



ART & CODE: homemade

online • 14–16 january 2021 • digital tools + crafty approaches

Acknowledgments

About *Art & Code: Homemade*

Art & Code: Homemade is a project of the Frank-Ratchye STUDIO for Creative Inquiry at Carnegie Mellon University (CMU). Founded in 1989 within the CMU College of Fine Arts, the STUDIO is a laboratory for atypical, anti-disciplinary, and inter-institutional research and education at the intersections of the arts, science, technology and culture.

Art & Code: Homemade has been organized by Golan Levin (Director of the STUDIO and Professor of Electronic Art), and programmed in collaboration with curatorial advisors Lea Albaugh, Madeline Gannon, and Claire Hentschker.

Presented as a free online festival, *Art & Code: Homemade* was held January 14-16, 2021. Complete information is available at <http://artandcode.com/homemade>.

Art & Code: Homemade was made possible in part by an award (#1849738-34) from the Media Arts program of the National Endowment for the Arts; by the Sylvia and David Steiner Speaker Series at Carnegie Mellon University; and by support from generous donations to the Director's Fund at the Frank-Ratchye STUDIO for Creative Inquiry.

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arts.gov

The Frank-Ratchye
STUDIO
for Creative Inquiry

About Our Conference Series

The STUDIO's long-running *Art & Code* event series is concerned with democratizing the cultural and creative potentials of emerging technologies. Half arts festival, half academic symposium, our four previous editions have focused on:

- *WEIRD REALITY: Head-Mounted Art & Code* – New and independent visions for virtual & augmented realities (October 2016)
- *Art & Code 3D: DIY 3D Sensing and Visualization* – Artistic, technical, tactical and cultural potentials of low-cost 3D scanning devices (October 2011)
- *Mobile Art & Code* – Artistic and Tactical Approaches to Mobile, Networked and Locative Media (November 2009)
- *Art & Code: Toolkits* – Programming Environments for Artists, Young People, and the Rest of Us (March 2009)

Conference Staff

Executive Director: Golan Levin
Curatorial Advisors: Lea Albaugh, Madeline Gannon, Claire Hentschker
Associate Director: Thomas Hughes
Program Coordinator: Bill Rodgers
Business Manager: Linda Hager
Financial Assistant: Carol Hernandez
Grants Management: Jenn Joy Wilson
Online Moderation: Philippe De Bree, Olivia Cunnally, Steven Montinar

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Embroidery Designs: Tatyana Mustakos
Videography: Olivia Cunnally
Title Animations: Huw Messie
Front Cover Image: Imin Yeh

About this 'Zine

This 'zine was created from contributions generously provided by the *Art & Code* presenters. The rights of all works compiled herein remain with their authors/creators.

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On *Homemade*

These are dark and isolating times. It is January 2021 in the Northern Hemisphere and the days are short and cold. Civic life has fractured, authoritarianism is on the rise, and it feels like the twilight of representative democracy. We have spent more than 300 days indoors, with no clear end in sight; quarantined due to COVID-19, we long to see our family, friends, collaborators and peers. The joke goes that we are not working from home, but rather living at work. Yet as artists and designers we have been separated from the tools of our trade: our studios, makerspaces, and laboratories are shuttered, so that we are radically limited to what we can make in our own homes. And more than ever, we feel alienated by the mass produced nature of our material culture. How can we stay vitally creative and connected at this moment?

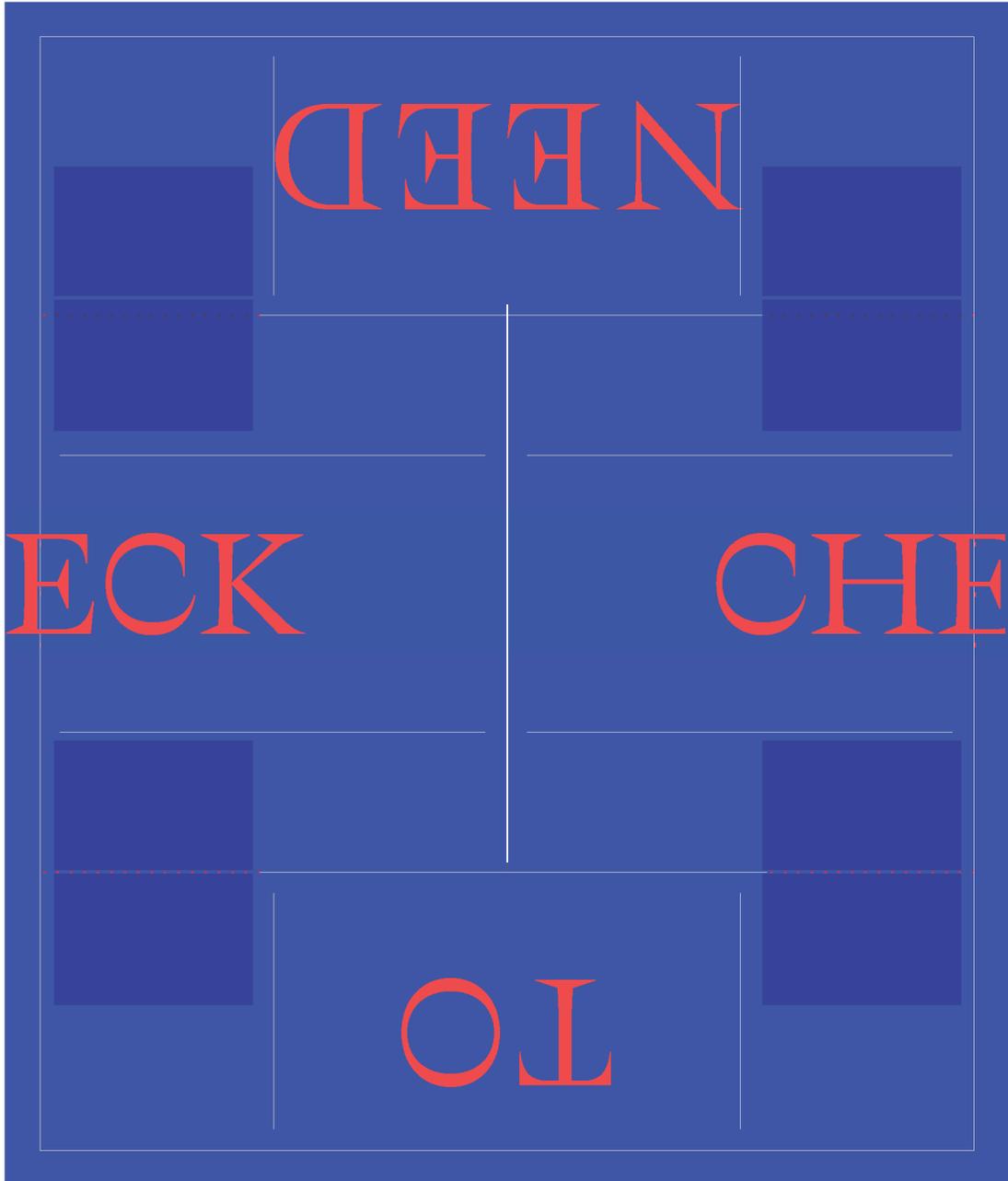
In this context we present *Art & Code: Homemade*, a free online festival featuring inspirational talks by creators we admire, who work with digital tools and crafty approaches to make things that preserve the magic of something homemade. Our festival features a wide range of practitioners who are exploring poignant and personal new approaches to combining everyday materials, craft languages, and cutting-edge computational techniques: towards the *neo-homemade*. Our festival offers an extended conversation between creators working with digital tools, crafty materials, and tight constraints to make things that don't scale. *Homemade* is resourceful, personal, and community-driven; it's accessible and grassroots. *Homemade* means made with care.

This 'zine was created from contributions generously provided by the *Art & Code* presenters. It contains designs, thinkables and instructables from their homes to yours. *Enjoy!*

~~DOOMSCROLLING~~

A Paper Animated gif

by Kelli Anderson



CUT AND FOLD GUIDE

— CUT

- - - - FOLD



GLUE OR TAPE

1.) Fold so this view is visible.



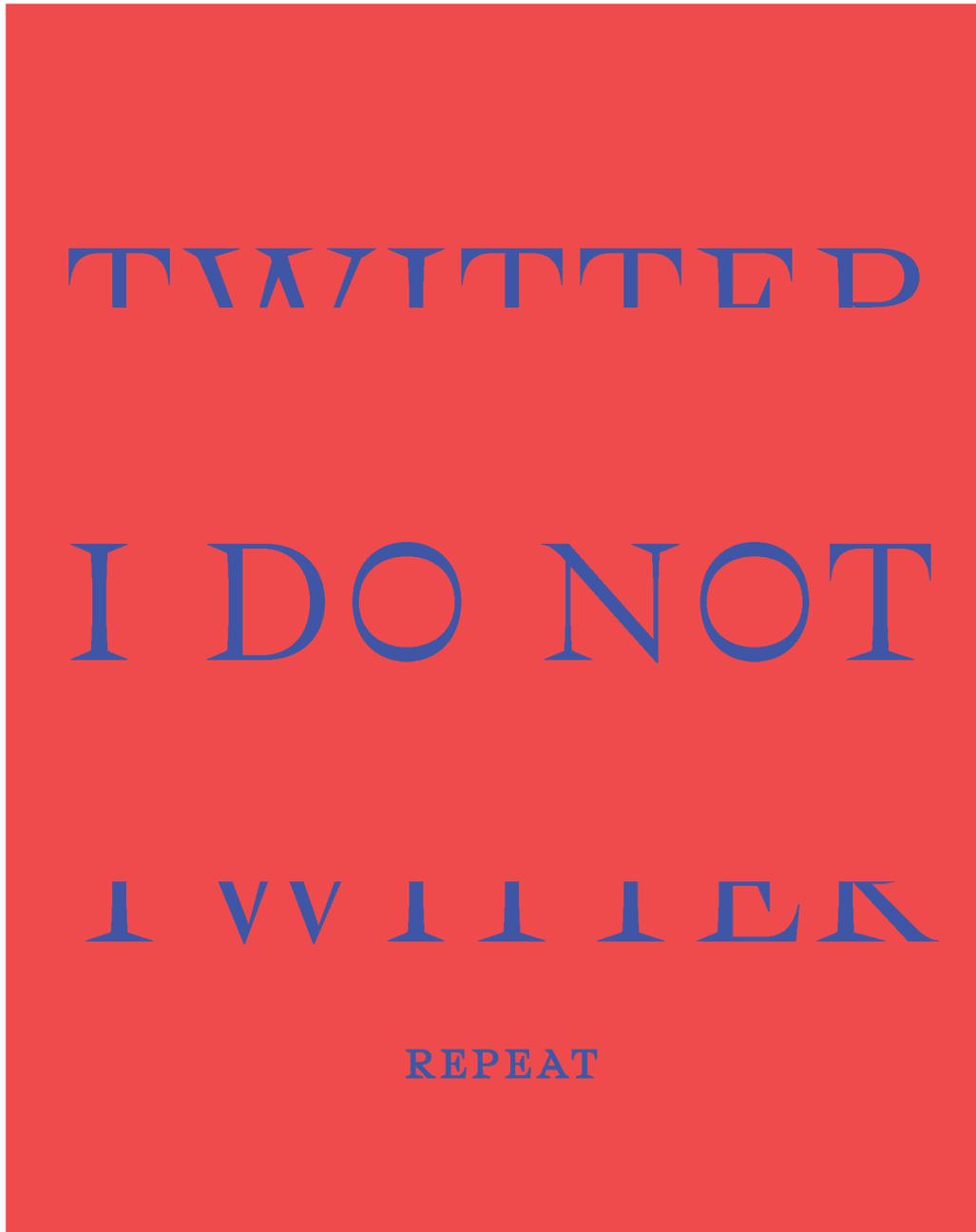
2.) Fold so this view is visible.



