZTIE7BF3GIU&dib_tag=se&keywords=addressable%2Bled%2Bstrip%2B3%2Bft&qid=1709233457&srefix=addressable%2Bled%2Bstrip%2B3%2Bft%2Caps%2C421&sr=8-8&th=1
	Arduino Nano	6	\$40.00	https://www.amazon.com/LAFVIN-Board-ATmega328P-Micro-Controller-Arduino/dp/B07G99NNXL/ref=scr_1_3?crid=2E3NJJ4ZZV4R7&dib=eyJ2IjoiaWMSJ9.UR96Z2D5rVJlr8NPSrk2k7-ICG90_OyFGPIN179IAp15ICBXG032vuXa9OL8N2Wfh-eQoKuHm-GqguNax536BVaxlC3zXlyE6bt5k0RoqPc3l5d2ZQ0u5c4ZZKAW3jF7W3Mu3r10xAPibX4qkXqN4YEZnQdG8NxAaggnQanJ8oWmQ4YNT_joiNWlk2JtQ4V5UO41Pda21-VXxIKVQUtAJCNGJ4d_SplsJ8_M6kdeWOL4qU5abdvYONajCDM3fwhRbc_Hqgw9JSQTI&dib_tag=se&keywords=arduino+nano&qid=1709169632&srefix=arduino+%2Caps%2C392&sr=8-3
	Arduino Starter Kits	2	\$90.00	https://www.amazon.com/ELEGOO-Project-Tutorial-Controller-Projects/dp/B01D8K0ZF4/ref=scr_1_12?dib=eyJ2IjoiaWMSJ9.AcWZy-Yq4mDThnzEHozxzGRJADG8tyBh_Ri3WWXtlv4NvXIA30GDDaHnY56x0D6vC6XugA91UXIURXdrT7vX28G3KwEe0EJtOL1Hm71XYVbmeI7-IRbhpIa8DRfChicfrHura_QgeTzfsXA8dIKZ4VLN4Hug5-arY9nZA0n6GqYvQO8JQInx-9eYvXWhtTYTsOBbYsnVYHJH8oQ7GlgeB9LIoH1TCKVN5o_2ULq7hne8W0ZD0WuoYiL18zi69sSc-GOZxO_Mrl58M8&dib_tag=se&keywords=arduino+kit&qid=1709406495&sr=8-1-spons&sp_csd=d2lkZ2V0TmFtZT1zcF9hdGY&pssc=1
	Arduino wire kit	1	\$7.00	https://www.amazon.com/dp/B01EV70C78/ref=pd_sim_hwxPM1_sspa_dk_detail_p3_sp_d5?pf_rd_p=41d9180b-a439-4c27-808c-98db8d46673c&pf_rd_r=DQDWAECZJ7BXG72Q9J38&sp_csd=d2lkZ2V0TmFtZT1zcF9kZXRhWxfGhblWfOaWM&pd_rd_w=4Eg1h&content-id=amzn1.sym.41d9180b-a439-4c27-808c-98db8d46673c&pd_rd_wg=BW9Hv&pd_rd_r=443e2a27-85cf-436f-9828-49d99993707e&pd_rd_i=B01EV70C78&th=1
	Black/red wire, 18 gauge, 50ft	1	\$18.00	https://www.amazon.com/BNTECHGO-Silicone-Flexible-Strands-Stranded/dp/B01MCRY7OT/ref=scr_1_2?crid=UN81VGTFORNG&dib=eyJ2IjoiaWMSJ9.DGgq5K3pNmE6qNN14NG5s9NoUSditku_nCWJibQOzAY5-bT54cpEBIISzthsXN7yN0EG88DIOVhqlFJHPagWtrHsxie2fv2AXysOsyG8ePnqpLfbORpbFmfPovKIUUCH-CL_OGLA1poCSEFPt4TRdLknqXhKdWbSRmN2NenUv07l0qUL-DWwK8wZVXTR_r8cQSOUCohhWzr4AtIngP50ThEEdHhR9-uWl7WxZAYQI8EYF37Wl0ycXlXk0Ge26jv_b5KPFYOOw4i4dY3uORP9Aax0zAeriv4Idgw6IA_IHGmJ8-1LUDBGWNaI82HpBq-VsAMxECe5dd4zmloOrw&dib_tag=se&keywords=16%2Bgauge%2Bwire&qid=1709406972&srefix=16%2Bgauge%2B2Caps%2C964&sr=8-2-spons&sp_csd=d2lkZ2V0TmFtZT1zcF9hdGY&th=1
