

# Week 2: Mirror Image

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### MATERIALS NEEDED

- -Paper
- -Pencils
- -Colored Pencils, Markers, Crayons (Optional!)
- -Visuals for class, whether drawn from this tutorial or supplemented by you or your director.

## *Special Note*

*While not technically necessary, this exercise is one that can benefit from having printed patterns that are right-and-left-hand specific. As a left hander, drawing in the missing right*

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<sup>1</sup> Both scripts are very similar to last year-most of the differences are found in the last bits, plus the exercises.

*hand of a pattern requires me to cover the pattern with my left hand, which makes things more difficult to copy! I've included right-and-left patterns, but in the case that a particular pattern runs out for a right or left-handed student during class or the week, you can always flip the pattern upside down (which will require you to draw it both upside down and matching the pattern.) and have the student and/or parent complete the pattern.*

*This will not negatively impact the exercise at all, in fact, it'll foreshadow next week's lesson!*

## Mirror Images: Streamlined Version

*[Read the quote below (pg, 12 )to start]*

*"For me, drawing generates thinking and vice versa." --Helmut Jahn, Architect.*

**Tutor:** Last week, we learned you can break any image down unto OiLS. Does anyone remember what OiLS stands for?

*[Ovals, dots, straight lines, angled lines, and curves. Put up the OiLS poster if you like at this time.]*

**Tutor:** Today, we're going to play with mirror images. Given an image that's been broken in half, you're going to draw the other half.

Why would we do this?

Well, did you know that your brain can be lazy and jump to simple solutions just to save time and move on to something more interesting? (And here you thought it was just you vs. chores/homework. It can also be you v. your brain) Your brain constructs simple patterns which scientists call "icons". (From the Greek *eikon* which means, "image".)

If I draw/show you this: *[Leaf icon, eye icon]* do you know what it is?

*<show the Leaf/Eye icon page, (pg. 13) or draw similar icons on the board>*

**Tutor:** Right, it represents a leaf and that one, an eye. These simple drawings look enough like leaves and eyes that your brain can identify them, and move on. But a real leaf, a real eye, looks a little different .

*<show the photos and line drawings based on leaves and eyes (pg 14)>*

Whether you look at the photo or drawing, we can see real leaves and eyes are more complicated than the icon patterns, even though they can look basically similar. Breaking the image forces the brain to slow down and actually *think* through what it is seeing.

Which brings us back to today's lessons: drawing the mirror image, or other half of something.

When we break a recognizable image in half, our brain has a harder time recognizing it at an icon pattern level. Because of that, you can more easily see the OiLS that make up the half-image.

And when you have to hand-draw the other half of that image, the part of our brain that wants to just make a simple icon pattern and move on has to stop and really look:

- Look at the length of the lines, relative to the lines around them.
- Look at the arc of a curve,
- Look at the angles and spaces that make up an image.

Try to look at the image as a collection of lines and angles. Don't say to yourself: "okay, I'll just draw the other half of this house, face, street, ect." Ask yourself, "how long is this line? How sharp is that angle?" Try to build your other half image line by line, or small section by small section, rather than trying to build "this thing" or "that thing."<sup>2</sup>

Above all, keep in mind **that learning anything, including drawing, is about the PROCESS and PROGRESS, not (necessarily) the PRODUCT.** Even artists have noticed that sometimes, Progress can be slower than we may want:

<show Koblin quote( pg 15)>

*"The trouble with progress is that it tends to happen slowly and quietly. It's not necessarily going to shout about itself, or make the nightly news ..."* -Aaron Koblin

Keep at it, and keep practicing. If you don't like the resulting drawing, remember Chuck Jones, and get the "bad drawings out". Even bad drawings, if you worked at them, help you draw better in the future!

## Review:

- What are OiLS and what does that word stand for? <the building blocks of all images, Ovals, dots, lines, angled lines, and curves>
- Drawing is about ...? <Process and Progress, not necessarily Product>

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<sup>2</sup> Because when you say to yourself "okay, I'll draw a roof here", your brain will try to revert to your internal "roof icon" and just draw it in quickly to be done. When you say "How long is that top line? Bottom line? What is the angle of the connecting line?" you may find the resulting roof more correctly matches your original image.

# Week 2: Mirror Image

Level: More Information

## MATERIALS NEEDED

- -Paper
- -Pencils
- -Colored Pencils, Markers, Crayons (Optional!)
- -Visuals for class, whether drawn from this tutorial or supplemented by you or your director. You will need:

## INCLUDED VISUALS:

- William the Conqueror's Tower of London, three variations
- Medieval English Crown
- Karl Linneaus (we'll meet him in the Artists Section in Cycle 2) Flowers
- A Peacock and Gryphon pattern from extant Medieval fabric, two variations
- Herbivore, Carnivore and Herbivore animal faces
- Quotes from Helmut Jahn and Sir Kenneth Clark

*[Read the quote below to start (pg 12)]*

"For me, drawing generates thinking and vice versa." --Helmut Jahn, Architect.

**Tutor:** Last week, we learned you can break any image down unto OiLS. Does anyone remember what OiLS stands for?

*[Ovals, dots, straight lines, angled lines, and curves. Put up the OiLS poster if you like at this time.]*

**Tutor:** Quick show of hands: Do your feet hurt right now?

*[This will likely surprise your class, they may or may not raise their hand, but that's okay, you weren't taking a poll. ]*

Okay, you can put your hands down. *[If any put them up]* How many of you had to stop and think about whether or not your feet hurt when I asked? Until I asked, did your feet hurt at all? Were you even aware of how your feet felt, good or bad?

Your brain takes in millions of signals every second. Every nerve in your body sends signals. Your nose is sending signals of thousands of aromas, your ears, dozens, maybe thousands of small sounds. Your eyes are adjusting to light levels as they look around, taking in things, and none of that includes your own active thoughts inside your brain.

Most of the time, your brain has to sort through the mass of signals to concentrate on the few important ones. Have you ever taken off your shoes or unbuttoned a pair of pants and discovered they were tight – but only after you took them off?

*[Might get some parents nodding at this one too!]*

It's because your brain chose to ignore the signals of discomfort until they were bad enough; your tight shoes are livable – until they give you a blister. We ignore the average smell of our surroundings unless something starts to burn or smell bad, or we smell dinner-and suddenly get hungry.

Drawing is the same way. The brain *wants* to ignore or gloss over details if you give it half a chance, just in case something else is more important around here.

Check this out: If I show you this, what do you see?