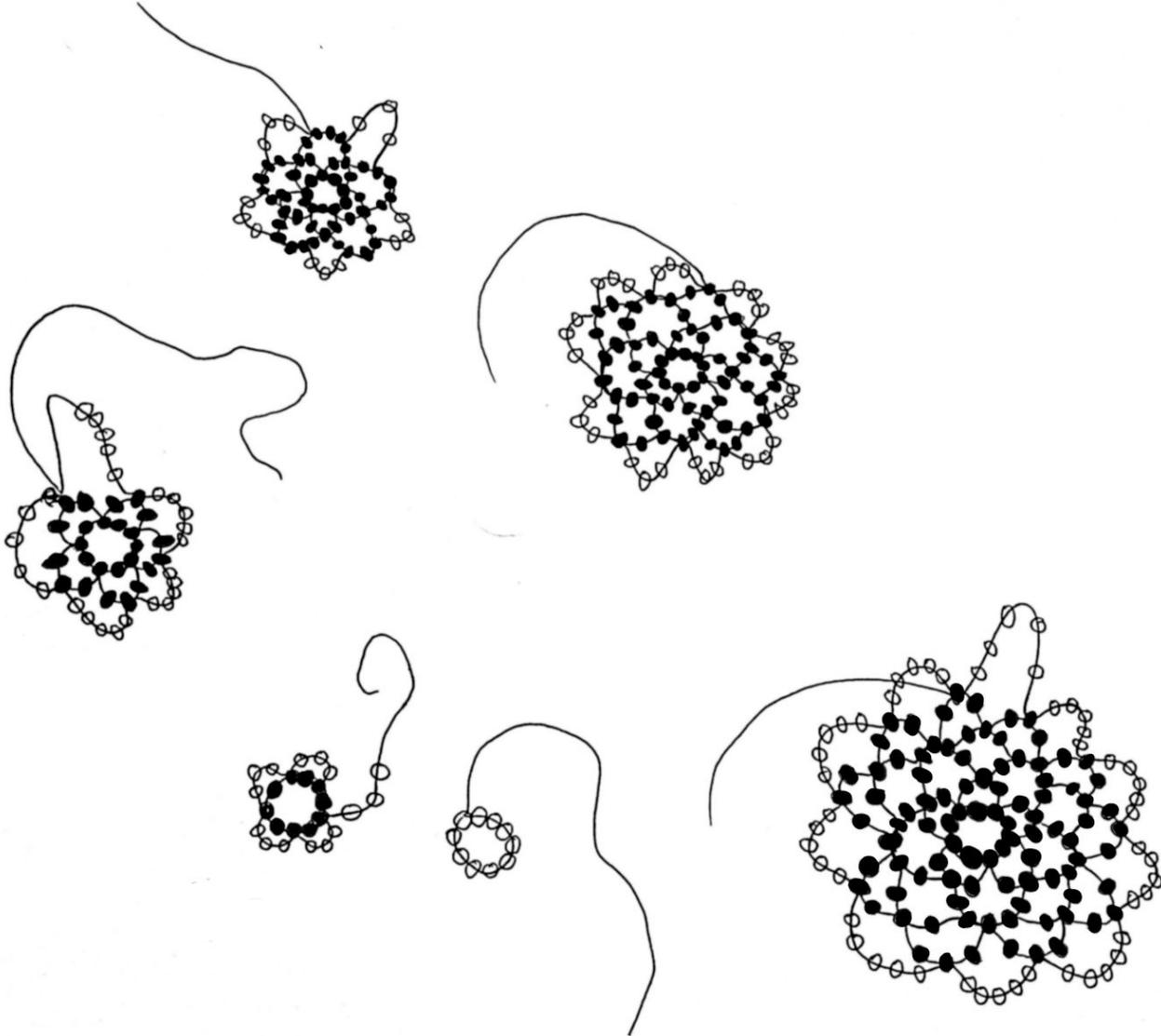
3.) Fold so this view is visible.
Glueing is easiest at this step.

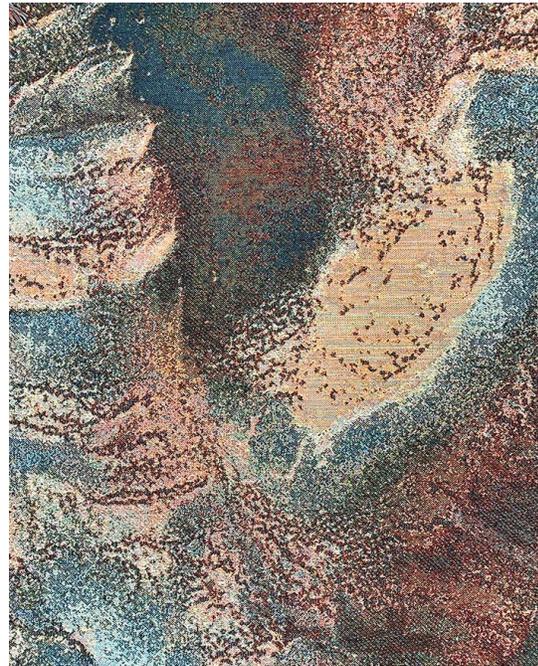


4.) Fold so this view is visible.



COSMO PATTERN FOR CLAY BEADS





Colonialism is rooted in the planetary imagination which fails to account for histories of structural racism based on geologic relations and the violent dispossession of indigenous lands. This resulted in legacies of destructive cartography and mapping now used in machine vision in space. Problems arise when imagining and understanding these places through posthuman computational tools. The construction and meaning of place through technology needs constant addressing to dismantle terrestrial entanglements spread through the galaxy—the geography of space is based on imperialist knowledge production used against black and brown bodies. Pointing outward begins with pointing to ourselves, and to computations of the past and future. Power and construction reside less at the center and more at the edges of geospatial relations.

Machines view Mars first as an abstraction, transforming numerical data and imaging from telescopes and satellites into blown up worlds, then concrete places. Satellite imagery is inherently political from its use on Earth, recognized by machines as a pixel grid of numeric intensity values that inform classification and speculation on physical properties and processes. Each image depends on the number of pixels—each fixed with complexity per pixel, with the pixel being the smallest controllable physical point represented on a screen.

*ABOVE BELOW is a series of textiles using computer code to project and reshape satellite images of ice from the Mars Reconnaissance Orbiter, a spacecraft orbiting Mars, from a neural network based on Earth. Pointing to Mars provides a different perspective and scale for imaging terrains. It operates between signifiers of planetary change, BLUE and RED—the desertification of the Blue Planet and colonizing the Red Planet. BLUE and RED both formed by millions of years of water and climate, now captured from above and below. The notion of up or down—above or below—dissolves in space, following its reversal. Both sides of the AI-generated Jacquard textile mirror a technological deconstruction coming from and being on Earth. Pixels and boundaries, real and virtual, are distorted and broken**

*excerpt from Above Below- <https://www.fulcrumarts.org/above-below>

Sarah Rosalena Brady



Digital Materiality



A material is a thing other things are made of.

They are a shared language of production and a vector for communication with the world.

A material holds knowledge, can teach you, can impose its own ideas. What does the sweater learn from the sheep, what does the weaver learn from the yarn!



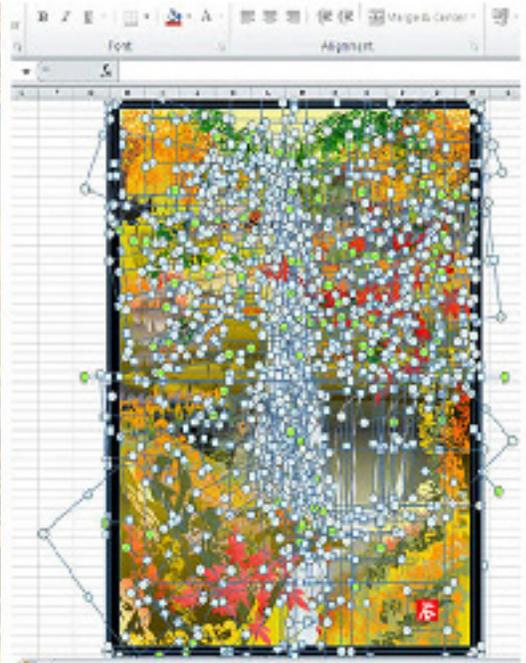
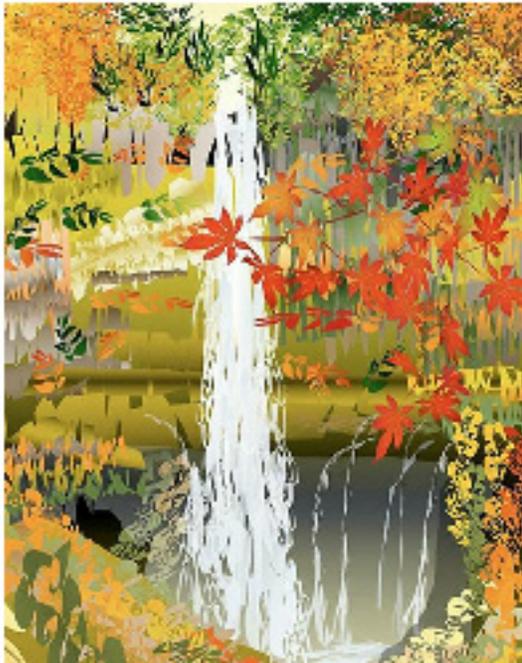
perceiving the materials connects you to the construction and the constructor

digital materials are

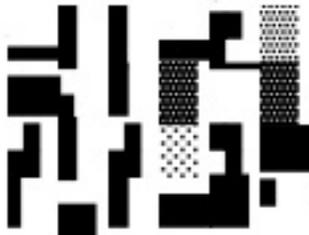
constructed and layered

themselves composed of more primordial digital materials:

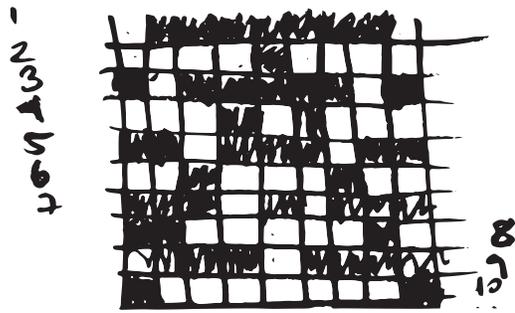
the file, the pixel, the bit



Nothing we inherit from those materials is neutral -
listen to the textures!



*written & typeset by Max Bittker in
Natalie Lawhead's Electric Zine Maker. --
Untitled iPad Drawing, David Hockney
Kegon Falls, Microsoft Excel, Tatsuo Horiuchi*



This is a draft

it describes a woven structure

every column represents a vertical yarn (warp)

every row represents one or more horizontal yarns (wefts)

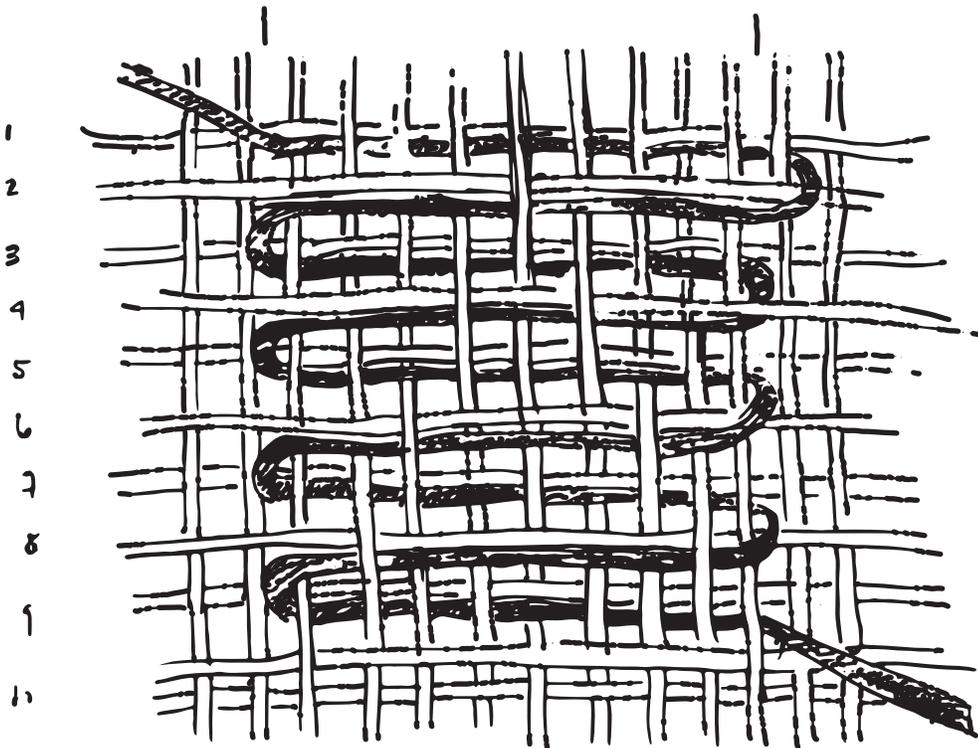
a black square represents a warp travel OVER a weft



