

1. FRAME

The frame you pick will give your boat the shape it will take. Circles, rectangles, pointed, canoe-shaped: boats come in all kinds of forms.

A boat frame's purpose is to give it the sturdiness and strength it needs to hold the hull together and travel on the water. Any material strong enough to keep its shape with a skin stretched over it will do, though hardwood, willow, reed, bone or ivory are a few traditional sources. Anything rigid enough to keep a shape and light enough not to sink will do. Copper wire, coat hangers, grapevines, used plastic, bundled grass stalks, fallen twigs, or clippings from a pruned bush are some more possibilities.

When asked what a boat frame could be made out of, one coracle maker said:

‘You needn’t be too choosy with your sticks! Driftwood was all they had.’

Imagine the boat you want to build, how it looks in your mind. What gifts are plentiful in the world around you that could become the frame of your boat? If you live by the sea you might gather driftwood on your visits to the shoreline, a number of bits of weathered and preserved wood no larger than a few fingers long and a central piece the length of your forearm, forming your boat’s main ‘backbone’. If you have some willow sticks lying around you might tie those into the frame. If you live in Berlin take a stroll in Tiergarten, and see what you find lying around that looks useful. Keep your construction intuitive, and your boat small so you can hold it with your body while working on it.

The materials you pick may need some assembly or it is possible they may already hold the shape of your frame, such as an abandoned robin’s nest. You might need to lash the pieces of your frame together with waxed linen. If your materials are pliable you could weave them into a Catalan tray. Or you might glue them. What else are you doing while piecing your frame together?

Choose a frame that makes your hands happy to work with, something you can feel, and something you can feel will eventually float. To have hope and vision in what you are making, something that gives buoyancy for carrying future possibilities. Make your boat frame from whatever is around you, in the city or country, on a mountainside or riverbank. What story do they carry?

3. BINDING

Lay your skin out flat with the inside of your boat facing up, and set your frame down on it.

How you bind your skin and frame together may depend on the type of skin and frame you have chosen. Can your skin be stitched or sewn, to fasten it to your frame? Does your skin stretch up and over your boat frame’s rim, wrapping around the edge of your boat, its gunwale? Do you prefer to use a type of glue to adhere your skin to its frame?

Stop and think about what materials you will need for your binding, whether an awl, needle and thread, a hole punch, grommets, sinew or twine, or else a polymer epoxy, wheat paste, shoe glue or resin from a spruce tree. How have you bound two objects together in the past? If you feel uncertain ask someone around you for help about how to attach your skin to your frame.

Pull your skin up tautly and wrap it all the way over the frame if you can. Depending on what it is made out of, you may wish to soak your skin thoroughly beforehand in water to make it stretchy and flexible. You may wish to use a punch or an awl to make a set of holes in the skin up where it meets the rim of the frame if you plan on stitching it together.

Imagine the first place the skin will meet the frame and begin wrapping and tensioning the skin to the frame, knowing that as you go along, the skin will become attached tighter and tighter. Feel the aliveness in the skin’s materiality, its willingness to take shape around the frame you have prepared for it. What new relationship is formed between frame and skin, and skin and frame? Most importantly, how will this skin stay buoyant once surrounded by water? How will you need to waterproof?

Now begin to sew or stick the skin to your frame, binding it in a circular fashion at multiple points around the mouth of your newly fashioned vessel, your miniature skin boat.

ACTIVITY: NAVIGATING THE ECOSYSTEM

- Look at the stars in the star map at the center of this page. These are the actual stars in the sky as they appear above you every night. Think of something so important to you that you would wish for it to be remembered even if everything else changed all around you, all the way into the beginning of a new world.

Using the star map, find an easily recognizable collection of stars that visually depicts what you hold in your thoughts, the thing you wish to be remembered. Now use a writing implement to draw lines on the star map that physically connect these stars, describing the constellation you have created.

It may feel daunting or even brazen to make up a constellation of stars. Don’t worry. Your constellation will not erase any existing constellations from the sky. Your constellation will become yet another, equally valid way of seeing the stars and patterning the sky.

Name your constellation so you may remember it.

2. SKIN

How will you wrap your skin all the way around your frame? Why does a skin need a frame to become a floating body, carrying the reflection of the stars? The answers to these questions are held in the skin you choose for your vessel.

Traditionally an animal hide is used when building a skin boat, which is ordinarily cured and then stretched and drawn over the boat frame. However, any flat and supple surface will do the trick: a scrap of leather, a swatch of fabric, canvas, paper, old clothing, a dear old t-shirt, a newspaper article or photograph, drawings of people giving each other hugs, even this very sheet of paper you hold in your hands. Many different kinds of animals have been used to make skin boats all around the world, such as bison, beeves and moocows, goats and sheep, seals and walruses.

If you know of someone who raises sheep, you may be able to get a sheepskin from them, or a fresh hide you will have to bark tan or make into rawhide before stretching it on your boat frame. Would you leave the wool on the hide or let it come off? What if, one day, while driving in the car you happen to spot a thirteen-lined ground squirrel passed away on the side of the highway as you are passing by? Would you stop to pick it up and give it new life in the shape of your miniature boat? These may seem like big tasks, but the knowledge you need to accomplish them is all around you, and you will learn a great deal along the way. Take your time while building your boat. Maybe you have all the time in the world to bring your vessel into being.