*<show the Leaf/Eye icon page, (pg 13) or draw similar icons on the board>*

**Tutor:** Right, it represents a leaf and that one, an eye. These simple drawings look enough like leaves and eyes that your brain can identify them, and move on. Scientists call these simplified patterns “icons” of objects. The word “icon” comes from the Greek word “*eikon*” meaning image. But a real leaf, a real eye, looks a little different.

*[show the photos and line drawings based on leaves and eyes(pg 14) so the students can see the icons, photographs and drawings based on photos at the same time. Whether you are holding both papers lay both papers on a communal table is up to you.]*

Our brains glossed over a lot of details to create these simple icons of eyes and leaves, which anyone, world-wide could recognize. The problem is, our default setting in our brains is frequently the simplest, fastest, route to the solution, in order to move on. These icons look close enough to the real thing so we can recognize what they represent – but they don't look realistic, and we missed a lot of details.

In fact, science students used to be formally trained in drawing in order to make records of their observations. Learning to draw had another side effect; it forced the scientist to become better observers of nature because they really had to look at the way their subject appeared in order to draw it (rather than how they assumed it appeared). Even today, with photography, drawing is still preferred by many scientists and science instructors.

Which brings us back to today's lessons: drawing the mirror image, or other half of something.

When we break a recognizable image in half, our brain has a harder time recognizing it at an icon pattern level. Because of that, you can more easily see the OiLS that make up the half-image.

And when you have to hand-draw the other half of that image, the part of our brain that wants to just make a simple icon pattern and move on has to stop and really look:

- Look at the length of the lines, relative to the lines around them.
- Look at the arc of a curve,
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Try to look at the image as a collection of lines and angles. Don't say to yourself: "okay, I'll just draw the other half of this house, face, street, ect." Ask yourself, "how long is this line? How sharp is that angle?" Try to build your other half image line by line, or small section by small section, rather than trying to build "this thing" or "that thing."<sup>3</sup>

Above all, keep in mind **that learning anything, including drawing, is about the PROCESS and PROGRESS, not the PRODUCT.** Even artists have noticed that sometimes, progress can be slower than we may want:

<show Koblin quote (pg 15)>

*"The trouble with progress is that it tends to happen slowly and quietly. It's not necessarily going to shout about itself, or make the nightly news ...-Aaron Koblin"*

Keep at it, and keep practicing. If you don't like the resulting drawing, remember Chuck Jones, and get the "bad drawings out". Even bad drawings, if you worked at them, help you draw better in the future!

## Review:

- What are OiLS and what does that word stand for? <the building blocks of all images, Ovals, dots, lines, angled lines, and curves>
- Drawing is about ...? <Process and Progress, not necessarily Product>

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<sup>3</sup> Because when you say to yourself "okay, I'll draw a roof here", your brain will try to revert to your internal "roof icon" and just draw it in quickly to be done. When you say "how long is that top line? Bottom line? What is the angle of the connecting line?" you may find the resulting roof more correctly matches your original image.

# Exercises

## Exercise #1: The History Activity, Pgs. 16-22

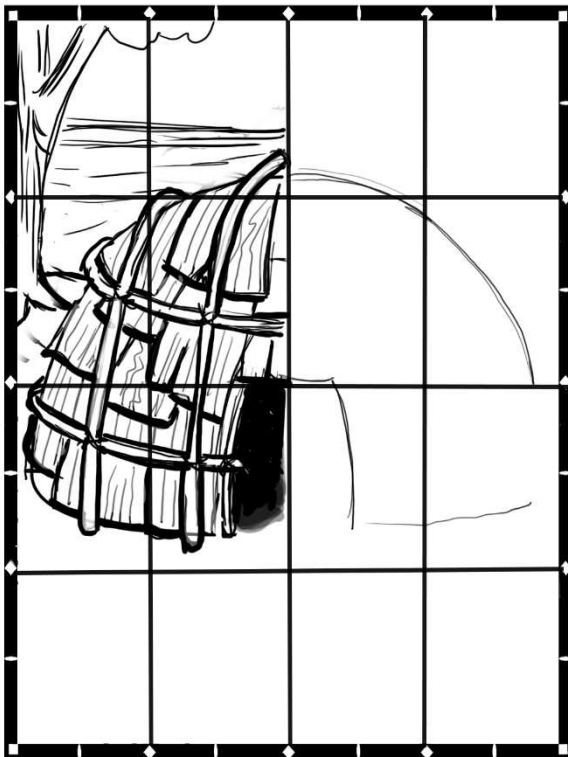
Based on this week's history sentence about the Pilgrims, there are four patterns included ( three with right and left variations):

- A simple Pilgrim's house
- A street in Plymouth
- A Wampanoag house, or "Wetu".
- Mayflower-the vertical pattern which can be rotated left or right, if desired.

All three patterns were based on photographs of the "Plimoth Plantation" museum and living history foundation.

Alternatively, you can hand out the "Mayflower", (which was based on photographs of the Mayflower II, also part of the Plimoth Plantation museum) This image can be used vertically or horizontally. The more you break the brain's ability to reduce an image to simple icon pattern, the better you will likely be able to make an accurate reflection.

### What's with the funny frame?



Some people have a hard time free-handing their first mirror images, or are quite anxious over "getting it right". If this is the case, the frame can help you "grid" an image.

You can draw a grid by matching diamonds to diamonds, football-shape to football-shape, or the corner squares to each other – or any combination. Drawing grids has been a traditional method of accurately transferring a sketch to another surface for continued work, or correctly scaling an image by hand. It will help students by giving them "measuring marks" to work with. "That curve crosses where these two grid lines almost touch...the horizon is

halfway between the top of the frame and the first grid line down..." ect.

**You can:**

- Use just the corner squares for an "X-shaped Grid" (helps to keep some things centered)
- Use just the diamonds for a large grid (shown on the wetu image, PAGE NUMBER)
- Use the football/leaf shape grid
- Any combination thereof

The more lines you draw, the harder it will be to erase the grid later, so if it's wanted, use it, but try to do a second version of the exercise free handed later.

**Exercise #2: The "Official" Art  
Mirror Image Exercise Pgs. 24-26**

Yes, "official" is in quotations because there's nothing officially official about it, but so many art books, schools, and courses use this example, (which dates back to at least the 18<sup>th</sup> century) I thought we may as well throw it in here.