a white square represents a warp traveling UNDER a weft

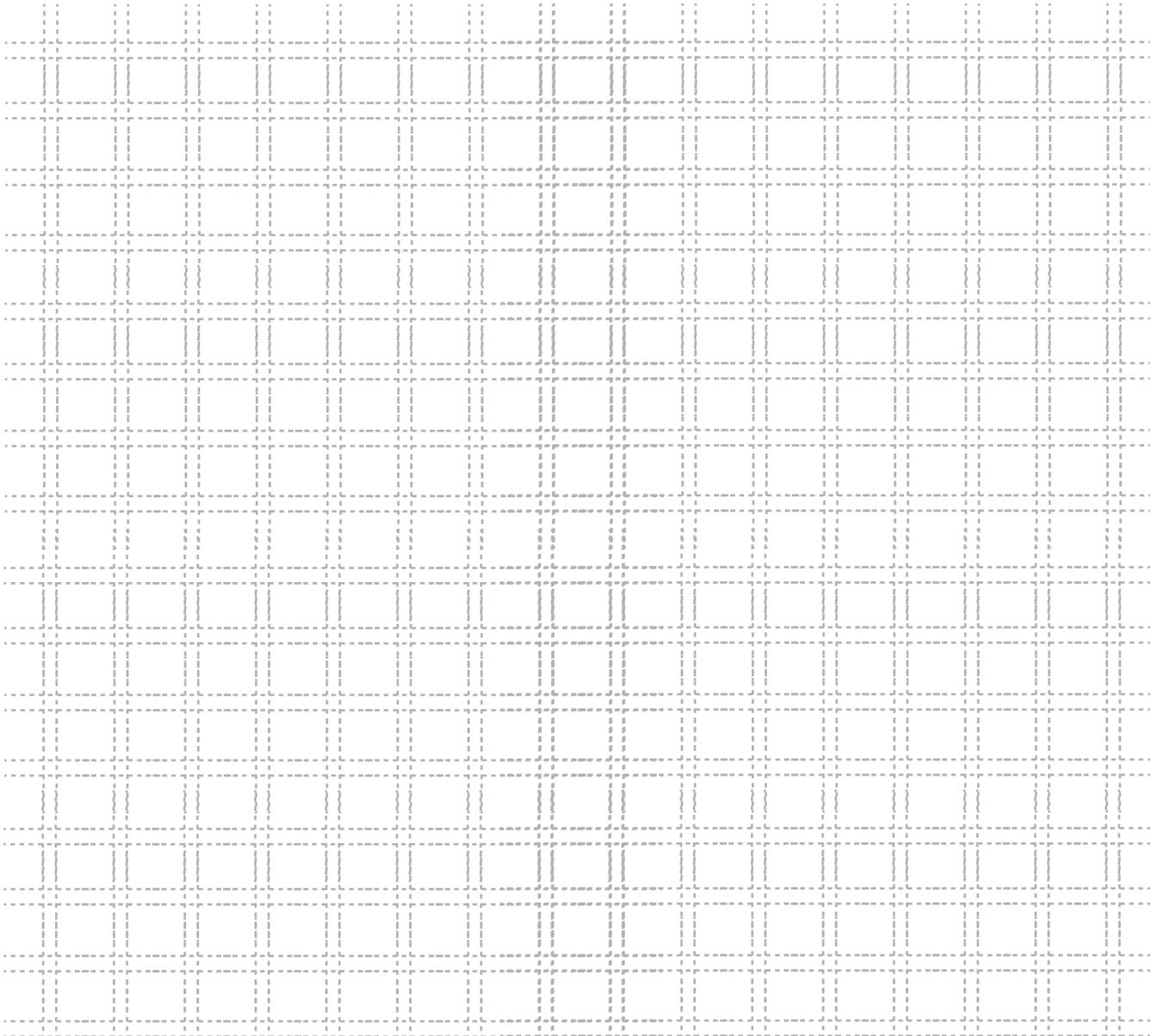
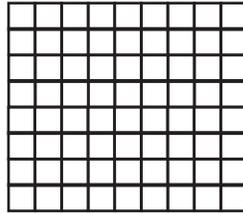


so this is the resulting structure of that draft (with two yarns thrown at each weft)



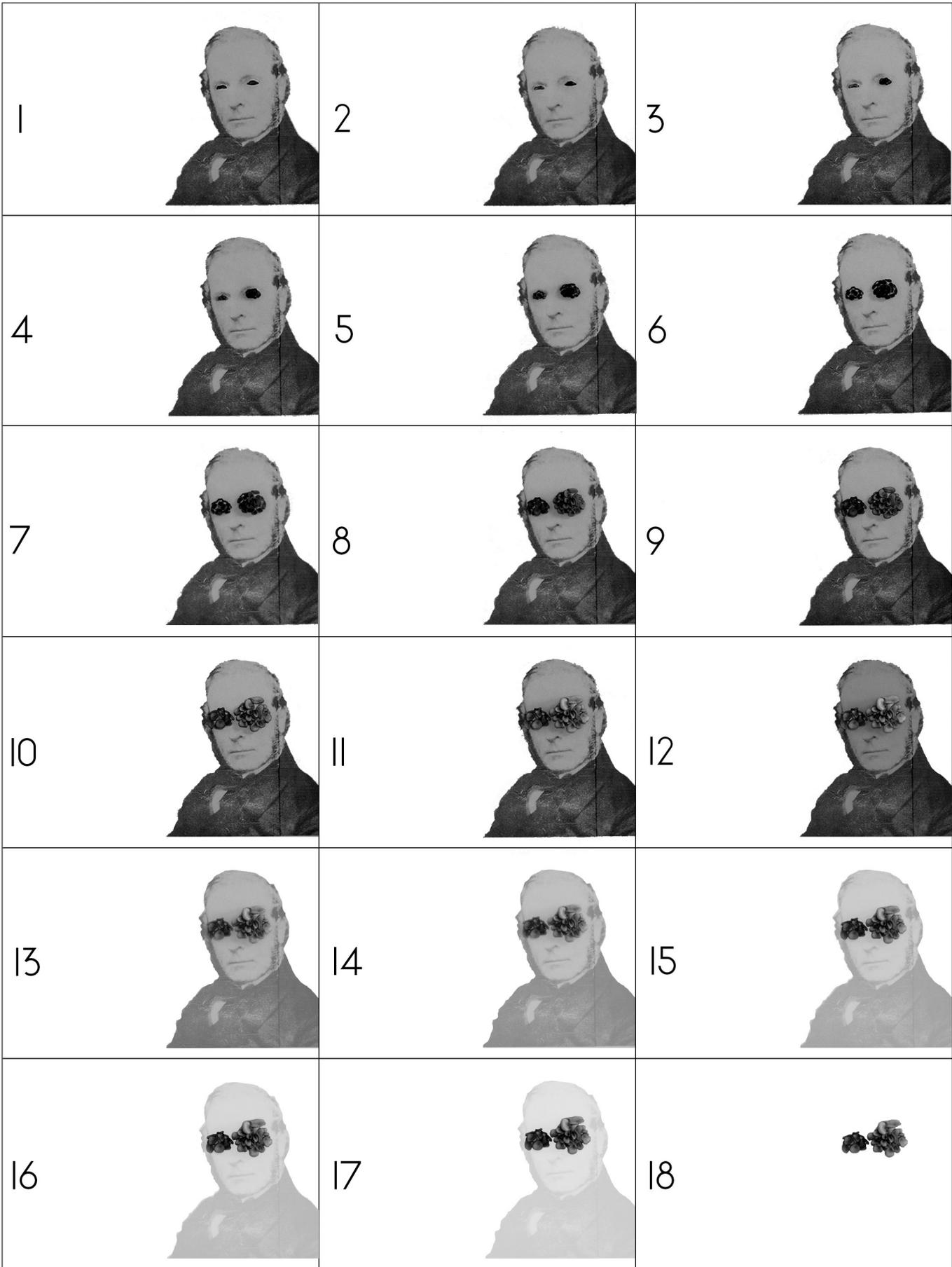
now you try (xerox friendly template)

fill in the draft with black and white and then draw the fabric or draw a fabric then make the draft.