And maybe you would like to finish it before dawn breaks tomorrow. What can you use to wrap this boat quickly and offer it a unique story? A plastic bag might become a makeshift skin to encompass your skin boat, but you might find yourself asking whether you want to unleash a piece of plastic down a watercourse. You might instead decide to cut out a patch from a worn out pair of jeans.

Any skin that fits wholly around the frame you have picked and that can be made waterproof will work. What kind of skin will bring you the greatest delight when you release it onto the water?

4. WATERPROOFING

Your boat has now taken shape. It is time to get it ready to go out on the water.

What kind of material in the world repels water? And why would such a thing want to keep water out – water, which is needed by all living things for them to be alive, and flow?

The waterproofing for your boat must keep water from penetrating your boat’s skin, and must be spreadable enough to evenly and thoroughly protect your skin’s surface. Wax, resins, latex, shellac, rubber coatings and polyurethanes are items commonly used for waterproofing surfaces. What works for your skin will depend on what your skin is made of. It’s possible your skin may already be watertight, yet it’s possible you may wish to reinforce it with an extra coating.

A mixture of beeswax and linseed oil is one traditional material used to seal a skin boat’s surface against the water. Sometimes mineral spirits may be added to the mixture, forming a French finish, to help the sealant to absorb and penetrate into the skin. With some experimentation and careful study, you might find the perfect combination of beeswax or soy wax and flaxseed oil, by melting these over the stovetop and testing them out in different proportions on spare scraps of the same material your skin is made from. There may be a conifer with a cut branch or a breach in its bark with sap oozing out: will you gather this sap with a stick and mix it with melted, clarified butter, thereby creating a waterproof layer?

A nearby hardware store will also likely sell several different varieties of waterproof sealants and may help you to pick the best one for your boat skin.

What kind of salve, or balm, feels best to you for your boat’s skin, to protect it from the elements?

Once you have found and prepared your waterproof coating, apply it evenly to the entire outside surface of your miniature skin boat using a brush, or smearing it on with a gloved hand or a smooth stick. It may take a few coats to imbue the skin through and through. Let your sealant dry thoroughly before handling your boat further.

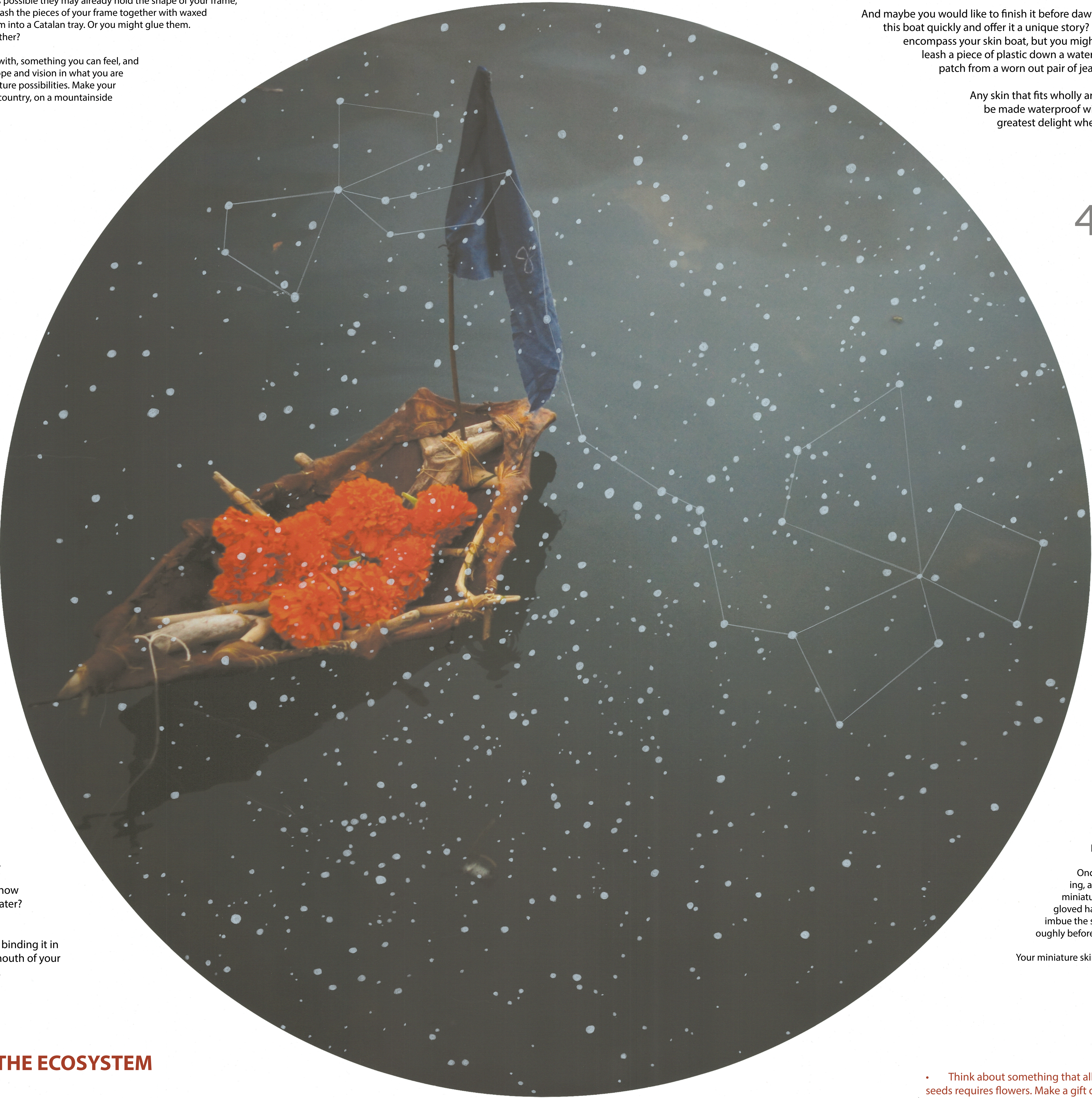
Your miniature skin boat is now ready to take to the water!