*Edgar Degas, from Cycle 2, used a grid to transfer this ballerina. Many "great artists" used-and still use-grids.*

This is called the Face-Vase exercise. Look at the lines on pages 24-26 and try to copy a mirror image of it. The internal question then becomes, is this a pair of faces looking at each other, or is it a fancy vase/goblet in the middle? Being able to freely switch between seeing both is supposed to help your brain convert from seeing a "pattern image" to seeing how sections of lines and shapes that can be placed to form a larger image.<sup>4</sup>

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<sup>4</sup> Betty Edwards, New York Times Bestselling author/art teacher of the book 'Drawing on the Right Side of the Brain' talks about using the face-vase exercise to force someone to switch from using the more commonly trained and rehearsed 'L-Mode' (Logic, verbal, mathematically driven) to the less-trained R-Mode (spatial, problem solving, out-of-the-box creative driven.) In her exercise, she mentions many students have to switch between seeing both profile and vase in order to complete the exercise correctly, rather than just copying one or the other.



These exercises are simple and relatively quick compared to the others, so you can start with this and hand out exercise #1 after or, you can do a variation on what Betty Edwards talks through in her book “Drawing on the Right Side of the Brain”.

### Exercise #2A:

Ask your students (and their parents) to draw a profile on one side of their paper, leaving the other side blank (Left handers should draw on the right hand side, leaving the left-hand side blank and right handers should draw on the left-hand side, leaving the right side blank.)

Once they’ve done so, now complete the other side, to mirror the first profile.

### Exercise #3: A Mirror Game

Using two students (or a student with his or her parent) fold a piece of paper in half, and have one person draw something (a line, a shape, something simple) on one side, and hand the paper to the other person. The second person should match the first mark on the blank side, then add a second mark on their own side, then hand it back to the first person. Continue this way, practicing matching elements and lines back and forth.

You can even do this on the board with one or more students, or as a suggested activity at home for the week.

The goal in all these exercises is:

- 1.) To help the student’s brain more easily spot and break down any image into its component OiLS
- 2.) To help the student to practice proportions, visual distance and measuring.

Any of these exercises can also be used during the week!

## Additional Resources:

Drawing is a Skill, not a Talent. With training and practice, you can improve and even become skilled at drawing.

**Drawing will draw upon mathematics: proportion, scaling, symmetry, dividing (for example, evenly dividing a form so certain marks are equally spaced apart), perspective (which we will get to in week 5) and creating or replicating patterns.**

Drawing will also teach *“gestalt”*: a German word which means being able to see the whole of something AND its parts, as well as being able to perceive how that thing is not just a collection of its individual parts. Being able to see the whole, the parts, and the combinations therein, helps with problem solving in multiple fields, and drawing naturally teaches this technique.

**Many medical and science colleges at universities are either re-instituting required drawing classes as part of their curriculum, or integrating required drawing as part of the tests and note-taking. The quality of the final drawing is less important than the process of drawing a system, theory, or image under a microscope, because the process of drawing helps students learn and remember more quickly, and more deeply.**

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***“We propose that drawing improves memory by encouraging a seamless integration of semantic, visual, and motor aspects of a memory trace”***

*-Abstract from “The Drawing Effect: Evidence for Reliable and Robust Memory Benefits in Free Recall”*

*by Jeffery O. Wammes, Melissa E. Meade and Myra A. Fernandes*

*Published in Quarterly Journal of Experimental Psychology, Vol 69, Issue 9;  
16 Feb. 2016*

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In other words, drawing improves memory because it seamlessly combines language, visual concepts, and movement together, all of which encourages better memorization.

## Take home Suggestions:

### Copy Copy Copy:

Copywork is for more than handwriting! Print off photos or drawings of any item with bilateral (or radial) symmetry: butterflies, insects, human and animal faces head-on, flowers, leaves, and more. Cut them in half, and glue or tape one half on a sheet of paper, and draw the missing half in. (you can even save the unused original half for a second student or a second practice round.)

### Mirror, Mirror on the Wall...or the Pond...

We see reflections all around us, which are just mirror images. If you find a drawing you like, but it isn't symmetrical enough to draw "the other half" then pretend you're seeing it in a mirror. Place a blank sheet of paper on one side of the original image (to the left of the original image if you are left handed, to the right of the original image if you are right-handed) and copy a mirror image on a second piece of paper. Just be sure your hand will not be covering the original image while you look at it as you draw.

You can also try vertical mirror images, as though you were drawing the reflection of something caught in a pond.

### Books and More...

- Check Mona Brookes's book for more Mirror Image exercises, or Classical Conversations Connected for more exercises large and small.
- If you do not currently have access to these resources, Googling "Mirror Image Drawing Worksheets" will pull up large numbers of exercise ideas, many created by, or collected by (Pinterest, I'm looking at you...) other Classical Conversations educators.

Deliberate practice will lead to progress!

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*"I give no points for the aesthetic quality of a doodle, because the perceived skill [of the artist] has nothing to do with the quality of the learning experience for the doodler."*

-Sunni Brown  
Author of "The Doodle Revolution"