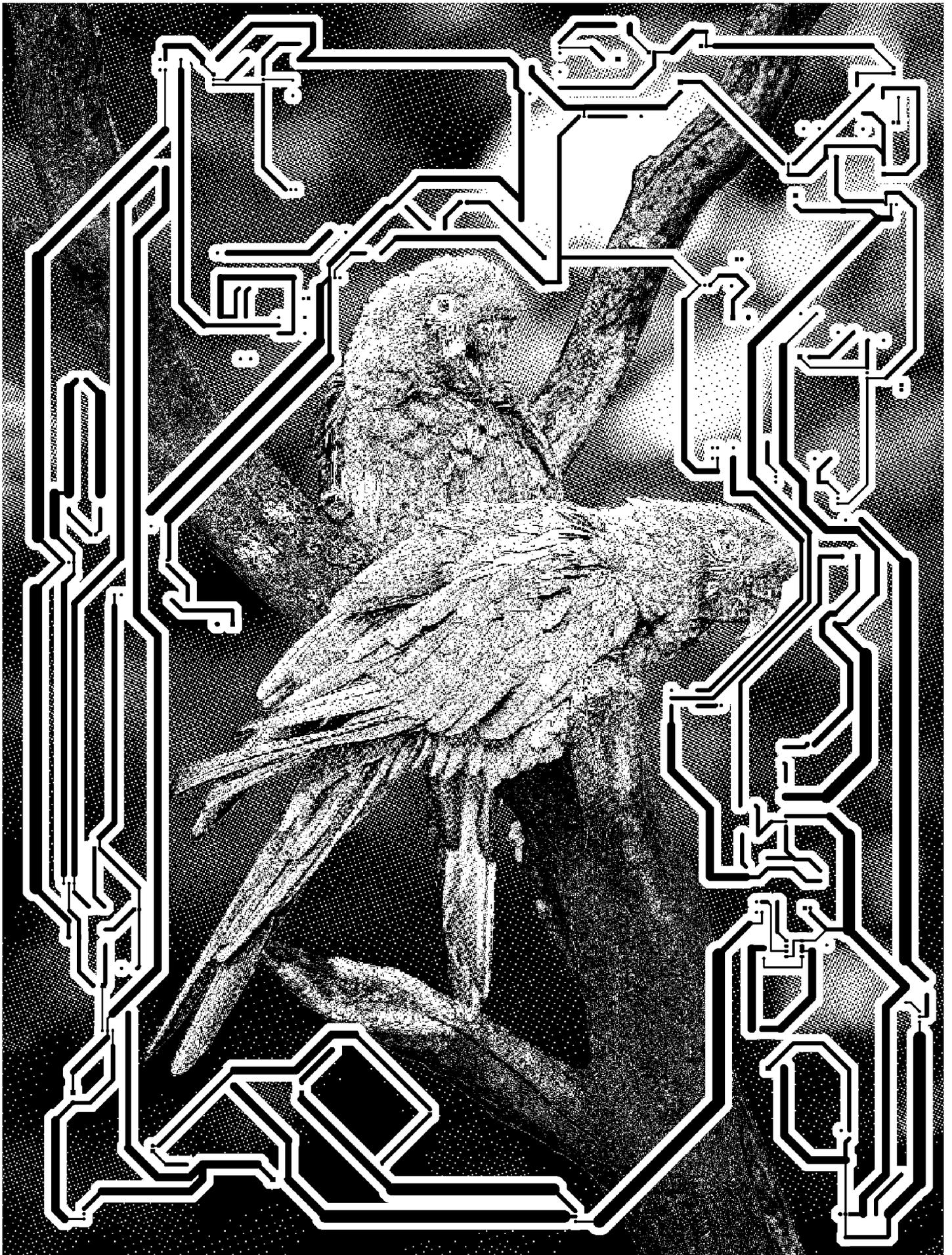
#perfectfuture

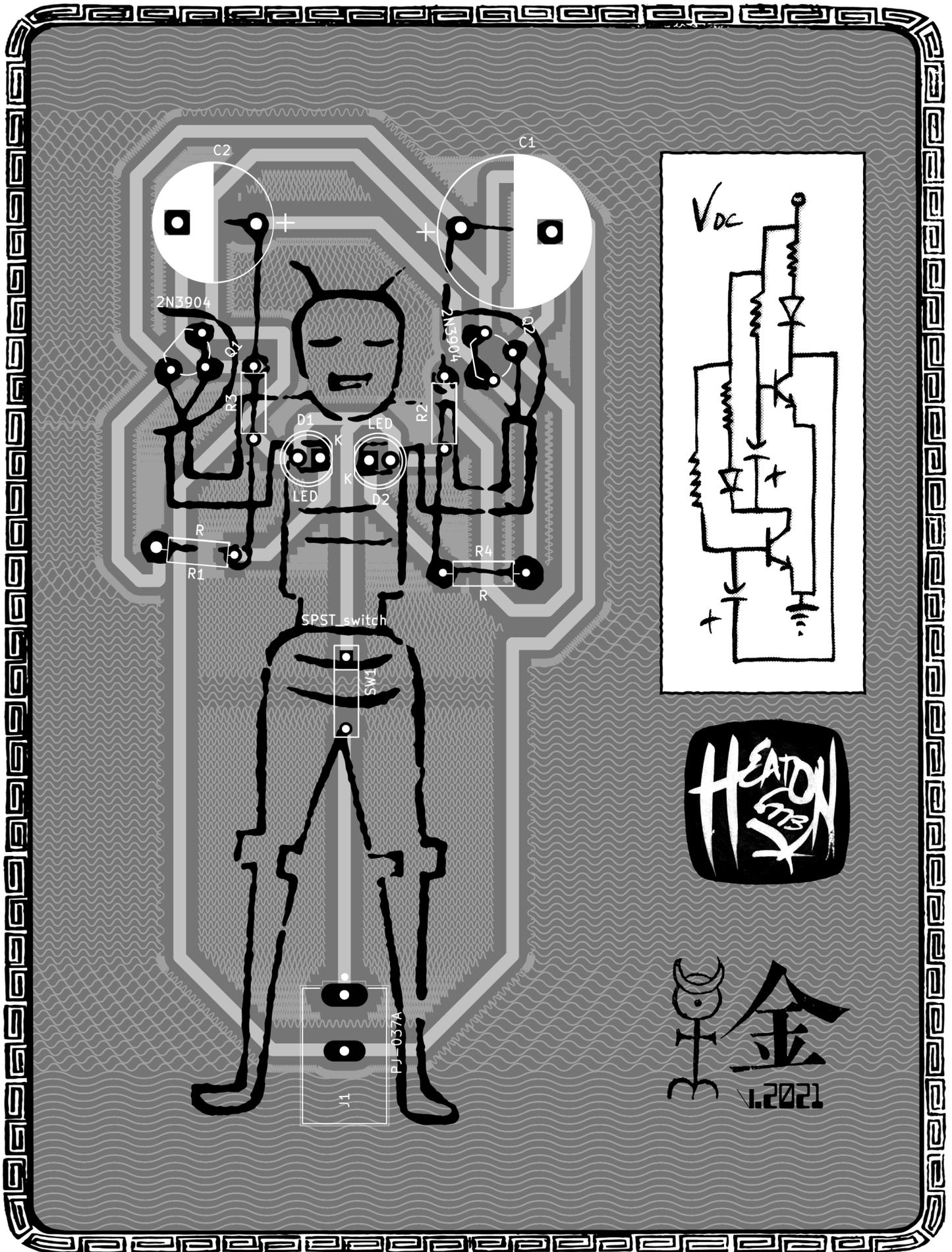


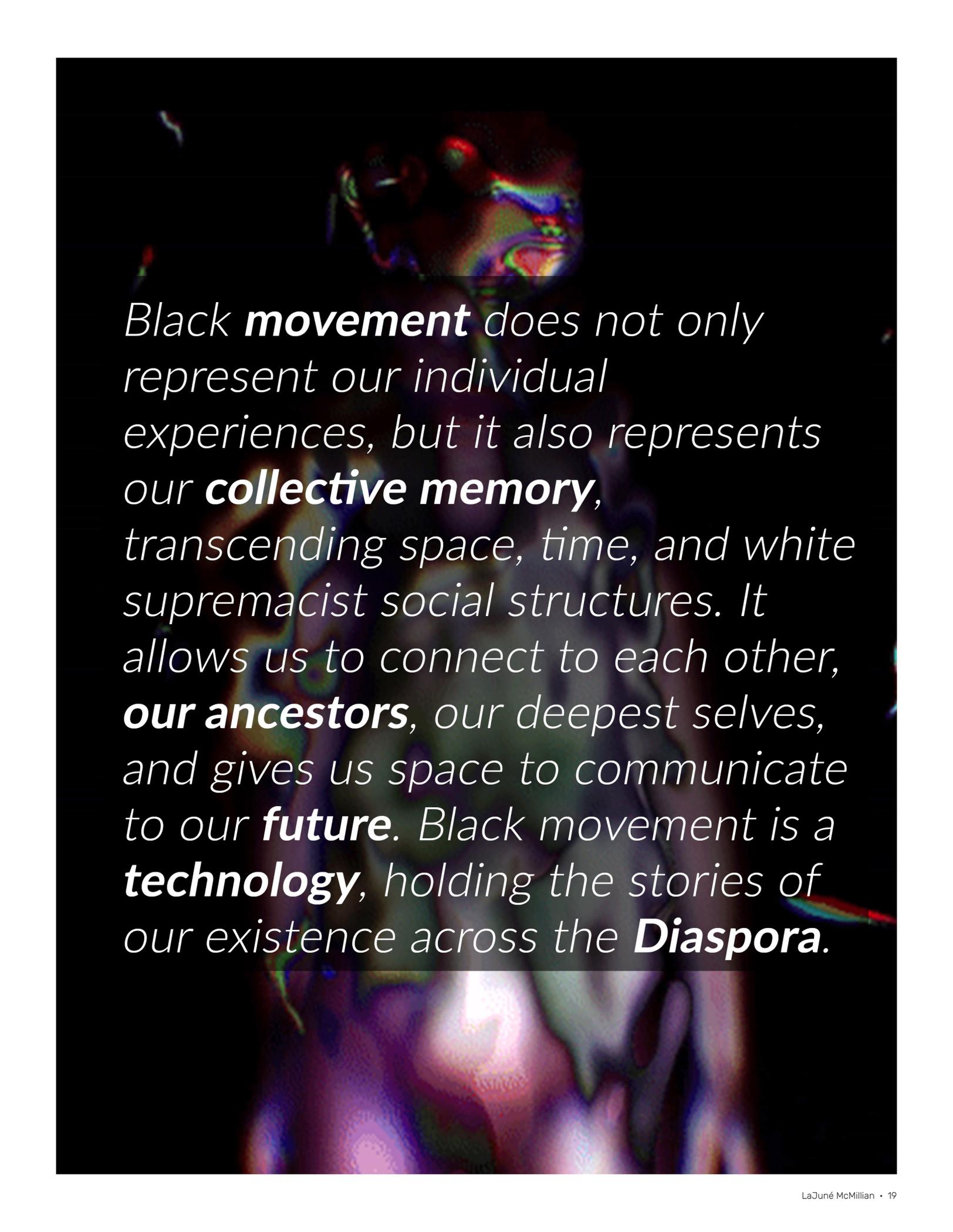
how to view your
colonizers colonizing colonists
flipbook

Watch mushrooms grow out of colonist and
plant thief Robert Fortune's eyes.

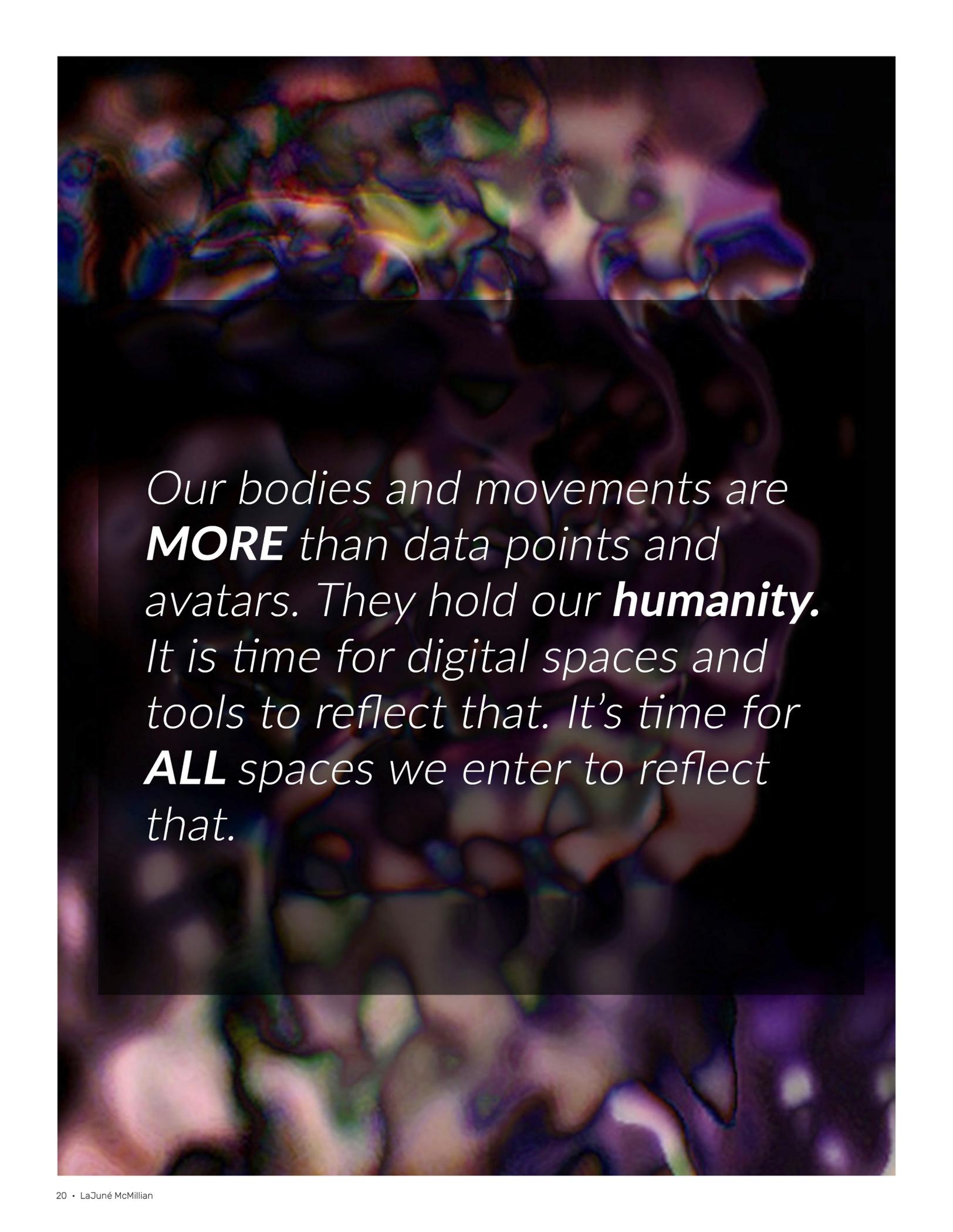
1. Cut out page along the black lines
2. Put the pages in order
3. Staple or otherwise bind the pages
on the numbers (left side)
4. Holding the book by the left/bound side,
flip the pages quickly to see the animation