- Think about something that allows your constellation to exist. For instance, seeds requires flowers. Make a gift of this enabling thing, to be placed in your miniature skin boat alongside your story when you release it.

- On a night when your constellation is visible in the sky, go down to visit a nearby body of water. Bring your miniature skin boat with you, along with a copy of your story and the accompanying gift you have prepared for your constellation. Make an image showing the stars that form your constellation, and bring this with you, too. You may wish to waterproof some of these items so they can withstand the water once you place them in your skin boat.

Find a spot on the bank or shore where you may safely place your skin boat in the water and where it will be carried away by the current or waves. Place your story, your image and your gift inside your miniature skin boat. You may think of your boat as a time capsule except that its time is now instead of the distant future. Who will find your boat and the constellation it navigates by? What does it mean for you to set down this craft carrying your constellation into the water?

- Release your skin boat and its cargo and let it go.



- Write the story of your constellation. Make your story fabulous and exciting so people will remember it, and retell it.

Here is an example from the constellation we’ve drawn into the night sky on the star map: Stolonifera.

Once, there was a clover that grew on the edge of the riverbank, and it ran all around and spread through the soil with the help of its stoloniferous growth. It was small and it needed the help of the beasts to tramp down the taller plants and grasses that overtook it when the animals did not come to do their part. Slowly, something began to happen and the animals no longer came down to the riverside to drink. Untrampled, the tall plants grew up high, until there was no place left the clover could be found at all. One day a long time after, a young child went down to the river to play and stumbled upon a strange looking patch of clover. The child’s parents recalled the story of the stoloniferous clover. The child knew this was the clover and threw its seeds up in the sky, saving them there in a scattered formation of stars until the time when the beasts would come back to the river again to drink from its currents.

BUILD YOUR OWN MINIATURE SKIN BOAT

HVRPE-PERRO CENAKE HAYETV

XCHICHIWA MOPITENSTINBARCO IKA KUETLAXTLI

BAUEN SIE IHR EIGENES KLEINES HAUTBOOT

CONSTRUYE TU PROPIO BARCO DE CUERO EN MINIATURA

CONSTRUISEZ VOTRE MINIBATEAU EN PEAU DE BÊTE

EN English | MA Maskoke | NA Nahuatl | DE German | ES Spanish | FR French

1.

EN **Frame** – Find or make a frame (see Frame section). This will create the shape of your boat, like its skeleton.

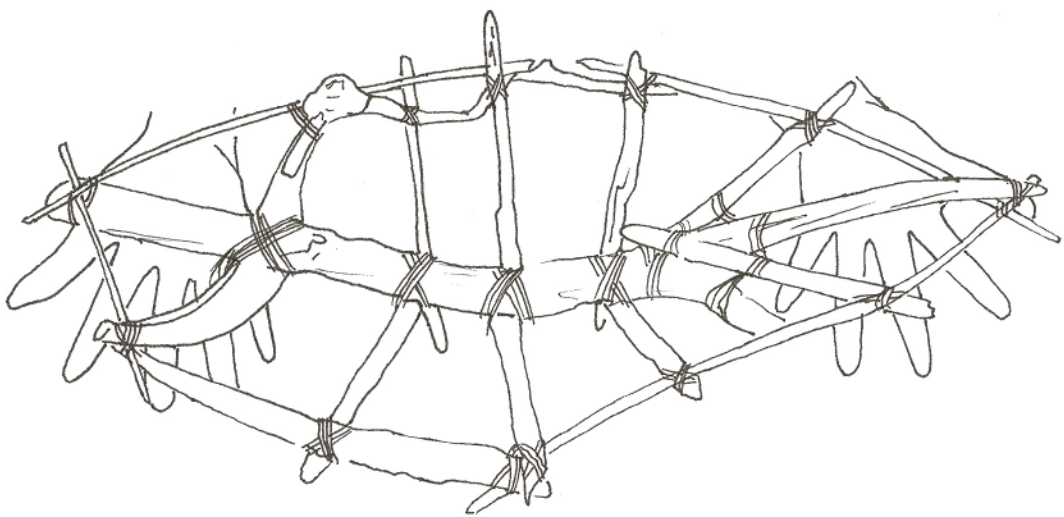
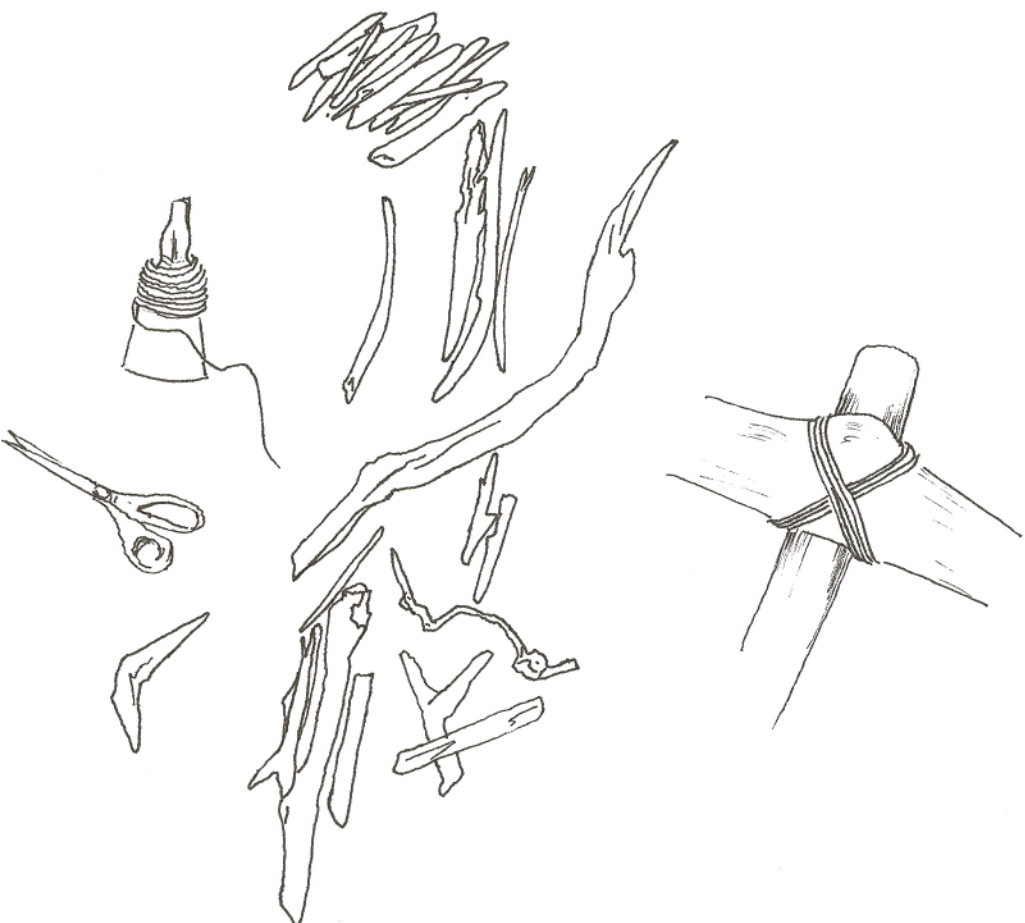
MA **Pvtakv** – pvtakv hopoyet monkat hayepeckvres (pvtakv vponickv min vketecet). Pvtakv tat perro en heckvn hayvres.