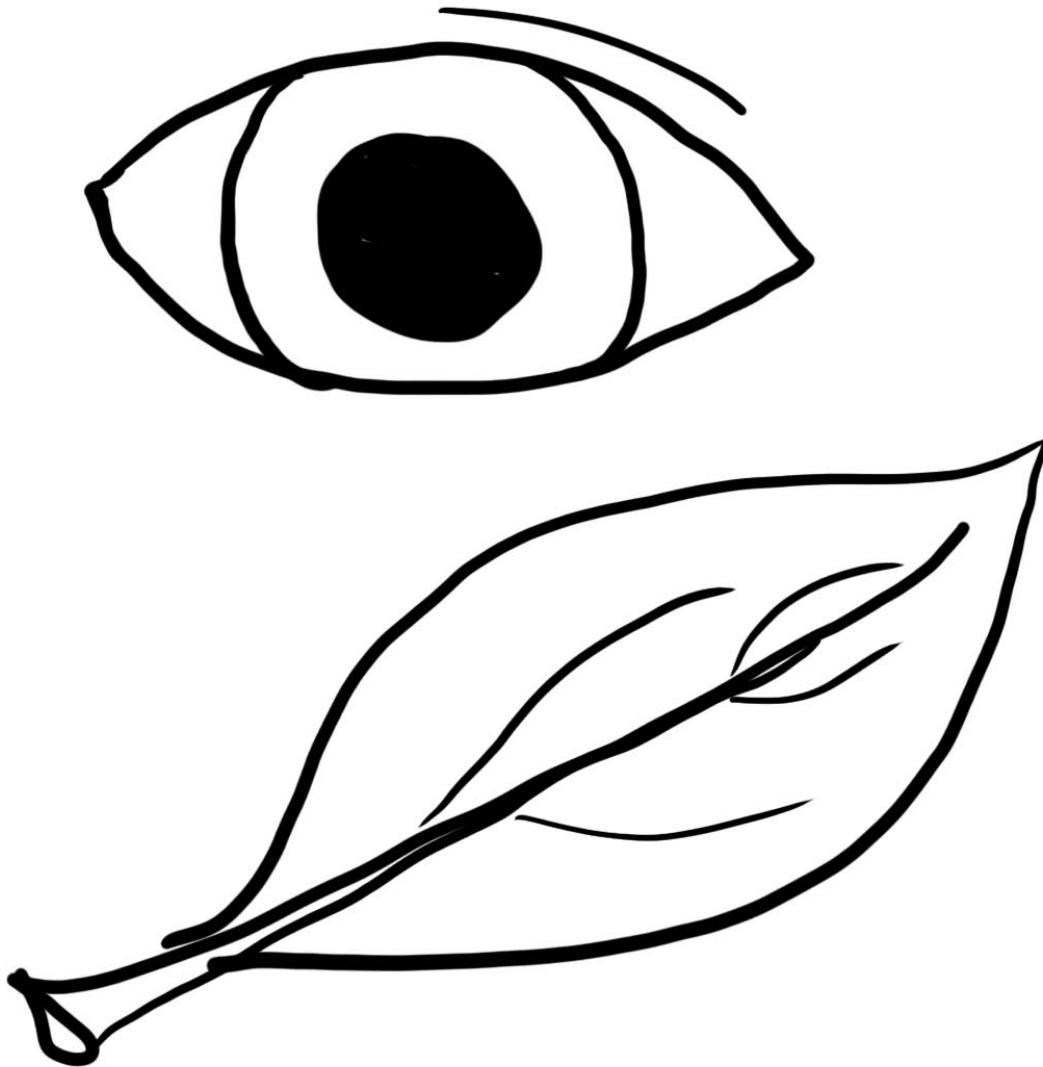
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**For me, drawing generates  
thinking and vice versa.**

