




THE
FOR
SUSTAIN-
ABILITY



When designing in today's world, we are constantly reminding ourselves that making comes at a cost: waste.

As designers, we must balance our urge to create with the disheartening current state of our climate. With every project, there is the overwhelming consideration that our process may do more harm than good, squandering materials, energy and time.

This book was created in an attempt to navigate the environmental challenge of a creator's urge to create. The solution? Creating a framework of functionality, accessibility and sustainability in everything we do.

What follows is a collection of sourced and written recipes for sustainability.

SEASONAL DYE

seasonal dye guide

sourced from
Sasha Deurr

spring

Nettle
Roses
Ivy
Mint
Cherry

summer

Marigold
Comfrey
Coreopsis
Dandelion
Elderberry

fall

Acorn
Chestnut
Black walnut
Carrot tops
Sunflower seeds

winter

Apple prunings
Blue spruce
Elm
Red cabbage
Juniper

all year

Sumac
Black beans
Oak gall
Onion skins
Birch bark
Willow stems
Rosemary

CARROT TOP DYE

Sourced from The Urban
Dyer's Almanac

First boil, then simmer for 1.5 hours with enough water to cover the carrot tops.

Strain the dye material from the plant material (compost carrots if you can).

Mordant the wool or cotton (this allows the dye to stick to it better).

Do so by placing the wool or cotton in enough water to move freely in the bath, then add aluminum for 1 hour on low heat.

Rinse fiber or textile and place in dye bath.

At this point you have the option of adding the iron, which gives the dye a darker, bluer color by changing the PH.

Simmer for 2 hrs (or soak overnight).

Let cool and rinse until water runs clear.



carrot dye ingredients

Use this basic recipe and swap out carrots for other fruits, vegetables, skins, nuts, seeds, plants, flowers, bark, compost

3 bunches of carrot tops

1 oz of wool or cotton

1 tsp of aluminum sulphate

Water

Optional: 2 g iron

Try using other additives instead of iron to change the PH and dye's color value such as cream of tartar, salt, baking soda, lemon, vinegar

mushroom Biofilm

mushroom biofilm ingredients

3 g diatomaceous earth

3 g powdered mushrooms
(dried Shiitake are the
cheapest but any dried
variety will do)

3 g agar agar

10 g borax

22 ml vegetable glycerin

15 litre translucent plastic storage box

Knife and cutting board

Electric coffee grinder/blender

Small saucepan and access to a stove

Wire whisk or spoon for stirring

Digital Scale

Adapted by
Oliver Kellhamer
from Fara Peluso

In a small saucepan or pot bring 150 ml of water to a simmer.

Add the diatomite, powdered mushrooms and agar agar, stirring rapidly.

Add glycerin and borax while stirring and bring to a boil.

Continue to stir and pour the well-mixed liquid into the plastic box tilting the box back and forth to evenly distribute the liquid across the bottom as it cools and thickens.

When liquid has cooled and thickened, set the box aside for 2 or 3 days until the biofilm has dried.

After it has dried, use a small knife to separate the biofilm from the edges of the container and peel off. The material will be quite rubbery.