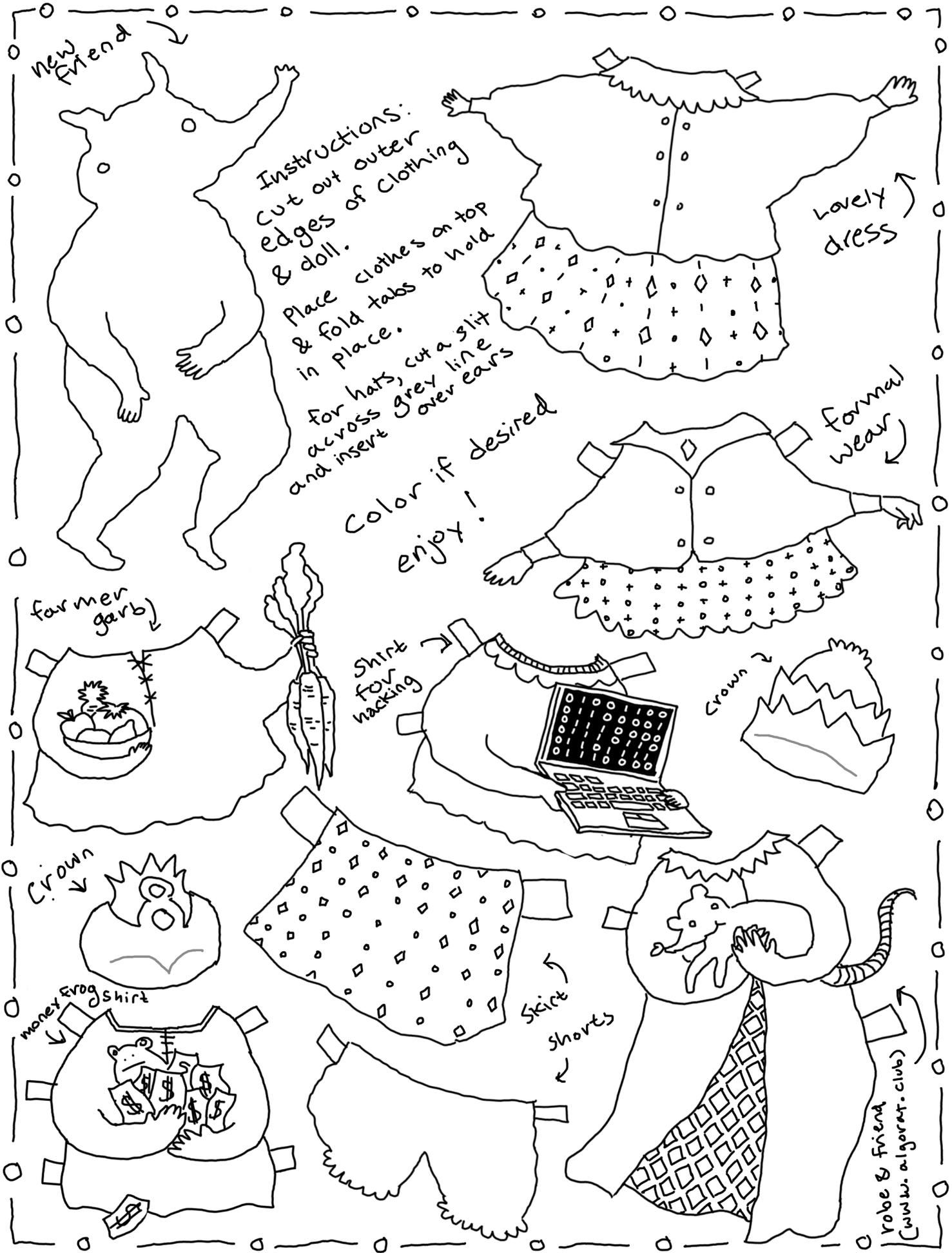




*Black **movement** does not only represent our individual experiences, but it also represents our **collective memory**, transcending space, time, and white supremacist social structures. It allows us to connect to each other, **our ancestors**, our deepest selves, and gives us space to communicate to our **future**. Black movement is a **technology**, holding the stories of our existence across the **Diaspora**.*

The background of the slide is a complex, abstract pattern of colors including purple, blue, green, and yellow, resembling a microscopic view of cells or a digital data visualization. A large, dark, semi-transparent rectangular box is centered on the page, containing white text.

*Our bodies and movements are **MORE** than data points and avatars. They hold our **humanity**. It is time for digital spaces and tools to reflect that. It's time for **ALL** spaces we enter to reflect that.*



new friend

Instructions:
Cut out outer
edges of clothing
& doll.

Place clothes on top
& fold tabs to hold
in place.

For hats, cut a slit
across grey line
and insert over ears

Color if desired
enjoy!

Lovely
dress

formal
wear

farmer
garb

shirt
for
hacking

Crown

Crown

money
frog shirt

Scarf
Shorts

robe & friend
(www.algorat.club)

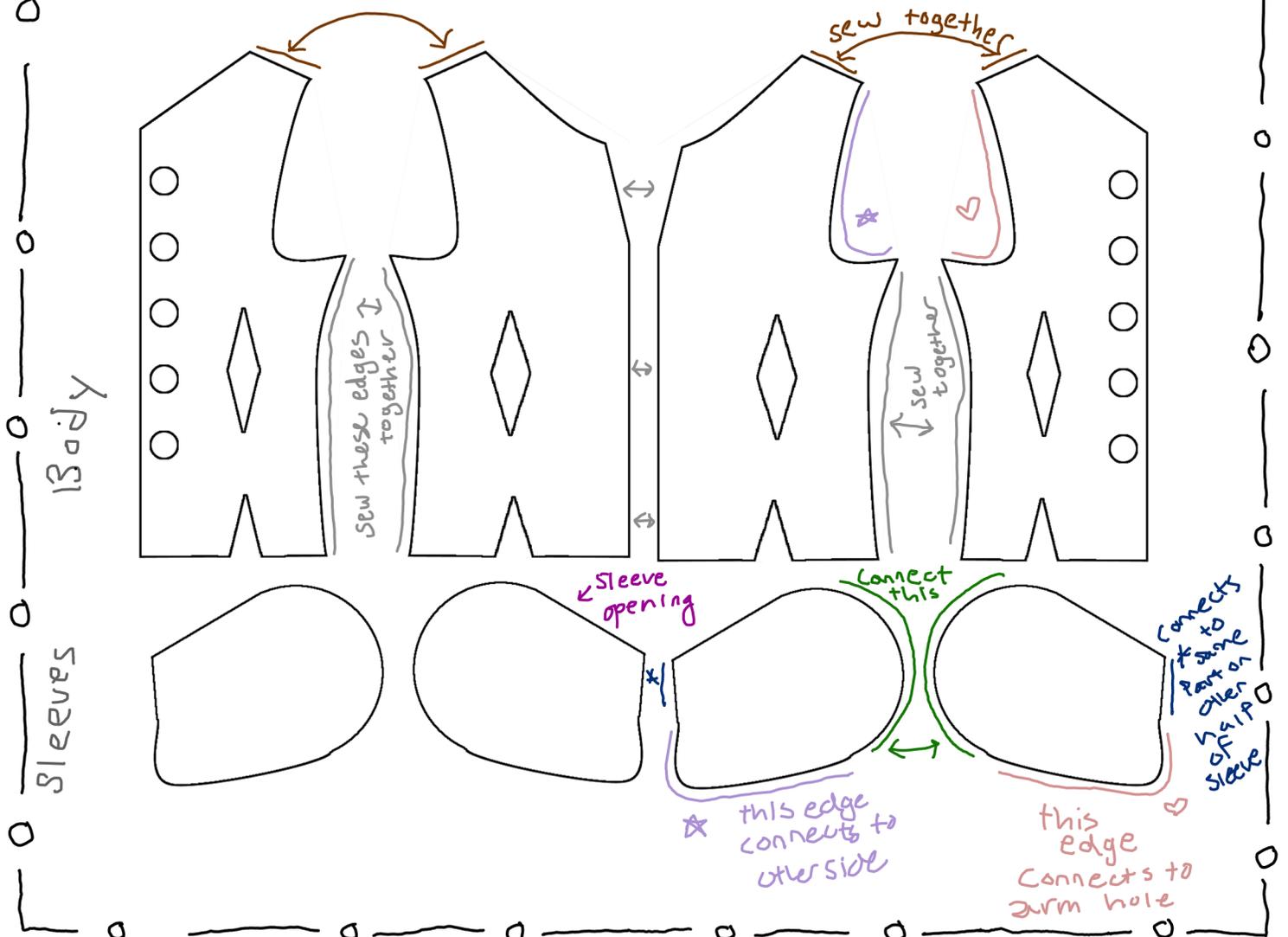
Tiny Coat Pattern

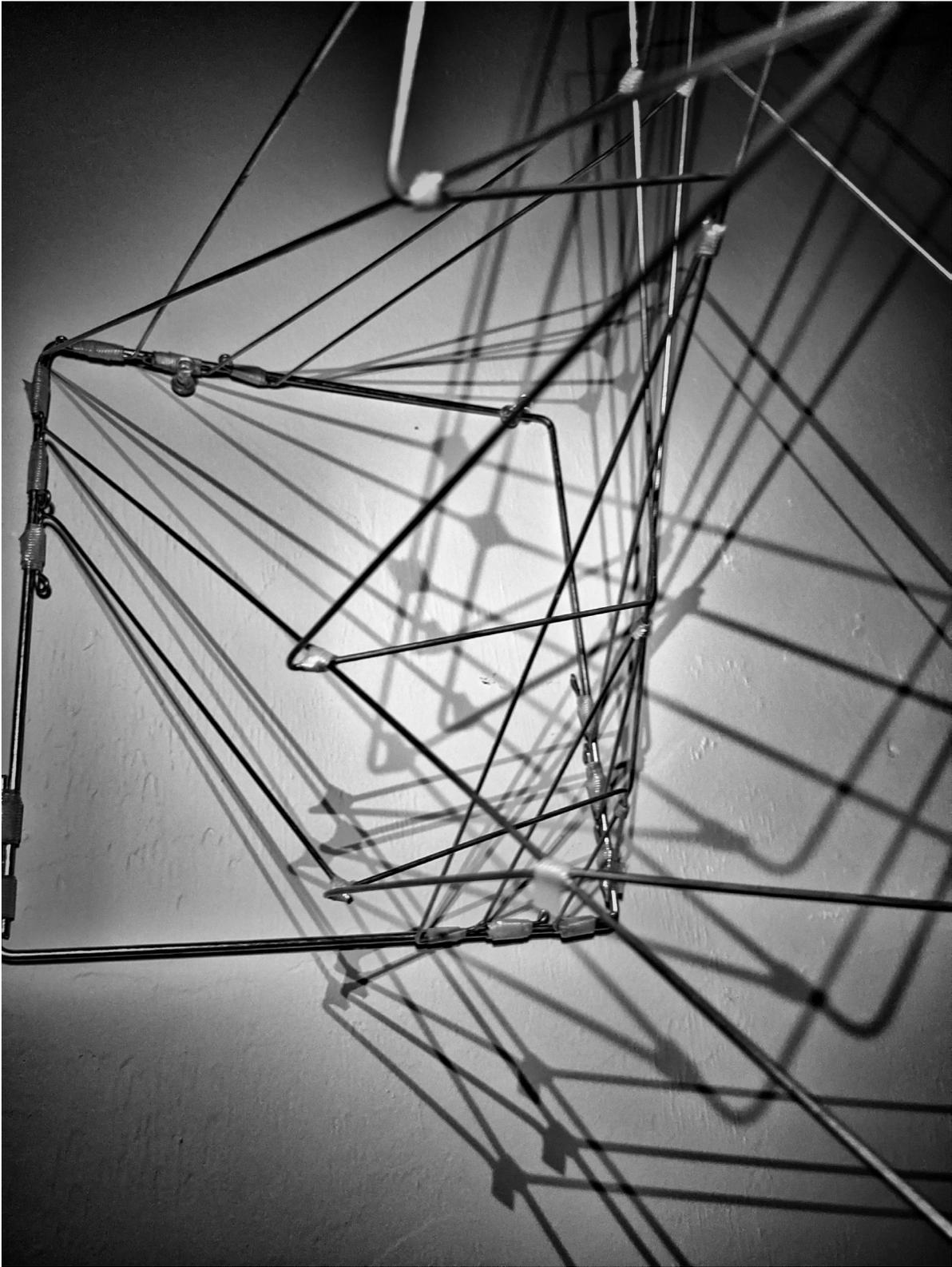
This is a pattern
for a small coat that
was procedurally generated
on P5.js and PEmbroider.