**-Helmut Jahn, Architect**



Icon Patterns

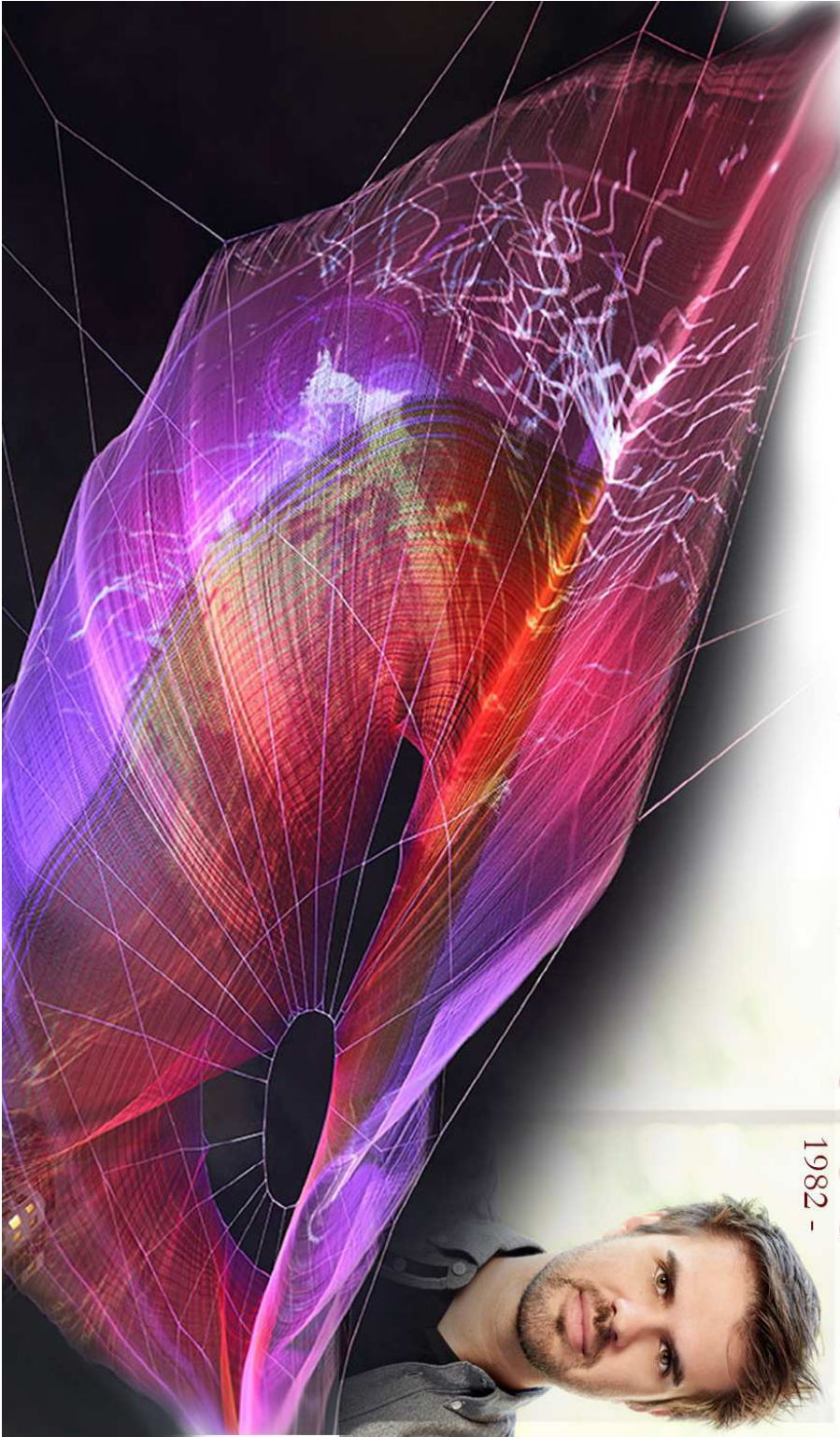


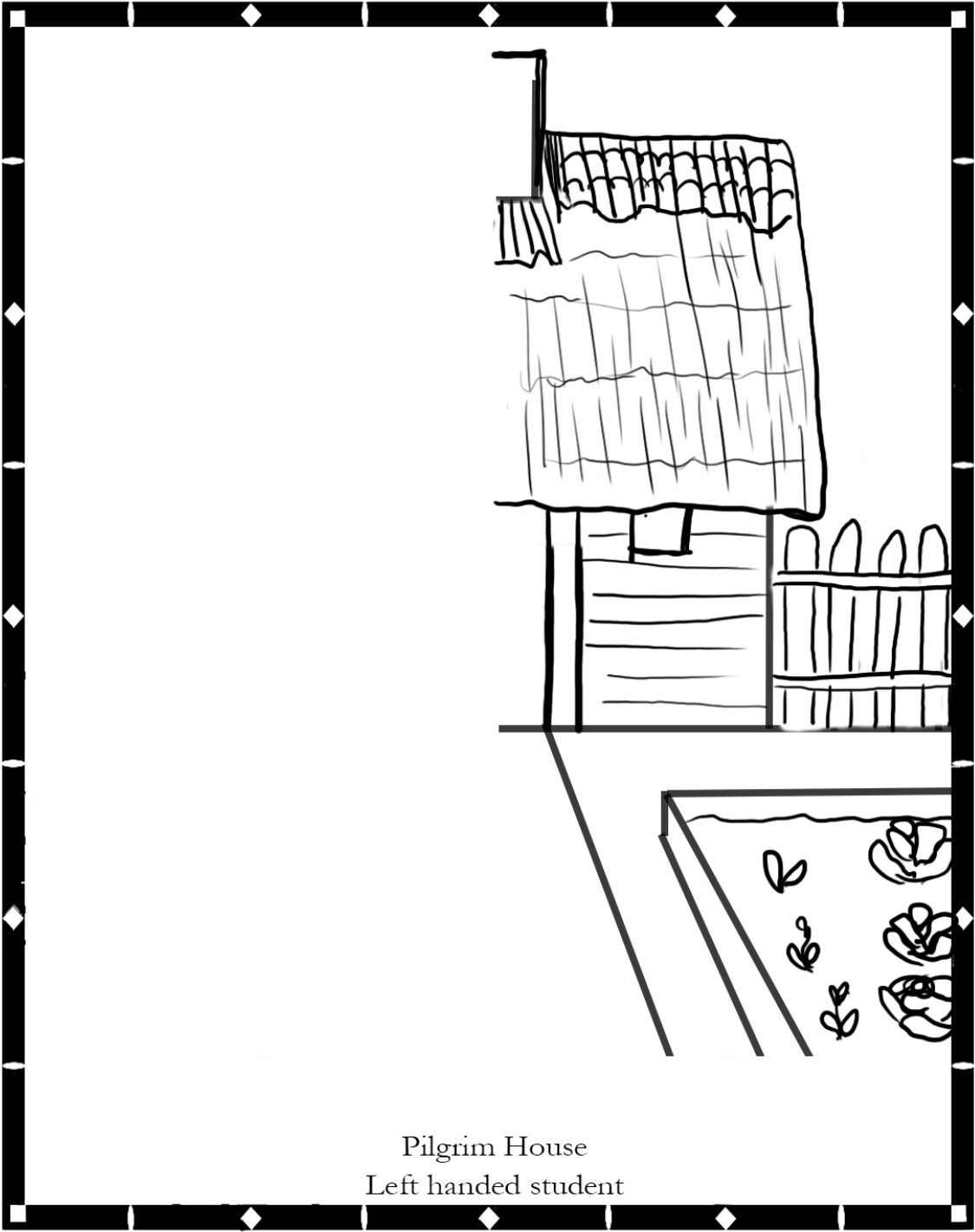


**“The trouble with progress is that it tends to happen slowly and