	Solderless wiring breadboards	3	\$10.00	https://www.amazon.com/EL-CP-003-Breadboard-Solderless-Distribution-Connecting/dp/B01EVLJ7G/ref=scr_1_4?dib=eyJ2IjoiaWMSJ9.PdOcz4qMoffnA2C_rk-kBYR9zWu_EhsMOYyMZobomiSWdsXxkrF0CQyqYXlQm44uCyJW8LwJQVUqp4F8X-2SPy6dkx-S3tmibDqSjZRHgYqwlxIP5-fc5hDplqF37WZ6BjBHaTzKMA0X4MNoSlw7e4_FuFTTROGHg_p1LQ6xDgXEVTNlCv9NylsIp1u4TQHO46VJg_l_cEiUimRXI9eF-VvFVHl4vDKol46mY4-VcmXztcnaR7aJvv_QLLOmkVWVx9kIGCzzSy4S8eTjvv9_UoafhZOpQH55lrXE.tsQ1r2G7x5f515-OxJsEcRnYqG-1hS8moVwV7fEgZM&dib_tag=se&keywords=breadboard&qid=1709233186&sr=1-4&th=1
	PIR sensor	6	\$18.00	https://www.amazon.com/HiLetgo-HC-SR501-Infrared-Sensor-Arduino/dp/B07KZW86YR/ref=scr_1_3?crid=F2DH259MLEI5&dib=eyJ2IjoiaWMSJ9.21MRB1c228LD8gvYFI-nAW_M6YHmhZXRi2HA5hPBL2XorunPdGloiau5YXJl1W1cZgttenHb5SIE79SdVn7McGpRQhN5w6jYQO6MV4.IvElms5W-9Esa_yHe2qmhbWJZRSGa5mvepGjMcSDJ24g-4gtf0kBSakCfAkkNkvDFR7vY50eUqPRNkb7Qg8rapN_e8o56YdKEpTh12MB9vagmJXtkxR7L1nsGkVWkU.8XRPkixEnkrZWK_

				0uPMYbN8I z.InkhJL.BAgRXTdJRjs&dib_tag=se&keywords=pir+sensor&qid=1709169671&srefix=pir+sensor%2Caps%2C450&sr=8-3
	Counter	1	\$15.00	https://www.amazon.com/DIGITEN-Digital-0-99999-Proximity-Magnetic/dp/B01DNLRUAU/ref=sr_1_3?crid=9TGO7ZYGBI42&dib=eyJ2IjoiaWMSJ9_EFVxvOM8xb-EH-KENOF6bbm9OSp7ETu7ugCchbafp_zQVS6Z2jhg2T5fakSQf3zBSD2N-hdJ6im8nBWIR3JiUebn7PUlbbCgGMQWUaZUmHAvOrpuT5Bxcdl1dk4rsi3y7Zt0l6sAphpt8IOUe80Q-IMWg6L6zacdQ5gVrbCUX9GGDO3Y8PmySPmgI6VC0kaaCKrptCRILFHzUw-pQj8wVvW5PAFfXBMRLh-uLHWpQ_PwZ55dQR-5CB5YrPBRqdEntCk3f6ohIWzQk3pta90&dib_tag=se&keywords=L.CD+counter&qid=1709169671&srefix=pir+sensor%2Caps%2C450&sr=8-3
	SD cards	5	\$40.00	https://www.amazon.com/Gigastone-High-Speed-Olympus-Panasonic-Digital/dp/B0BZJMDXWX/ref=sr_1_1?crid=24GUUBR1J3IL4&dib=eyJ2IjoiaWMSJ9_Iz8PX_BeEY9Dkz43cbBoH4sFBZ6wcpYBQ6dqDkO-xqYBxyb1cY4TaiJD2JFjgRHu2RZJ20_ZquS26IEYYShm4XpC9X6MF57V6CJBTJe6SAYchPfs868WHEhJDeJJf8N1bCm65whj4Wq3jH0dIZNnkHA_ZUMOVm7zaASEdTJODIPtRpt-KORGyX6xHR5WV1k6_V1QZNrvWnLOU_v3R-ikAwXQkCBT9I8OTMgwY.cG4glidreQUb1ZhgyblCo7LM_z_jRt84PDBAMmS9sz9Y&dib_tag=se&keywords=sd+cards&qid=1709231452&srefix=sd+cards%2Caps%2C500&sr=8-1-spons&sp_csd=d2lkZ2V0TmF1ZT1zcF9hdGY&psc=1
	SD card reader for Arduino	5	\$6.00	https://www.amazon.com/AiTrip-Module-Conversion-Arduino-Adapter/dp/B09BYZ71XX/ref=sr_1_1?crid=24GUUBR1J3IL4&dib=eyJ2IjoiaWMSJ9_aWM2MxhONxxTLmTioWiAIfndK-8lO8QgHkUBQCvboTeaw8-FY94Gh2lluszZ-CumwfyZqooB-keFBADL.NivUDVS1hDccGdhx6fsuNtfS76Bp57mFfEkaGA4ReY5_IhEYKDWdckmY_rNhIY7nV_c9XR5ONjznbsIiNCGIiRFAQ1z9sTIV6qB-el-p6v4NeewK-q8fPpDuOq-rtflf.k_52bHmt3UvgQscMQRIubdTPo0.gCwva7IZZ974Pw0LiozisdF_fVrJ5VmsS7Hbl_9x9sU&dib_tag=se&keyword\$=arduino%2Bsd%2Bcard%2Breader&qid=1709233618&sr=8-10&th=1