When sewed, it
looks like this →

Can be scaled to desired size



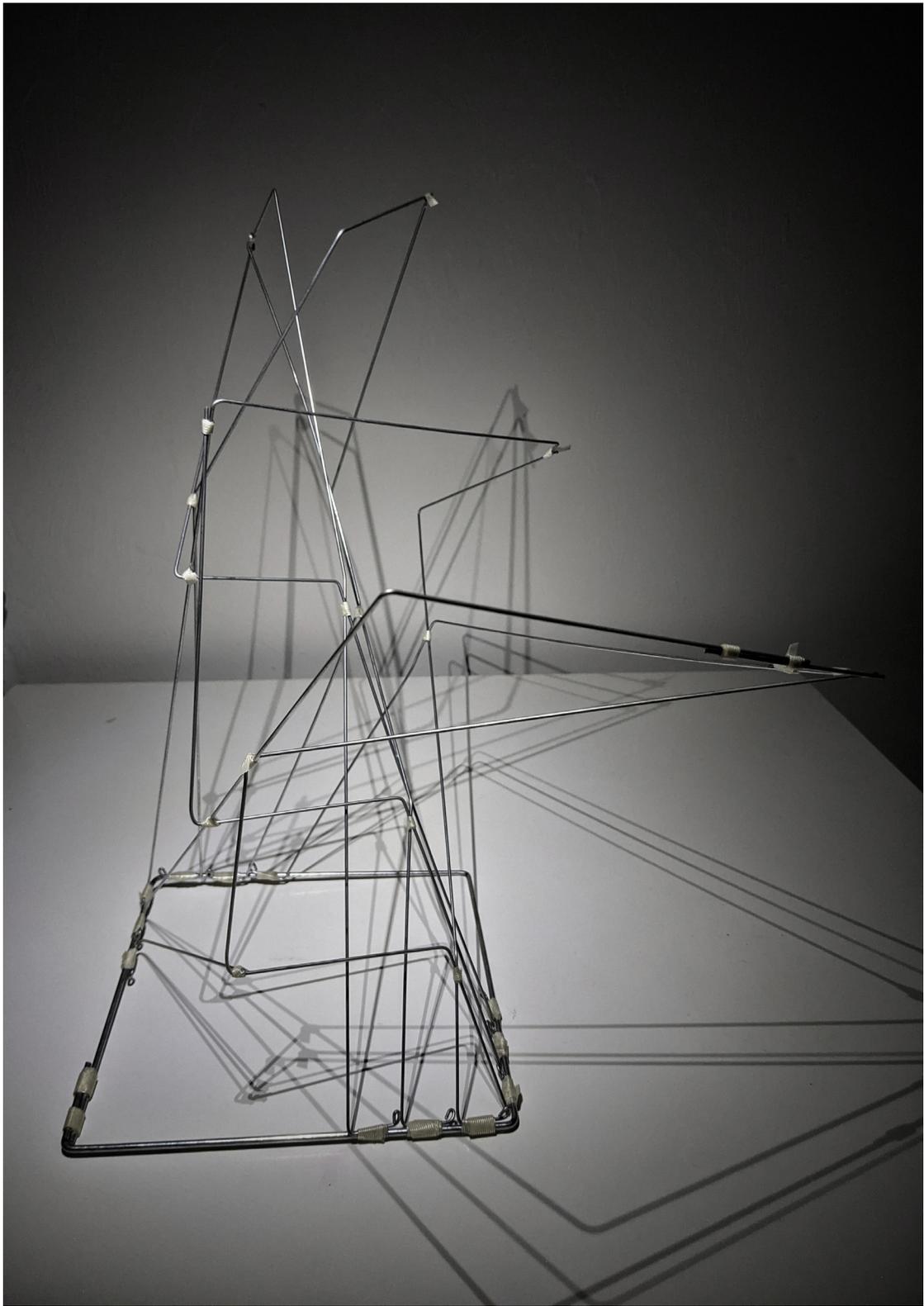


Vernelle A. A. Noel

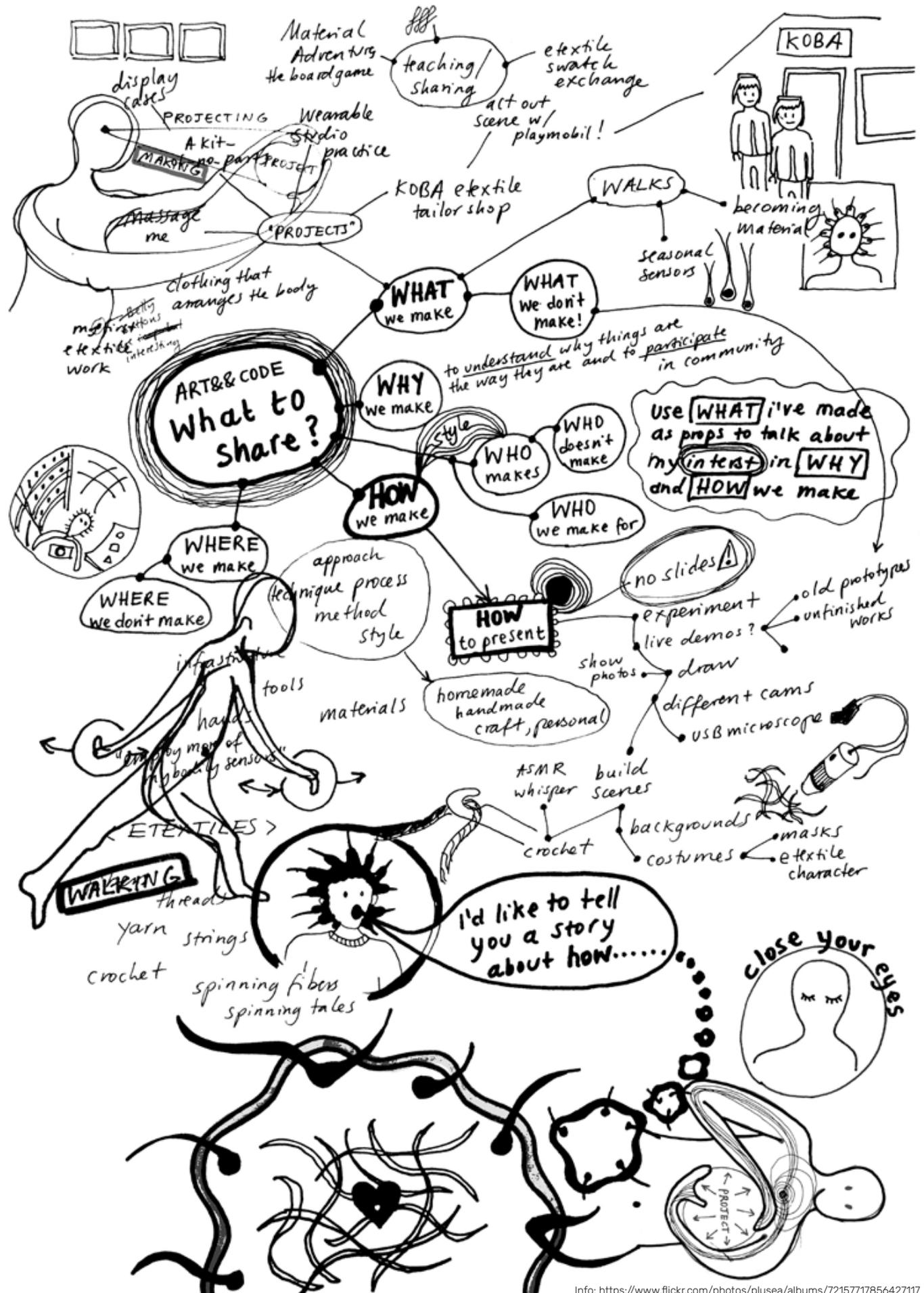
Explode, 2021

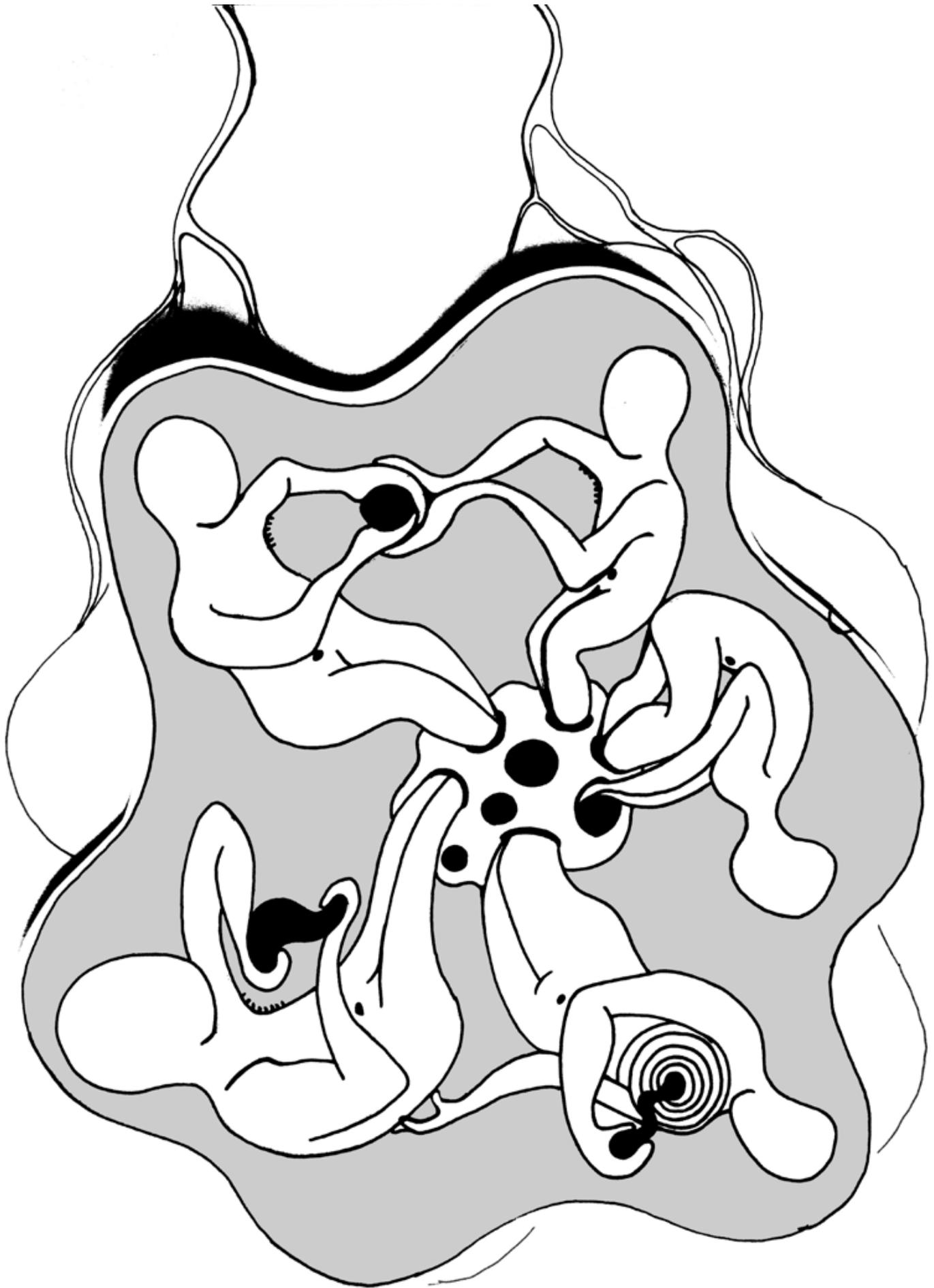
Wire sculpture, light, shadows, surface.

Created using wire-bending techniques in the Trinidad Carnival, this sculpture highlights the materials and tectonics in the craft. This image captures the continued life and dynamism of lines, light, shadows, and surface. The tangible and the intangible complementing each other.



Vernelle A. A. Noel
Explode, 2021
Wire sculpture, light, shadows, surface.