mushroom



biofilm



paper making ingredients

Shredded paper scraps

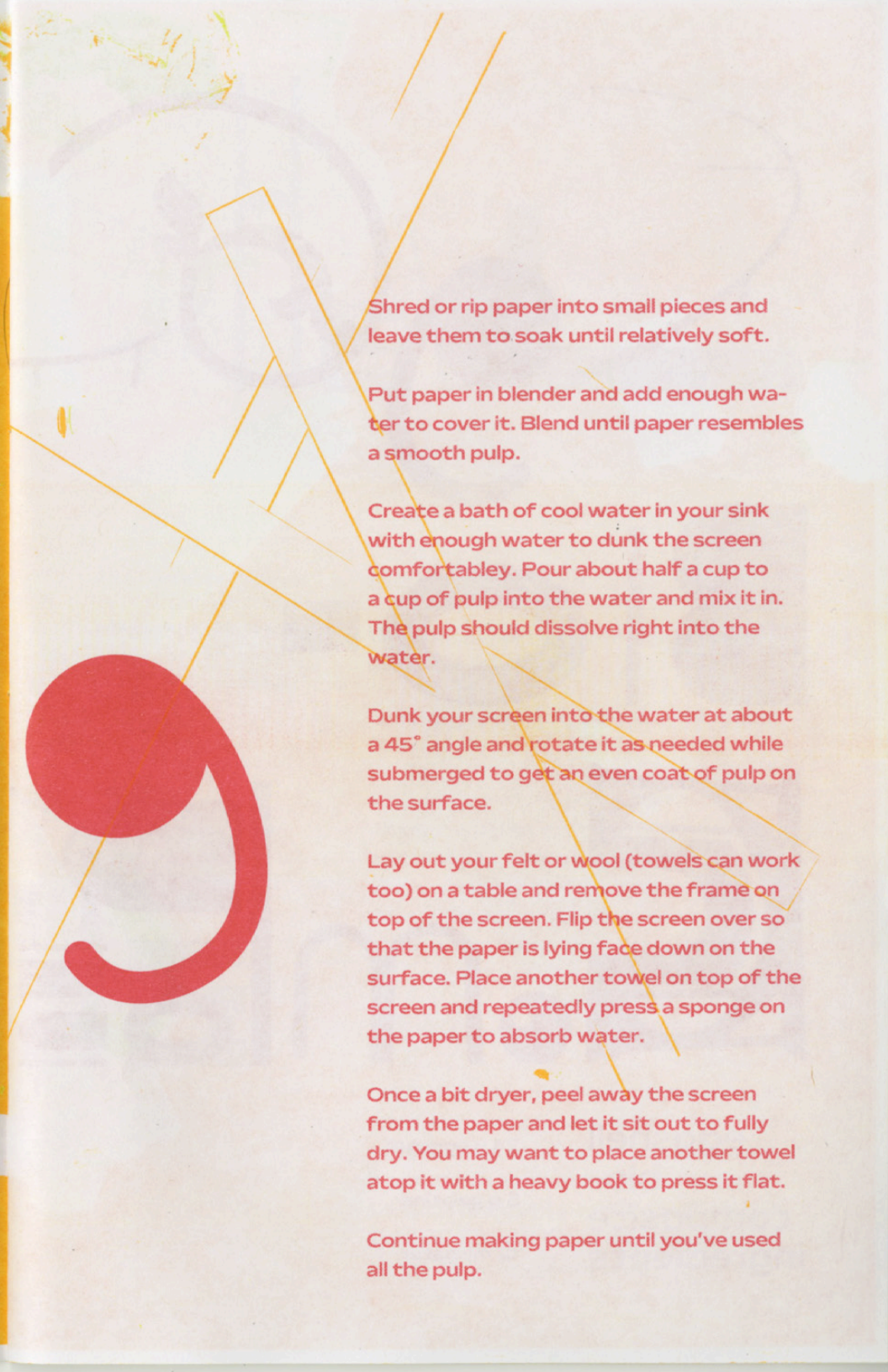
Enough water to soak paper

Fine screen (window screen works) fixed
between two open frames

Absorbant flat material (felt or wool)

Sponge

Towels



Shred or rip paper into small pieces and
leave them to soak until relatively soft.

Put paper in blender and add enough wa-
ter to cover it. Blend until paper resembles
a smooth pulp.

Create a bath of cool water in your sink
with enough water to dunk the screen
comfortably. Pour about half a cup to
a cup of pulp into the water and mix it in.
The pulp should dissolve right into the
water.

Dunk your screen into the water at about
a 45° angle and rotate it as needed while
submerged to get an even coat of pulp on
the surface.

Lay out your felt or wool (towels can work
too) on a table and remove the frame on
top of the screen. Flip the screen over so
that the paper is lying face down on the
surface. Place another towel on top of the
screen and repeatedly press a sponge on
the paper to absorb water.

Once a bit dryer, peel away the screen
from the paper and let it sit out to fully
dry. You may want to place another towel
atop it with a heavy book to press it flat.

Continue making paper until you've used
all the pulp.

Bio-Composite

eggshell
bio-
composite
ingredients

24 g eggshell

5 g gelatine

12 ml water

Recipe and image following
by Sofia Perales and
introduced by Gayoung Do

HELL

Boil eggshells to kill bacteria.