quietly. It's not necessarily going to shout about itself, or make the nightly news ...”**

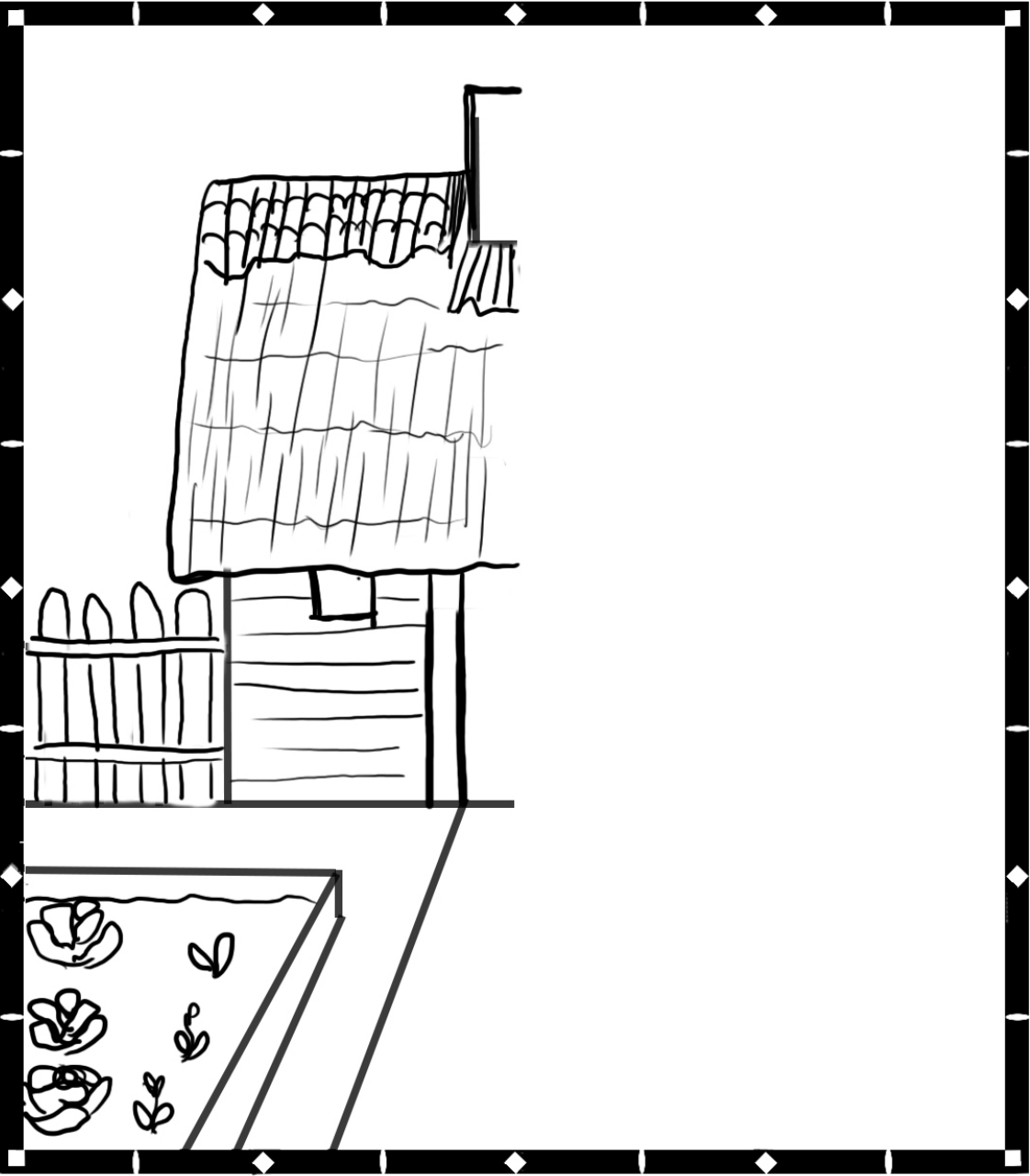
**-Aaron Koblin,**  
American artist, entrepreneur, and computer programmer