	Bluetooth speakers	4	\$20.00	https://www.amazon.com/dp/B0CCP2Q168/ref=sspa_dk_detail_3?pd_rd_j=B0CPSPDPWBG&pd_rd_w=Xf0a2&content-id=amzn1.sym.f734d1a2-0bf9-4a26-ad34-2e1b969a5a75&pf_rd_p=f734d1a2-0bf9-4a26-ad34-2e1b969a5a75&pf_rd_r=KAW2V6WEPGQF4DR3X415&pd_rd_wg=QzX23&pd_rd_r=fc468acc-0287-4286-a8be-dfed9019a42c&s=electronics&sp_csd=d2lkZ2V0TmF1ZT1zcF9kZXRXhgaWw&th=1
Artistic/Aesthetic Components	Varathane dark walnut stain, 1qt	2	\$26.00	https://www.homedepot.com/p/Varathane-1-qt-Dark-Walnut-Classic-Interior-Wood-Stain-339720/305502000
	4" brushes	2	\$9.00	https://www.homedepot.com/p/4-in-White-China-Bristle-Flat-Chip-Brush-1500-4/202023923
	White fabric lycra	3 yards	\$44.00	https://www.amazon.com/dp/B08GL54Z7F/ref=twister_B0BQKBRLRK?_encoding=UTF8&th=1
	White brads	500	\$9.00	https://www.amazon.com/500PCS-Scrapbooking-Rivets-Scrapbook-Embellishment/dp/B075M7P8T9/ref=sr_1_8?crid=T7BKF83TU76A&dib=eyJ2IjoiaWMSJ9_zfkTPCUJ.CdS83sFsUPG_wmslkWxrdqfVpE8u3jsaUI5H7aQSC-6WPVusMzoiMf2lGM3Scvq677a9eOkTSz9EacFR3UO23xhExL5F23l-vpzQNg_rCNovnJ_S7U3c5kY9omt-hD5nHXElisGapL_OeaFiSnF8kDqg9cGuNDNGOYNiZxGJn86lATnjHN-Af409qlyFvQeMQvPx-ydRavilEGai9Tjin0Udl02_vnm0Zgco5stuNat6frazl3h-4RFmFuGVG3n2mOKWyc_WaF4qyvK-8KkhuKQqihMeZihXtA.pT3s6vFwikYRa1b-kKWYBxrbR3zHK8fY3lPdFT6hpJU&dib_tag=se&keywords=white%2Bmini%2Bbrads&qid=1709231601&srefix=white%2Bmini%2Bbrads%2Caps%2C491&sr=8-8&th=11
		Total:	\$1,279.00	

Date	Deadline
3/03/2024	Submit application, basic design is finalized
4/06/2024	Mechanical build plan finalized, rough electrical build drafted
5/08/2024	All installation materials purchased, construction of podium/base begins
5/14/2024	Arduino breadboard prototype assembled and tested
5/19/2024	Construction of coroplast hand begins
6/07/2024	Rigging sub-assemblies fabricated, all electronic components purchased
6/16/2024	Coroplast hand/aesthetics complete. Rigging fully tested
6/19/2024	All electronic assemblies kitted and completed
6/23/2024	Project assembled and beta tested at Jetlag Music Festival
6/28/2023	Updates/fixes applied to the installation based on beta testing
7/01/2023	Full project assembled and tested
7/04/2023	Arrive at Firefly. Inspect installation site and review install plan
7/05/2023	Install the project.