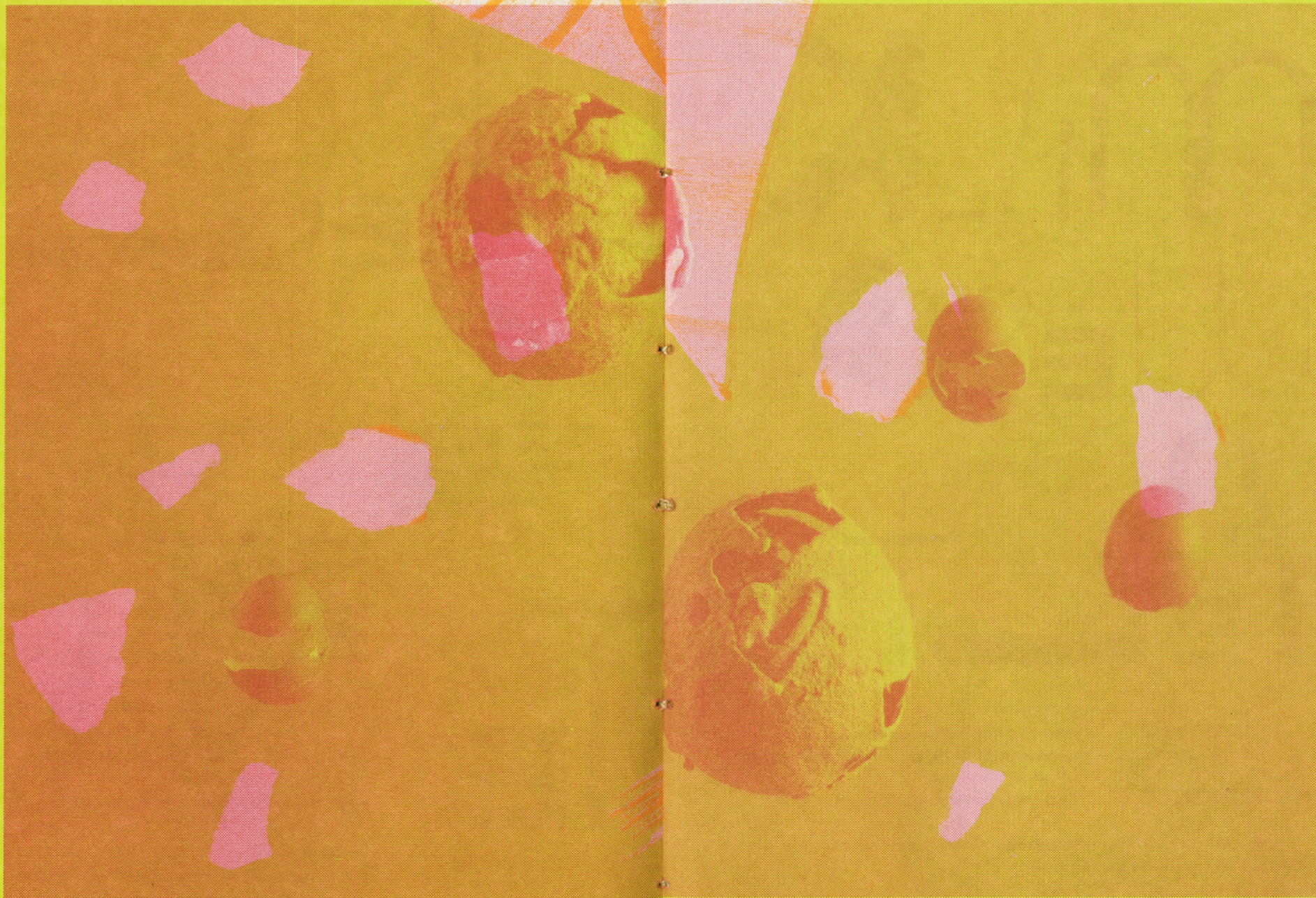
Dry eggshells (it can be naturally dried or using the oven).

Grind eggshells and sieve them to get a fine powder.

Mix water and gelatin powder in a pan. The water should be at medium high temperature. Add eggshells and mix until a slightly viscous and sandy-like paste is reached. (Note: Gelatin molecules break more easily when water is hot, so make sure to pour the eggshell before the mix is too liquid.)

Pour the eggshell mix inside any mold.