1982 -





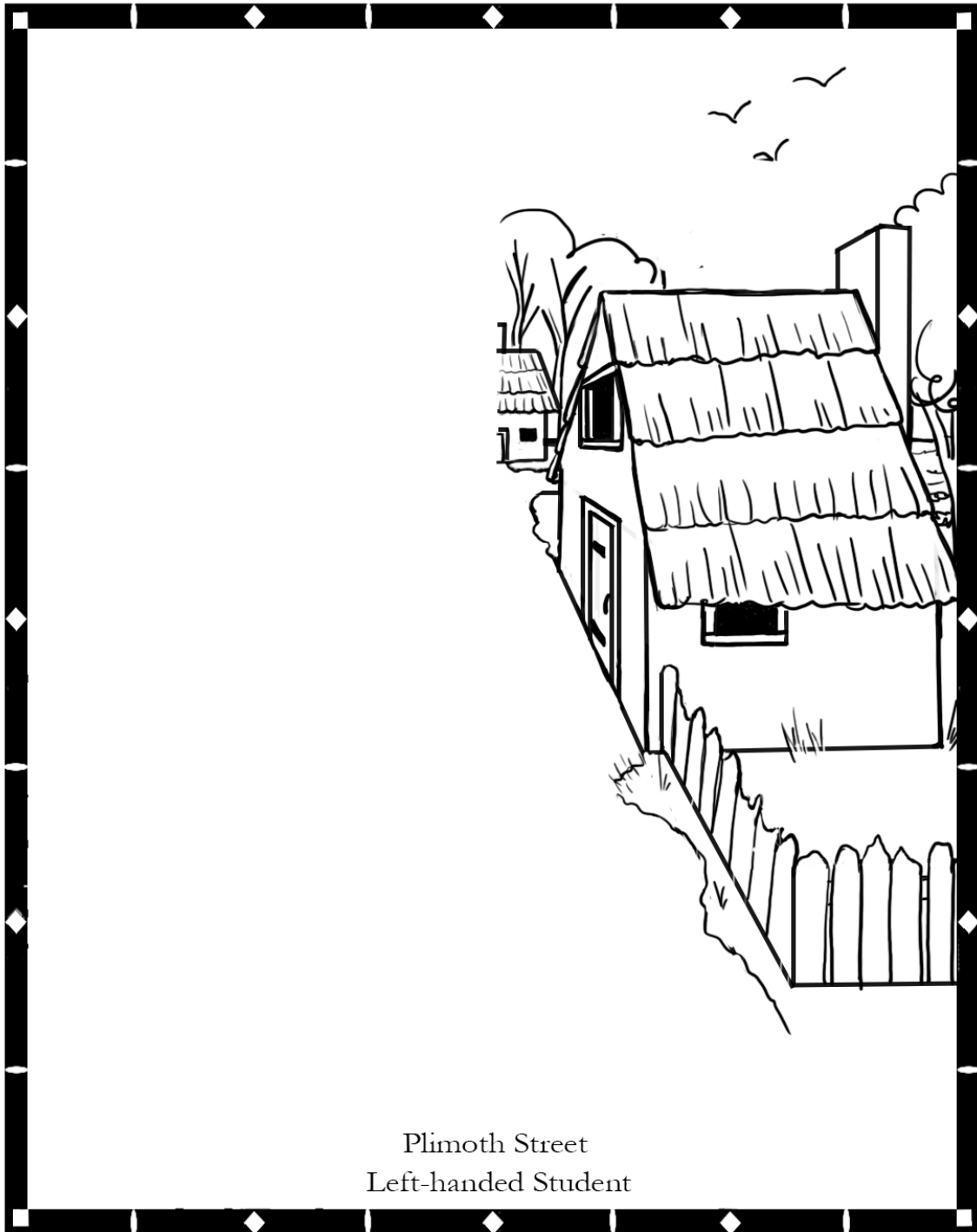


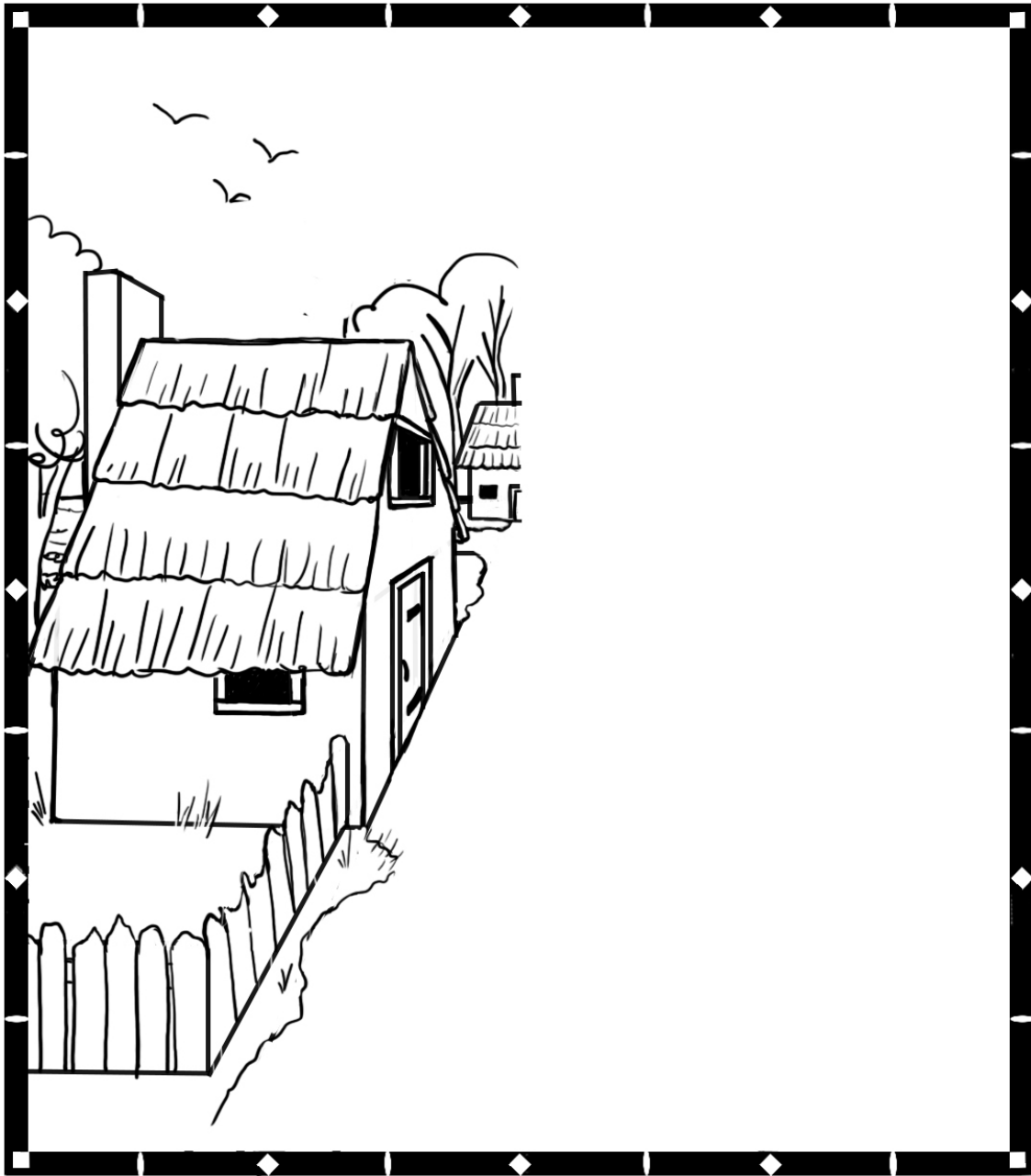




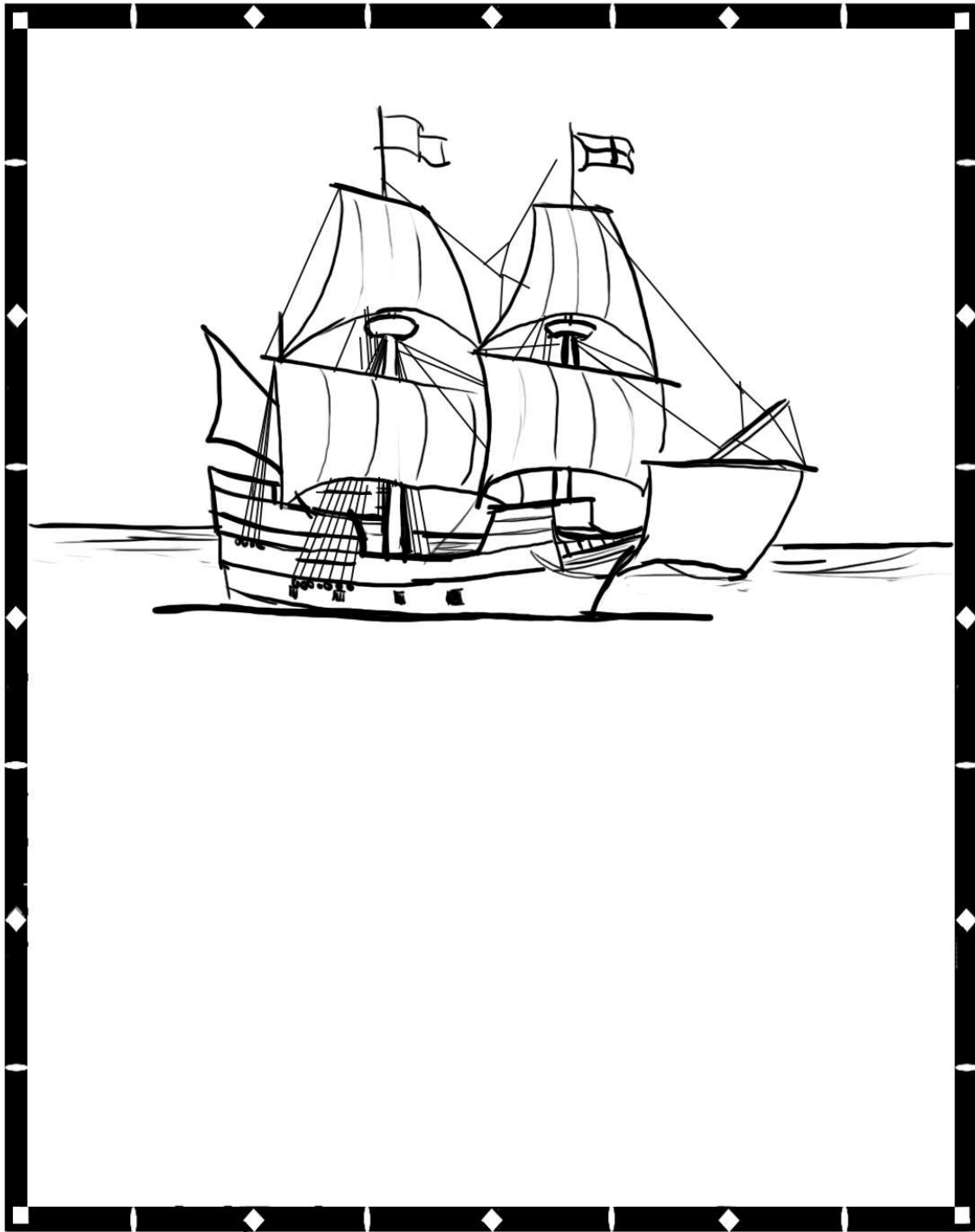


A Wampanoag house, or wetu.