NA **Tlinon ya noyewalos** - Xsasalo akatl tlinon ya noyewalos, inin tlin ika tipewas para tikchiwas mobarco.

DE **Rahmen** – Finden oder bauen Sie einen Rahmen (siehe Abschnitt Rahmen). Dadurch wird die Form Ihres Bootes, gleich seinem Skelett, bestimmt.

ES **Armazón** – Encuentra o construye el armazón (ver apartado Armazón). Éste dará forma a tu barco, será el esqueleto.

FR **La structure** – Vous pouvez soit en trouver une déjà prête, soit la fabriquer (voir la partie « Structure »). Elle définira la forme de votre bateau, son squelette en quelque sorte.



2.

EN **Skin** – Acquire and prepare a skin (see Skin section). It must be big enough to fully wrap around the frame and cover it.

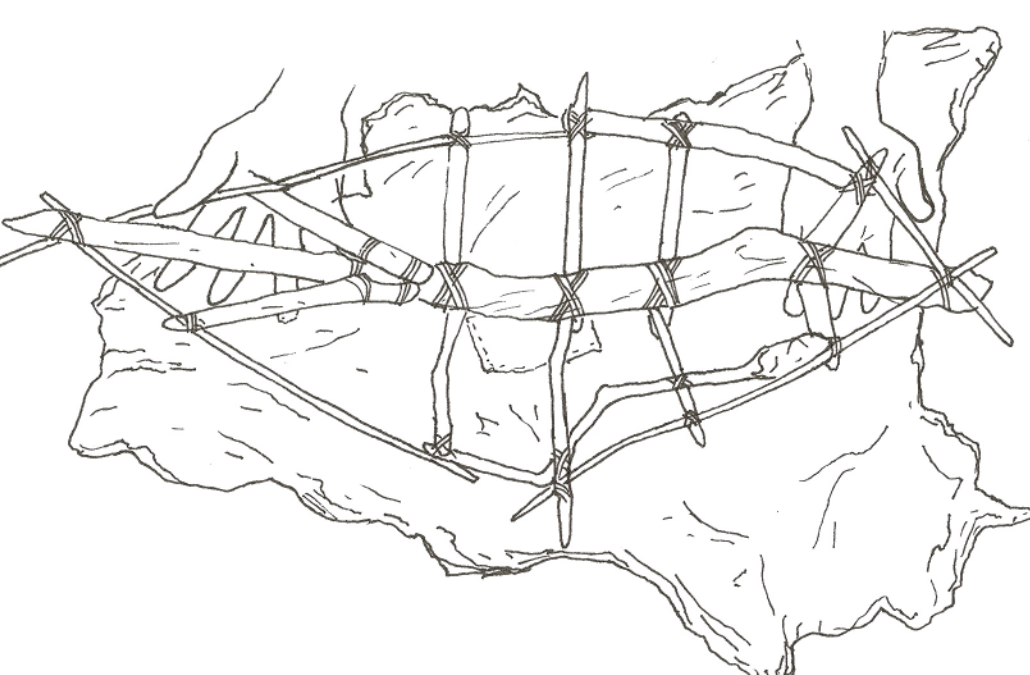
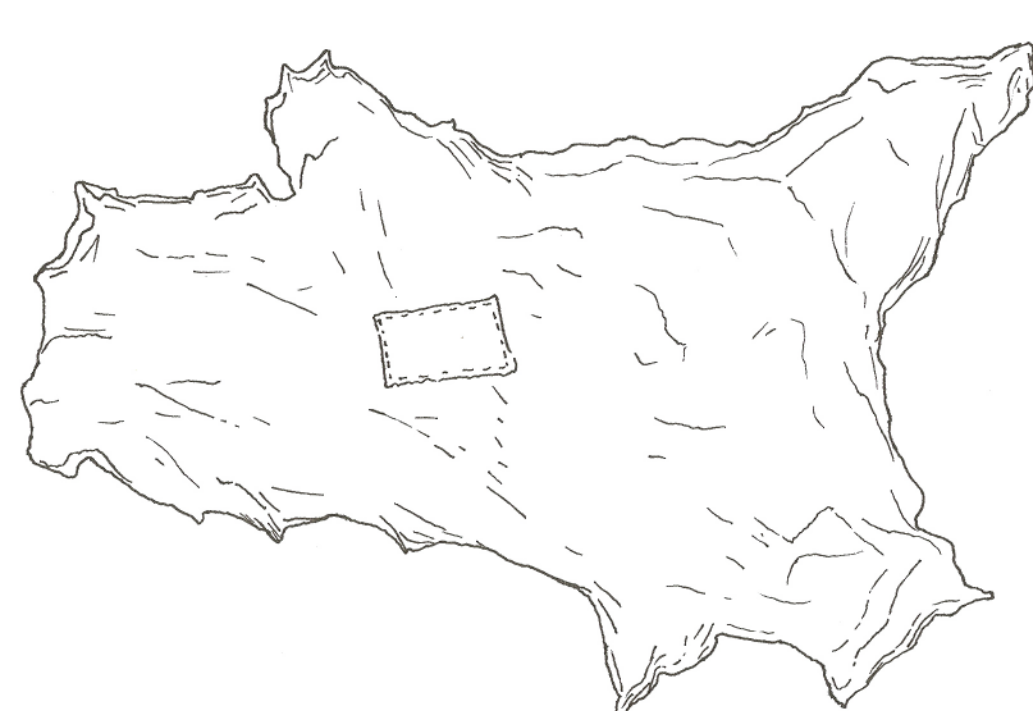
MA **Hvrpe** – hvrpe estowan eshayvhaneckat cahwet takueckvres (hvrpe vponickv min vketecet). Hvrpet en rakke perro omvkvvn svpaklvketayat oovvhanatvkles.

NA **Kwetlaxtli** – xtetemo, noso xkehchiwa on kwetlaxtli. Kipia para milak wei yes, tlinon kinamikis ika tikt-lapachos nochi mobarco.

DE **Haut** – Besorgen Sie sich eine Haut und präparieren Sie diese (siehe Abschnitt Haut). Sie muss groß genug sein, um den Rahmen vollständig zu umfassen und abzudecken.

ES **Cuero** – Consigue y prepara el cuero (ver apartado Cuero). Debe ser lo suficientemente grande como para envolver el armazón y cubrirlo.

FR **La peau** – Procurez-vous une peau de bête et préparez-la (voir la partie « Peau »). Elle doit être suffisamment grande pour envelopper et recouvrir totalement la structure.



3.

EN **Bind** – Fasten the skin to your frame (see Binding section).