Let it dry and voilà! (Note: If you want to accelerate the process of demolding, you can put it inside a freezer and then take it out of the mold and let it dry at room temperature until a rigid piece is reached. This creates one tile of bioceramic measuring 49 cm and is dried to 1 cm thick.)



eggshell biocomposite

MILK WEED FELT

milkweed felt ingredients

Inner fluff of milkweed (seasonal to summer in the US, prior to flower's bloom)

Soapy water (in squeeze bottle is best)

Sushi rollers and rubber bands

Towel

Cheesecloth (cut into two)

Optional: wool roving for additional strength

Gather the inner fluff of the milkweed and separate the seeds. Feel free to plant the seeds as well.

Lay out a towel and place the sushi roller flat on top. Place a piece of cheesecloth on top of the roller to cover its entire surface.

Gather the milkweed and place the fluff in your palm and roll it between your hands, compacting it into a sort of ball, mimicking wool roving. Make a good amount of pieces, each about half the size of your palm.

You may add a bit of wool roving throughout at this point for a stronger felt

Place these pieces of milkweed "roving" on top of the cheese cloth, creating a layer covering the surface. Preferably, layer a second coat on top, and for extra strength, a third coat if you would like.

Place the second piece of cheesecloth on top of the roving and spray the soapy water on top, wetting the milkweed.

Roll the sushi rollers tight, with the milkweed and cheesecloth rolled within it and secure it with two to three rubber bands.

Using pressure, roll the roller back and forth across the table about forty times, then unroll it and respray the milkweed. At this point you may also add more on top for a thicker felt. Roll it back up and roll it on the table about forty more times, or until desired texture. Remove the wet felt then set out to dry.



milkweed felt

BOTTLE Joinery

Project by Micaella Pedros

Cut the top and bottom off of the plastic bottle to create a tube-like form.

Place the two pieces of wood (or experiment with other materials, such as rock) inside the plastic tube.

Using a heat gun, melt the plastic around the pieces of wood, allowing the plastic to get within the grain of the wood for strength. The two pieces are now joined.

bottle
joinery
ingredients

Disposable plastic bottle

Heat Gun

Wood



NEWSPAPER

WOOD

newspaper
wood
ingredients

Newspaper

Bio-resin

Paintbrush

Clamps

Recipe created by Mieke
Meijer through the design
studio VJJS

Gather as much newspaper as you can and
unfold each sheet.

Start by using the bio-resin as glue and
paint a layer onto a sheet of newspaper.
Attach the next sheet to the first one,
and continue to do so until you have glued
a small stack. Add a glue layer to the top.

Roll the glued newspaper into a roll, with
no apparant hole in the center (roll it with
a smaller glued stack if this is the case).
Hold in place with a clamp until dried in
position.

Once dry, continue glueing and adding
newspaper to the roll until a solid shaped
log assembles, then let dry again.

Cut the log of newspaper for a wood-
like grain to appear and experiment with
building use.

DUST GLAZE

dust glaze ingredients

Note: this recipe is highly
experimental

Domestic dust collections

Ceramics of your choice (pre firing)