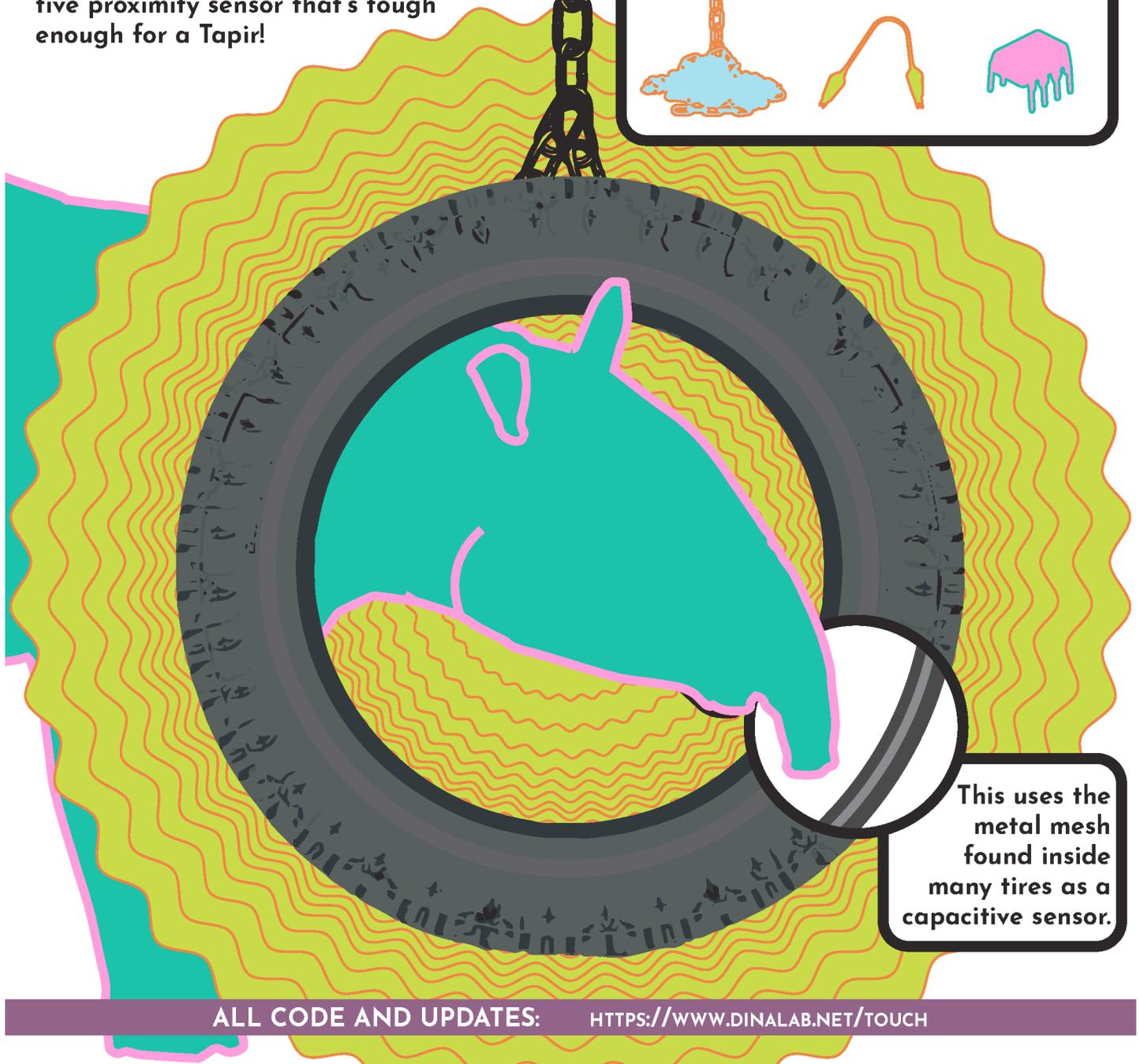




TOUCH TIRE

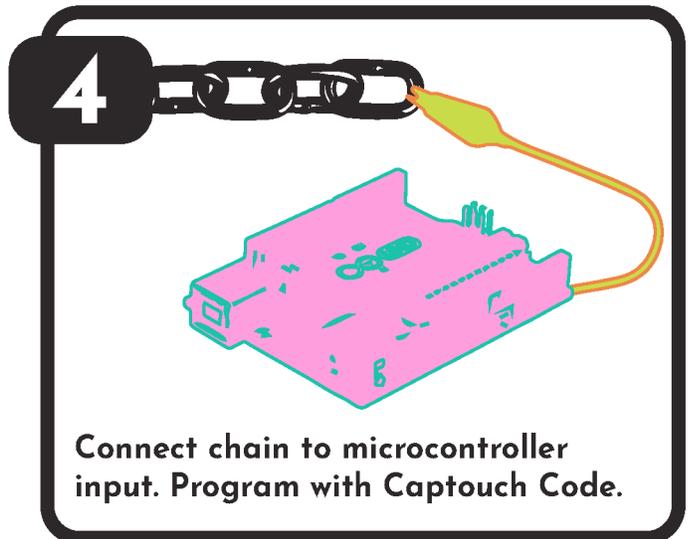
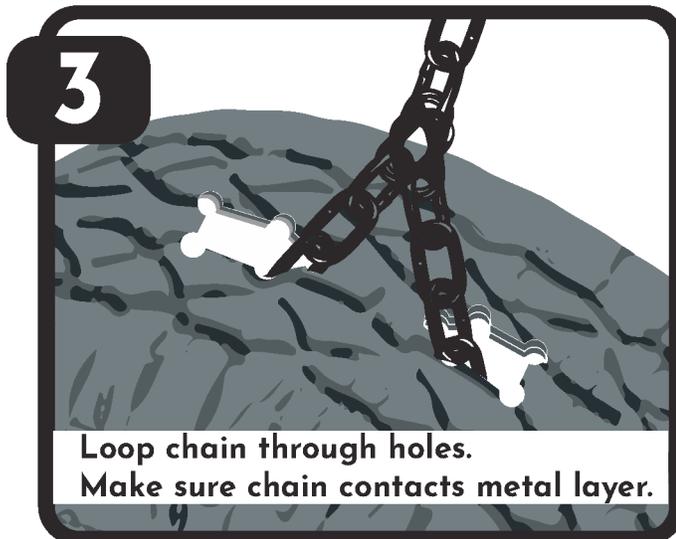
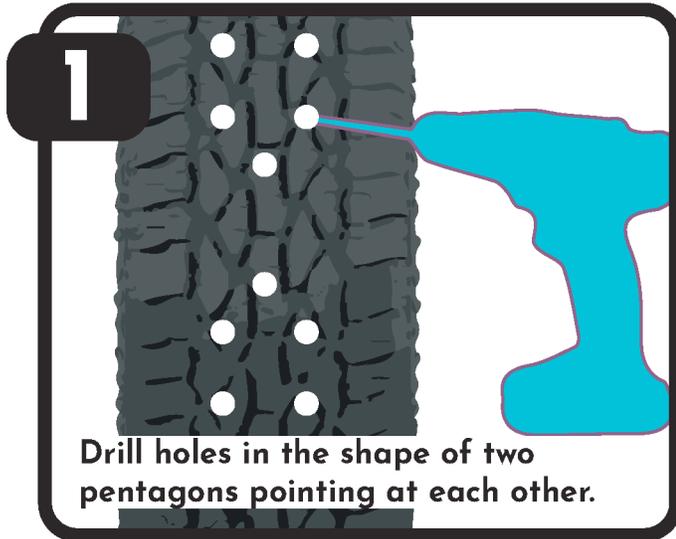
Interactions between creatures and computers can be tricky! Wild animal sensors need to be strong, weatherproof, and creature-proof, but most electronics are not.

This easy tutorial let's you turn an ordinary car-tire into a touch-sensitive proximity sensor that's tough enough for a Tapir!



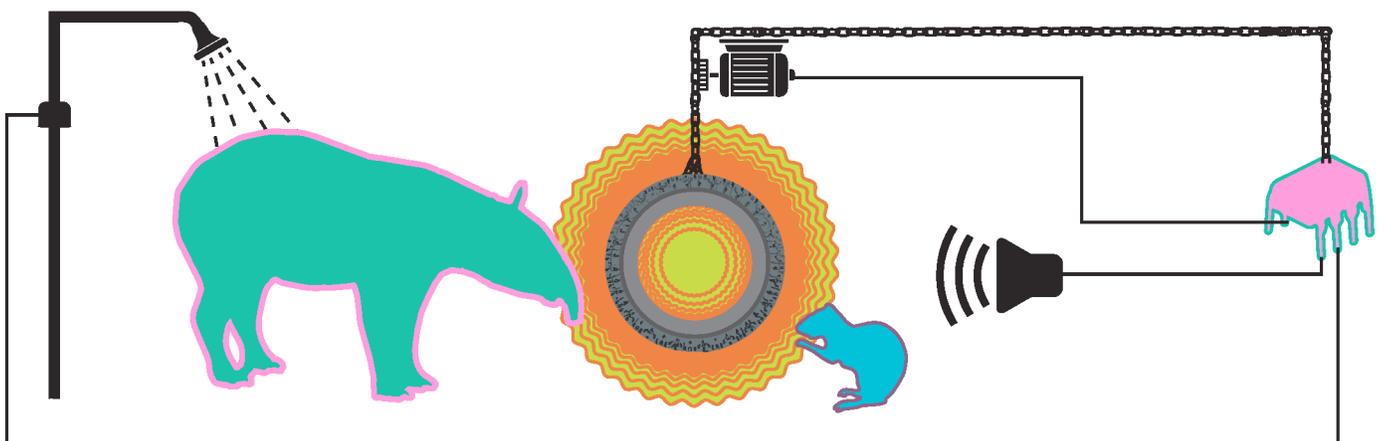
This uses the metal mesh found inside many tires as a capacitive sensor.

ALL CODE AND UPDATES: [HTTPS://WWW.DINALAB.NET/TOUCH](https://www.dinalab.net/touch)



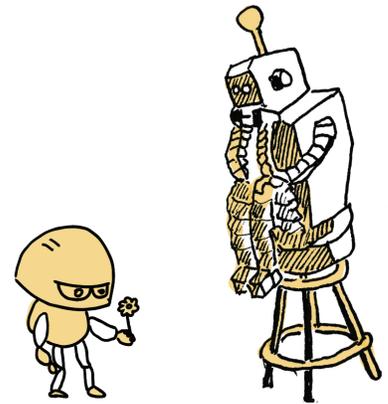
Since it is just a chain and tire, all sensitive electronics can be kept safely away from the creatures and elements! The tire sensor can detect smaller animals too!

Connect it to trigger speakers, motors, sprinklers, or anything else your animal likes to interact with! You can have as many Touch Tires as Analog Inputs on your Arduino.