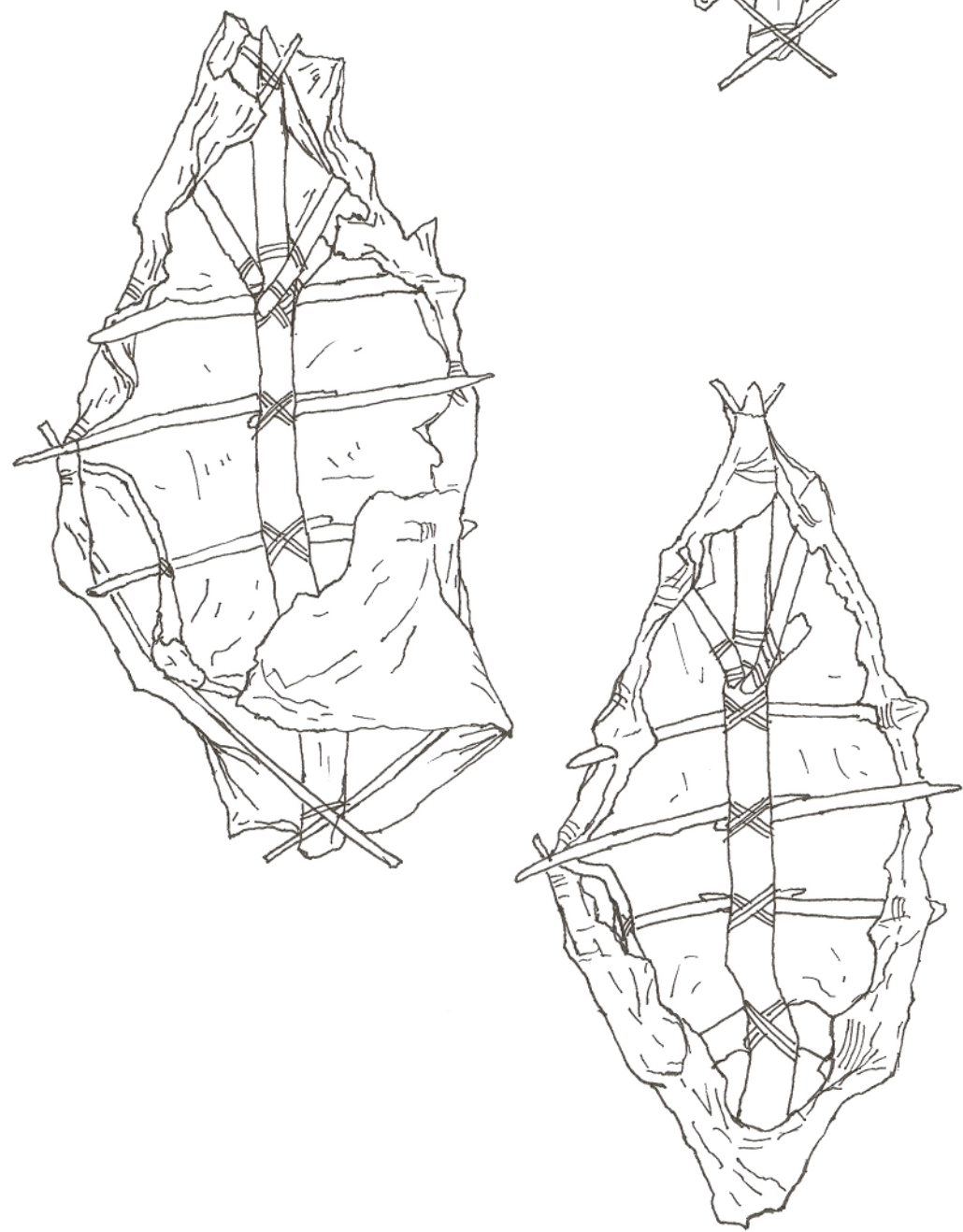
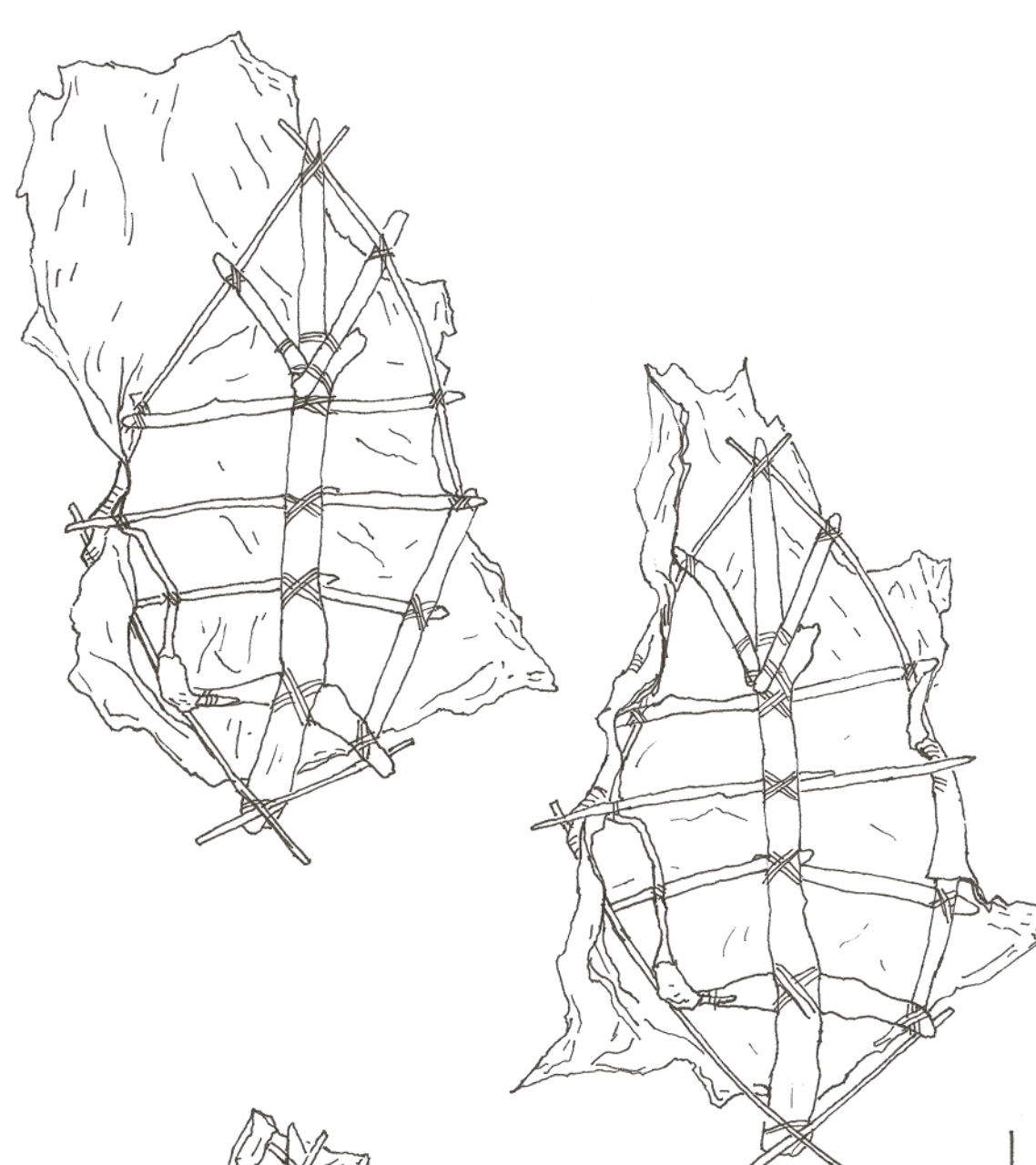
MA **Tehlvtpicetv** – hvrpen pvtakvn tehvltpiceckvres (tehvltpicickv vponickv min vketecet).