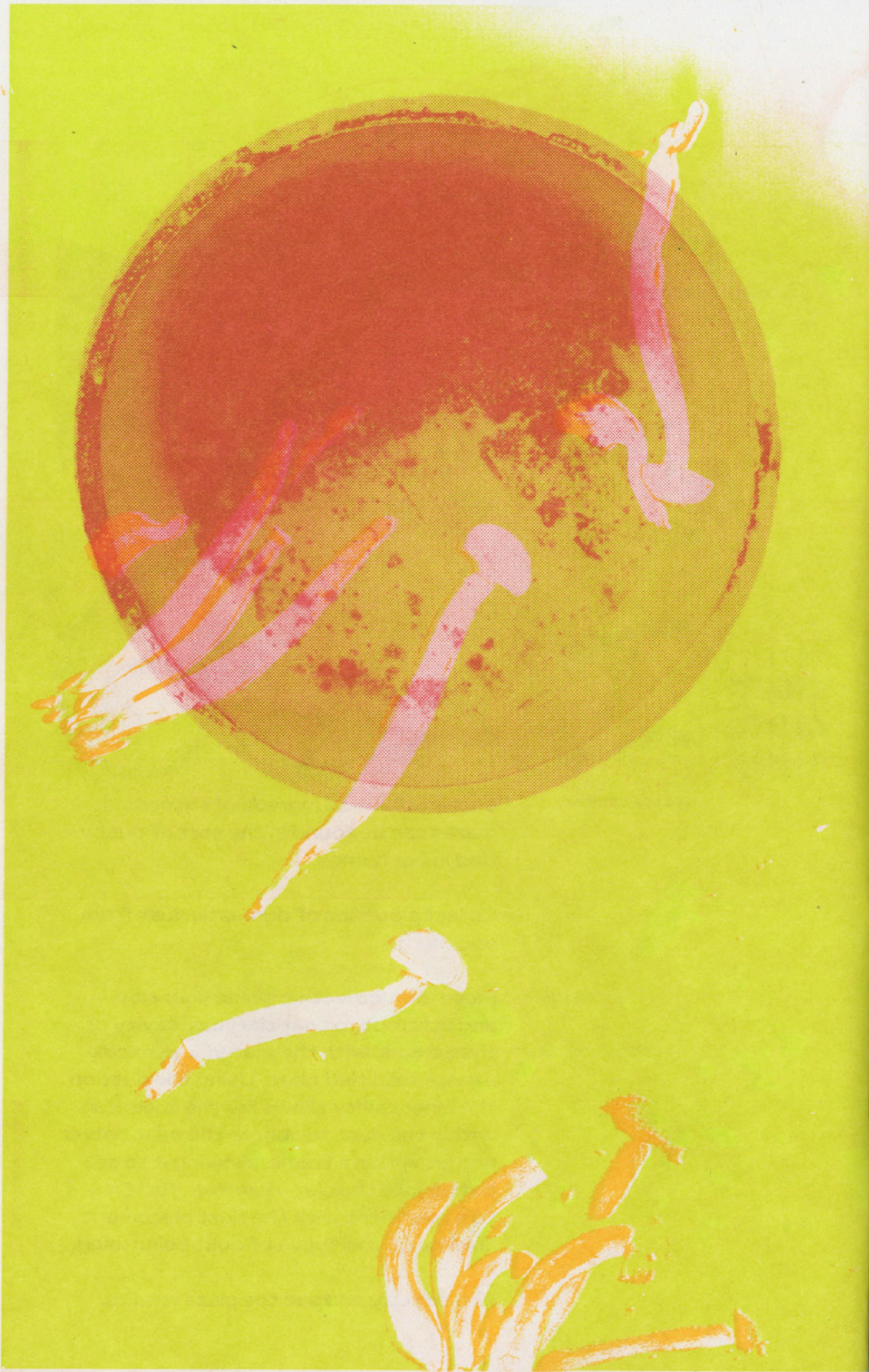
By Lucie Libotte

Certain chemical ingredients in ceramic glazes can be found in the sort of dust we find in our homes.

Collect a portion of domestic dust from your home.

Place dust collection inside your clay, and attempt to coat the inner cavity of the ceramic with the material, mimicking a more solidified glaze. Using the dust on the inner cavity allows for the chemicals within the dust to absorb the heat better and sit within a frame, allowing it to set better into the clay. However, feel free to experiment with the dust placement, thickness, and types of dust being used.

Fire the clay and see the glaze results.



dust glaze

Bio RESIN

bioresin ingredients

96 g gelatine powder

16 g glycerine

480 ml water

Large round coffee filter

Molds of your choice (airflow is essential)

Recipe sourced from
Cecilia Raspanti and
Margaret Dunne

Bring water to boil in a pot. If you would like your resin to be colored, you may add natural dye of your choice at this stage.

Add gelatin and glycerin to the pot and lower the temperature to more of a quiet simmer, keeping it 175° F or below.

Using a spoon, gently stir the ingredients to avoid forming bubbles. Lower the temperature slightly and let simmer for about 20 minutes and if bubbles appear lower the temperature slightly.

You may also experiment
with using the bioresin as a
glue-like binding material

For larger casts, let the resin cook a bit longer to evaporate more water and create a thicker substance; this will also prevent shrinkage in the mold.

If foam forms on the surface, you can gently use a coffee filter to remove it by placing it on top and scraping it off.

Turn off the heat and allow the resin to slightly cool, then pour it in your mold of choice. Let resin dry in a cool and dry spot to prevent bacteria from growing. Allow to dry for about eight hours before turning over mold. Don't remove from mold for about a week, but the final hardened form can take up to two weeks for a hard dry.