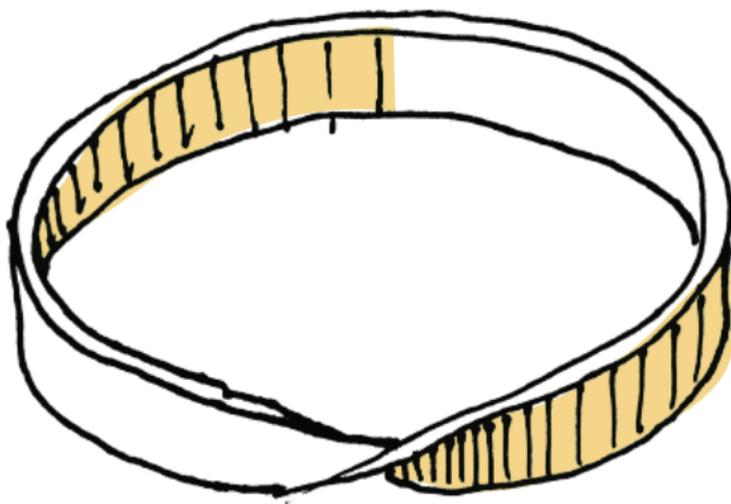


When we
address
problems with
solutions
infused with
the problem

Daniela
Rosner



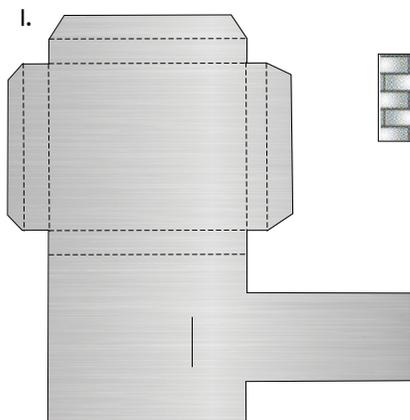
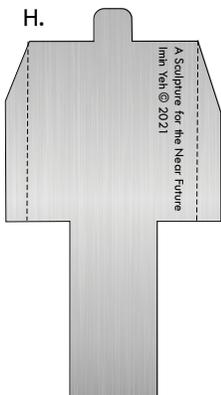
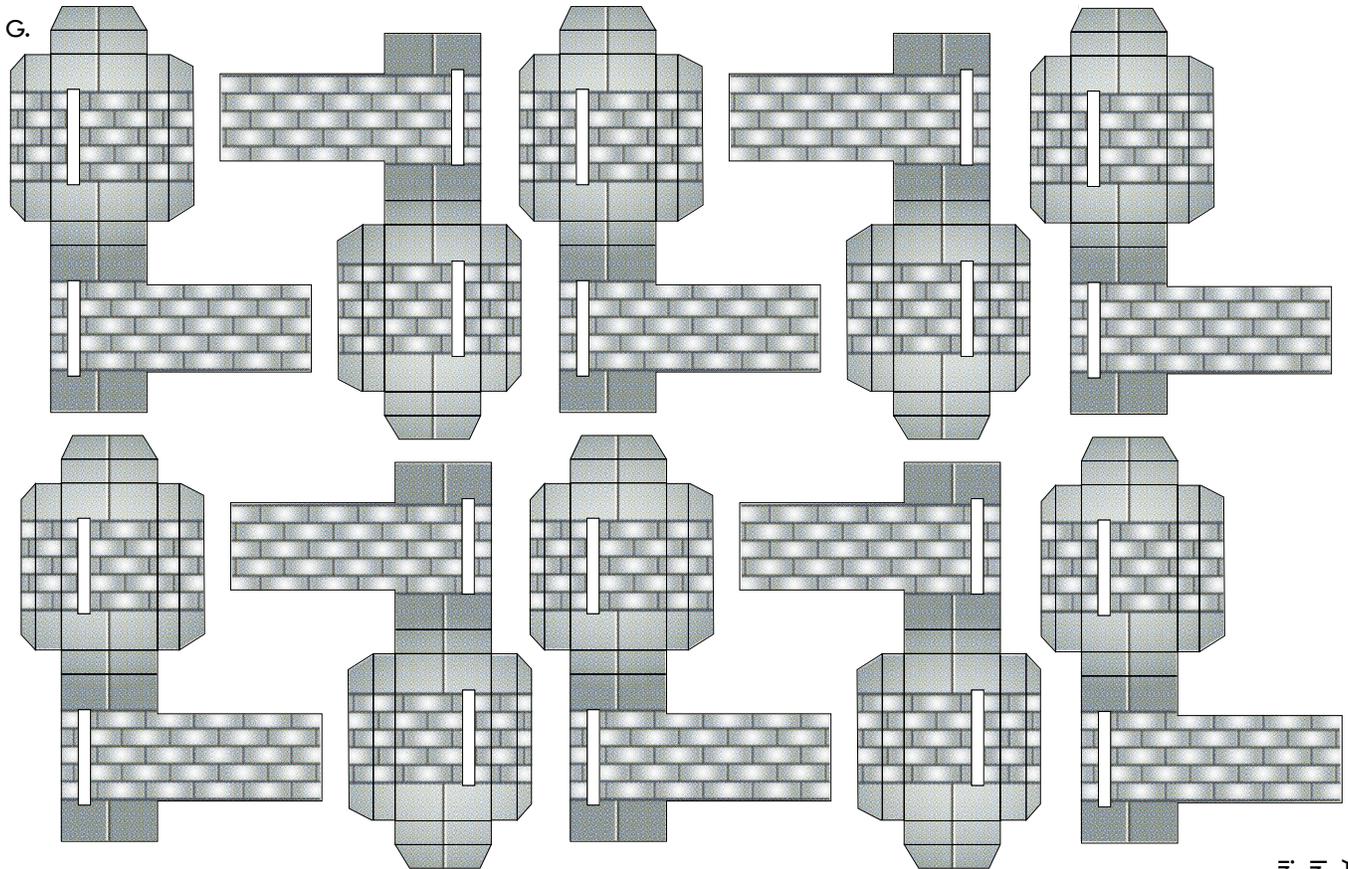
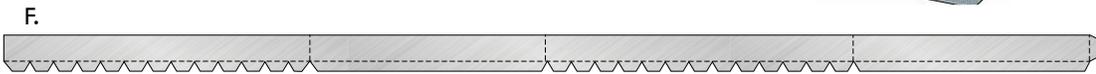
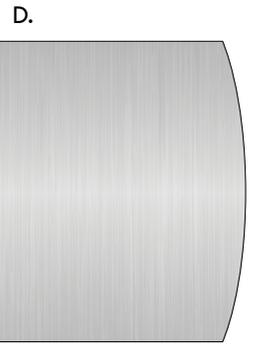
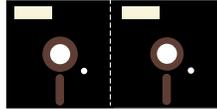
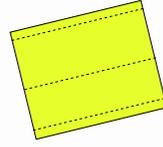
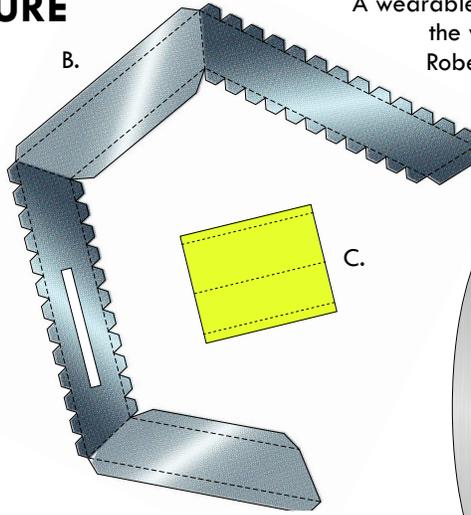
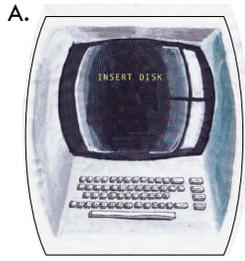
Whether designing a robot or mending a bag, design takes embracing a subtle *paradox of change*. We can escape a false notion of the perfect solution to see that everything comes with an imperfect past.





A SCULPTURE FOR THE NEAR FUTURE

A wearable, paper sculpture version of the wrist computer illustrated by Robert Tinney on the April 1981 cover of Byte Magazine.



A Sculpture for the Near Future
 Imin Yeh © 2021
 Instagram: iminyeh

A SCULPTURE FOR THE NEAR FUTURE

Construction Instructions

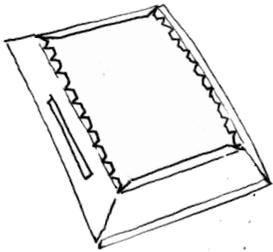
————— **Cut** **Fold** (helpful to score before folding)

Tools Needed

- PDF of parts
- Exacto blade and mat
- Scoring Tool (bookbinding awl), darning needle, shishkabob skewer, mechanical pencil with no lead)
- White glue (small brush would be helpful)

Step 1

Cut out all parts along solid lines, score and fold along dotted lines.

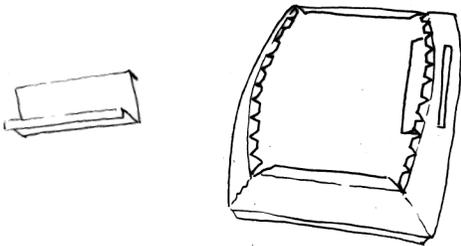


Step 2

Part B folds into a four sided beveled rectangle. Make sure to cut out the slotted opening for the floppy disc.

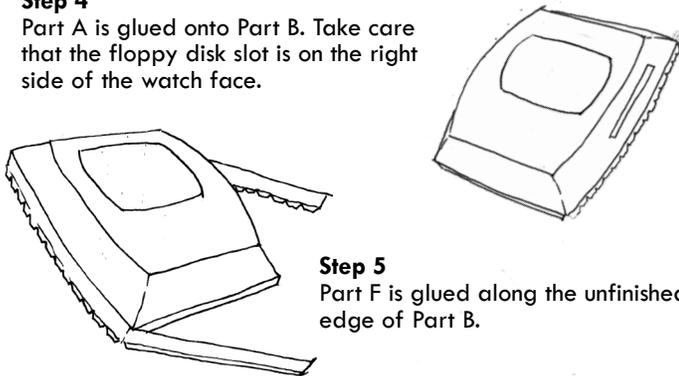
Step 3

Part C is folded and glued into the inside of Part B, behind the slotted opening for the floppy disc.



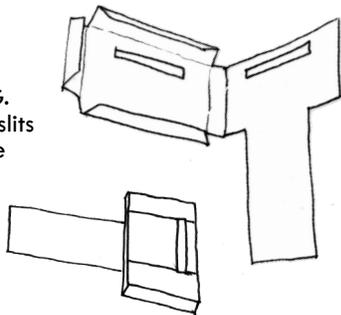
Step 4

Part A is glued onto Part B. Take care that the floppy disk slot is on the right side of the watch face.



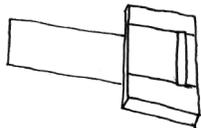
Step 5

Part F is glued along the unfinished edge of Part B.



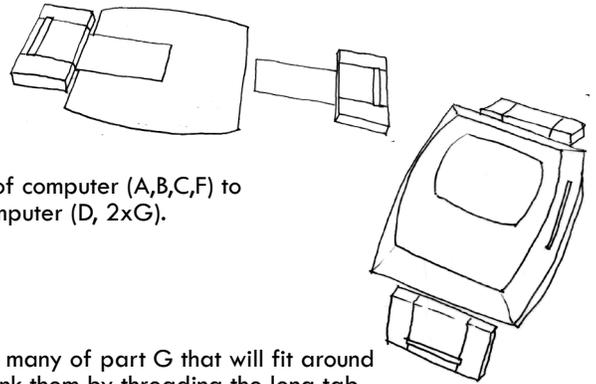
Step 7

Construct at least 2 of Part G. Make sure to cut out the two slits (this is where each link will be attached to one another).



Step 8

Glue one link onto each of the short, straight sides of the BACK (unprinted) side of part D.

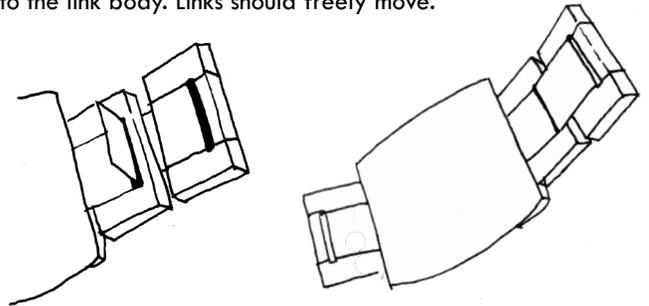


Step 9

Glue front of computer (A,B,C,F) to back of computer (D, 2xG).

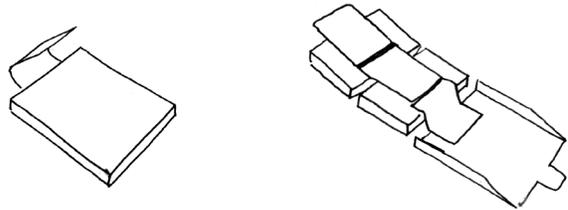
Step 10

Construct as many of part G that will fit around your wrist, link them by threading the long tab through the slits of the previous link, then gluing tab down to the link body. Links should freely move.



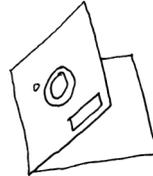
Step 11

Part H and I are clasps, construct and connect to the two ends of the wristcomputer links once you have made enough links to wrap around your wrist.



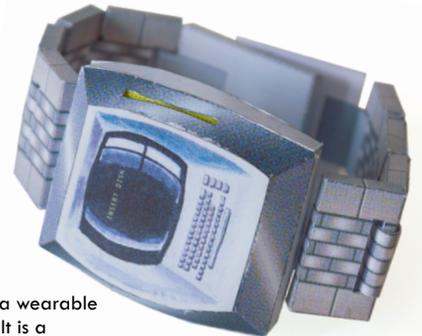
Step 9

Fold and glue together Part E. Bonus; cut out the small hole in the middle of the floppy.



Step 10

Insert disk into wristcomputer.



A Sculpture from the Near Future is a wearable paper sculpture created by Imin Yeh. It is a physical version of the wrist computer illustrated by Robert Tinney on the April 1981 cover of Byte Magazine.

Imin Yeh (www.iminyeh.info) 2021
instagram: iminyeh

The Frank-Ratchye
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