NA **Xtsalo** - xtsalo on kwetlaxtli ipan akatl tlin kiye-walowa mobarco.

DE **Binden** – Befestigen Sie die Haut an Ihrem Rahmen (siehe Abschnitt Binden).

ES **Sujetar** – Ata el cuero a tu armazón (ver apartado Sujetar).

FR **La fixation** – Fixez la peau sur la structure (voir la partie « Fixation »).



4.

EN **Waterproof** – Waterproof your boat so it will float (see Waterproofing section).

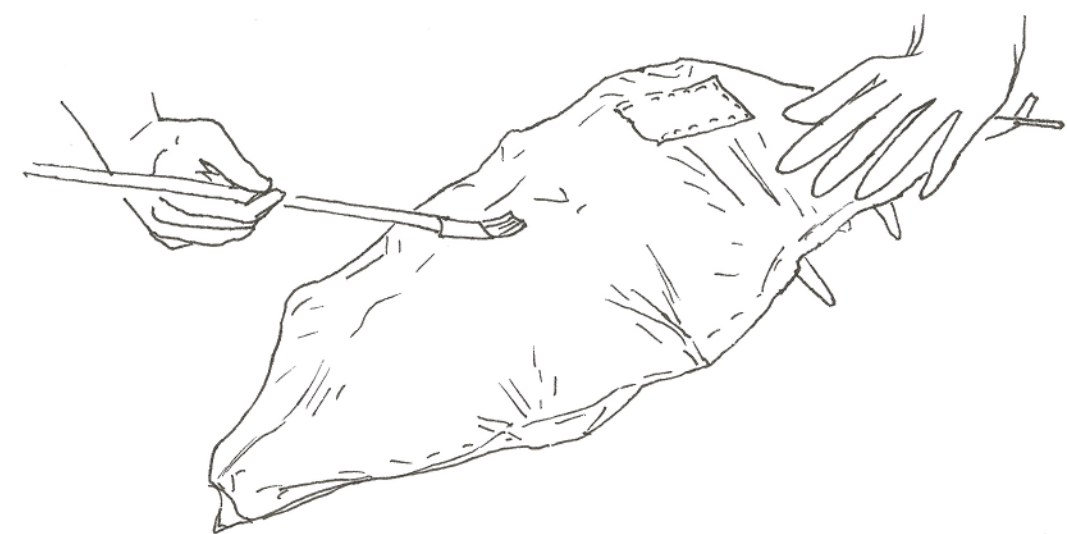
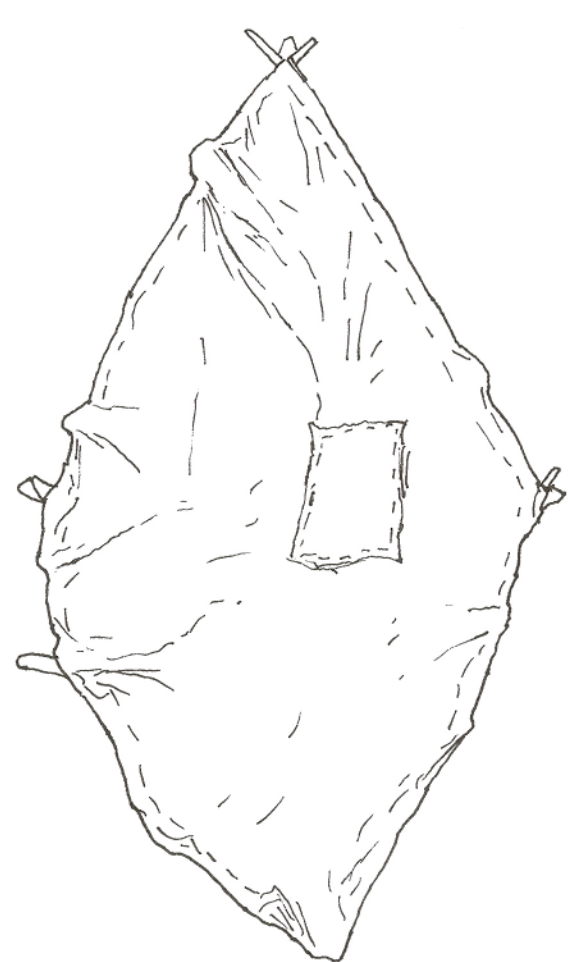
MA **Uewvn ropottekotayat** – uewvn ropottekotayat hayepet akvkotafketayat vrahkv (Uewvn ropottekotayat vponickv min heren vketecet).

NA **Maka kalkis atl** - Xiktlalili tlin kipalewis para maka kalkis atl itik mobarco, niman hkion xapolakis.

DE **Wasserdicht** – Machen Sie Ihr Boot wasserdicht, damit es schwimmen kann (siehe Abschnitt Wasserdichte).