Using a mold that has removeable parts is ideal to remove parts later in the drying process to improve airflow on all sides.



indigo

This ink was used for screenprinting, but you may experiment using it for other forms of printing

Guar gum is a natural thickener that adds a gelatinous aspect to the ink, so stirring throughout is essential

For turning your natural dyes into inks, start the recipe here (you must still heat up your dye first)

Pour about 1.5 to 2 cups of water in a pot over medium low heat and add 1 tbsp of indigo pigment. You may also use dried indigo leaves and grind them into a fine powdered pigment.

Stir until the water turns the desired shade of blue at a slight simmer. For a softer blue, start by adding less pigment and for a more saturated blue, add another tbsp of indigo.

Add a little bit of guar gum at a time, starting with .5 a tbsp, stirring viscously. To check the texture, keep stirring, but reduce the heat. If the ink is too thin add more guar gum, 1 tsp at a time, however, not much more should be needed.

Allow the ink to cool, seal in a jar and stir or shake before using.



ink

indigo printing ink ingredients

2 tbsp indigo pigment (ground indigo)

1.5 cups of water

Guar gum

Pot

For more of a watercolor result, try substituting guar gum with gum arabic



yarn spinning ingredients

Wool roving or

Collected hair/fur

2 carders

Spindle

Load the first carder evenly with just enough fiber so that the teeth barely show through. Hold the loaded carder in one hand, and place it on your knee. Hold the empty carder in your other hand, and at a 45° angle, lightly brush the empty carder against the fiber, pulling away from your body. Do not press so hard that the teeth of the carders interlock, but simply brush the fiber between the two carders. Repeat until the fiber is evenly distributed between the two carders.

To remove the fiber, brush the top carder in the opposite direction against the carder on your knee, towards your body.

Next, take your pulled fiber and loop it around the hook of the spindle. It is easiest to begin spinning the fiber by securing the stick in between your legs to hold it in place. With the spindle held in place, pinch the fiber just above the hook.

With your pinched hand, pinch and pull the fiber upward away from the spindle slowly and carefully. With your free hand, do the same pinching and pulling, but using your other hand as a starting point, instead of the hook. As you do this you will begin to see the fiber pinch into yarn.

While still pinching, move your bottom hand upward to meet your top hand.

Continue this process of moving your top hand upward and having your bottom hand meet it. Repeat this until you have a long but manageable sized piece of yarn.

Keep your top hand pinched and let go of your bottom hand. Remove the carder from your secure position and let the yarn spin on its own. Spinning will help with the integrity of the yarn.

Loop the spun yarn around the shaft of the spindle.

Loop it back up to the top and re-hook the remaining yarn. There should be fluffy fiber still at the top of the yarn that can be connected to fresh fiber.

Pull apart the fibers at the top of the spun yarn and add your fresh fiber to then interlock and attach them together. Repeat the pinching, spinning and attaching process until you have your preferred amount of yarn.

Remove the spun yarn from the spindle.

This book was designed and created to be functional, accessible and sustainable.

Each book is hand bound and printed on recycled (bleached) paper, using a risograph printer: a cold printing method using soy-based ink and reusable cartridges.

There are no less than 15 and no more than 50 copies produced. Paper was wasted for this project with the intention of recycling it for later projects.

While this book does contain several sourced images, many of the images used are the various ingredients scanned and printed directly from the risograph scanning bed, never stored on a computer. All of the images sourced and stored digitally are printed using a halftone, thus using less ink in the printing process. All of the food scanned during the production was eaten following it.

Since this zine is saddle-stitch bound, the scanning of each spread was carefully and intentionally curated in consideration of that spread's content.

The book is printed in four colors: sunflower, lime light, kelly green and red.

The copy text is set in Mattone, an open source typeface. The titles are set in an untitled typeface created by the designer of the book, for this book, and is derived from found shapes and objects.

Some of the recipes are sourced, and some are written by the designer, but all require experimentation.

This book is meant to be transparent; it is not perfect. It is, however, about navigating a designer's journey in finding a sustainable and emotional balance for creating in today's world.

It can feel like everything we make creates waste; let's try to change that.

Sources



recipes for
sustainability

Organized and
designed by
zab shavrick
lizshavrick.com



THE
GIL
E
FOR
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