ES **Impermeabilizar** – Impermeabiliza tu barco para que pueda flotar (ver apartado Impermeabilizar).

FR **L'étanchéification** – Étanchéifiez votre bateau pour assurer sa flottaison (voir la partie « Étanchéification »).



TAKE-HOME GUIDE FOR NAVIGATING THE ECOSYSTEM (PARTICIPATORY ECOLOGY SEED #8)

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Thank you | Mvto | Tlaxtlawli | Danke | Gracias | Merci
Thank you for carrying the language forward with your body and in your breath.

Thanks to Kira Mardikes for her computerized graphic design help.

Thank you, too, to the Salish Sea and the Great River of the Mississippi.

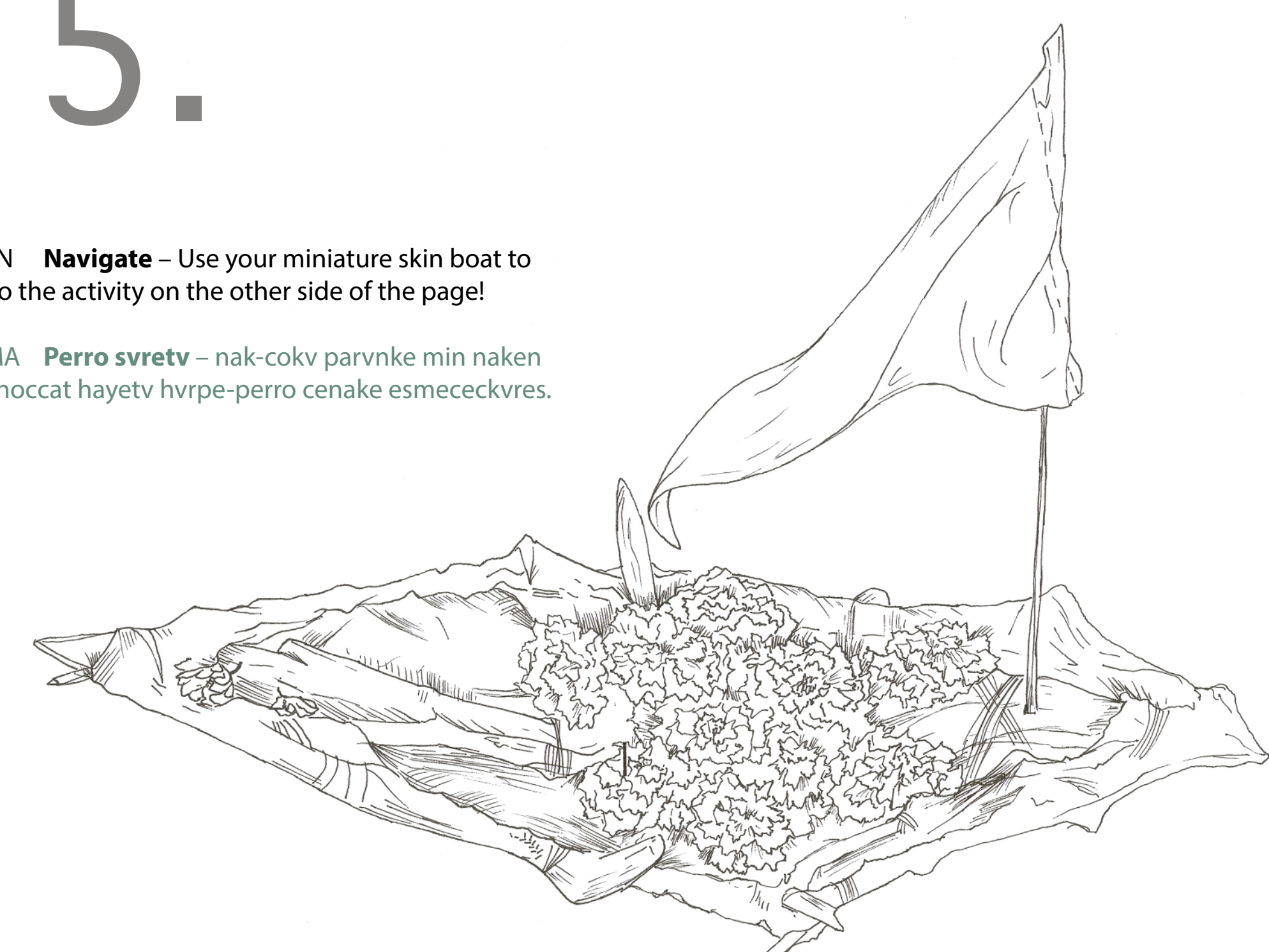
Thanks to the current and the stream.

May you find what you need around you and use it to flow onward.

5.

EN **Navigate** – Use your miniature skin boat to do the activity on the other side of the page!

MA **Perro svretv** – nak-cokv parvnke min naken vhoccat hayetv hvrpe-perro cenake esmececkvres.



NA **Panowa ipan atl** – Xkwí mopitentsinbarco para tikchiwas tlinon mistlatlaniliah ok se amatl.

DE **Navigieren** – Verwenden Sie Ihr Miniaturhautboot, um die Aktivität auf der Rückseite des Blattes auszuführen!

ES **Navega** – ¡Utiliza tu barco miniatura para realizar la actividad al otro lado de la página!

FR **La navigation** – Votre minibateau est prêt à naviguer, vous pouvez vous lancer dans l'activité

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