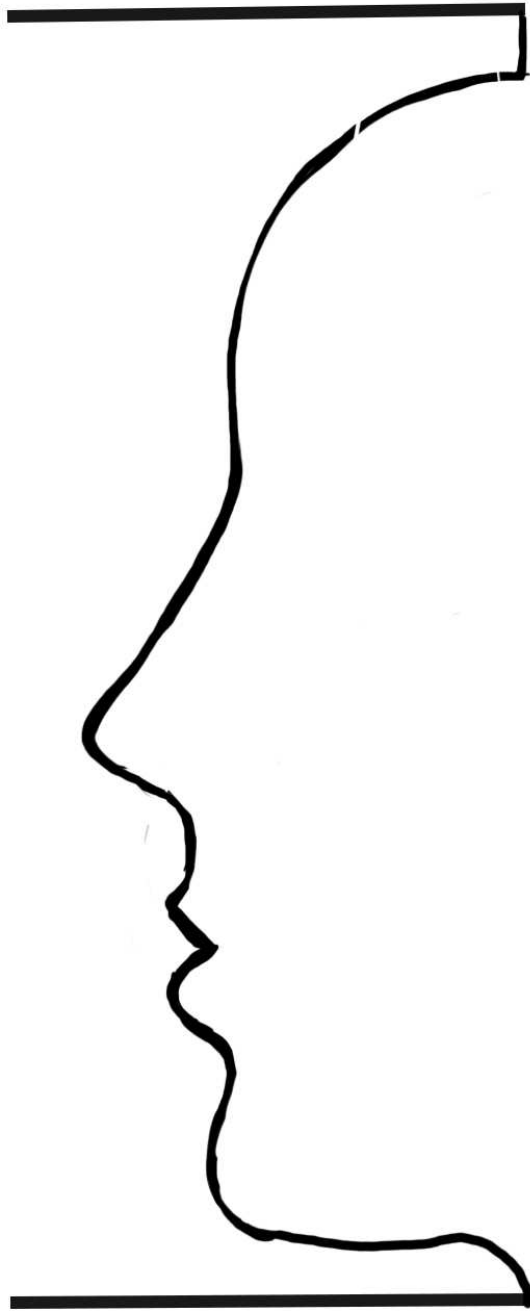




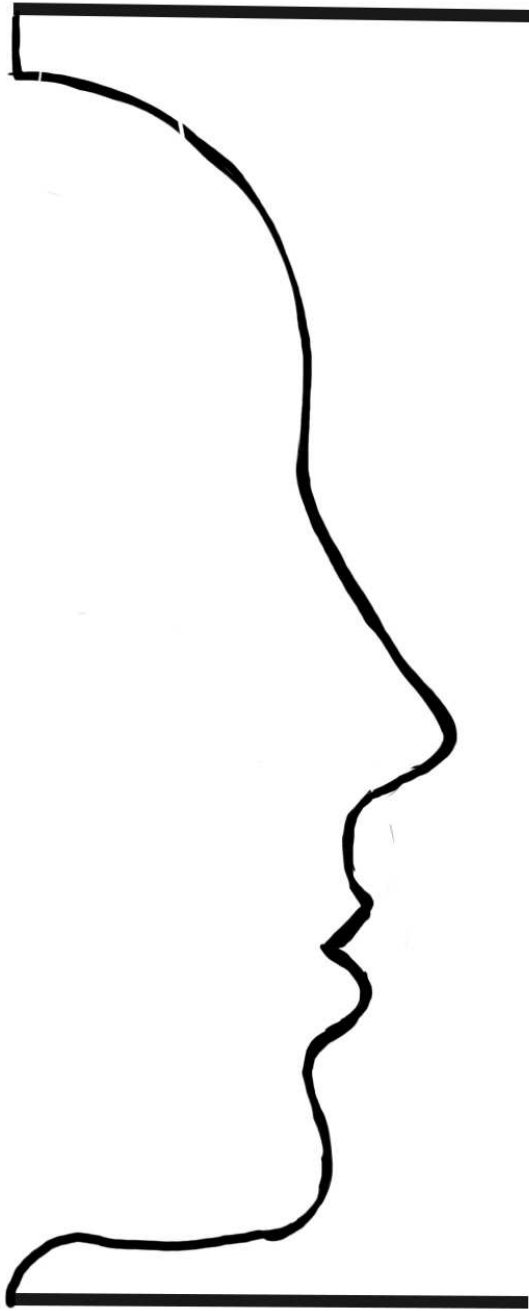
The Plymouth settlement, based on photos from Plimoth  
Plantation



The Mayflower

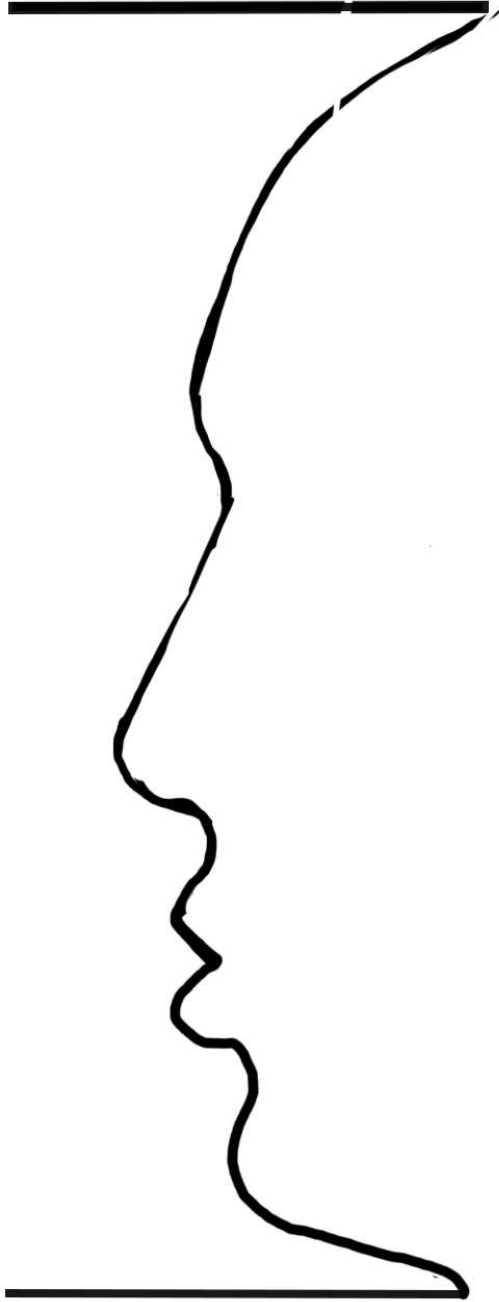


Face-Vase #1 for left-handed draftsmen

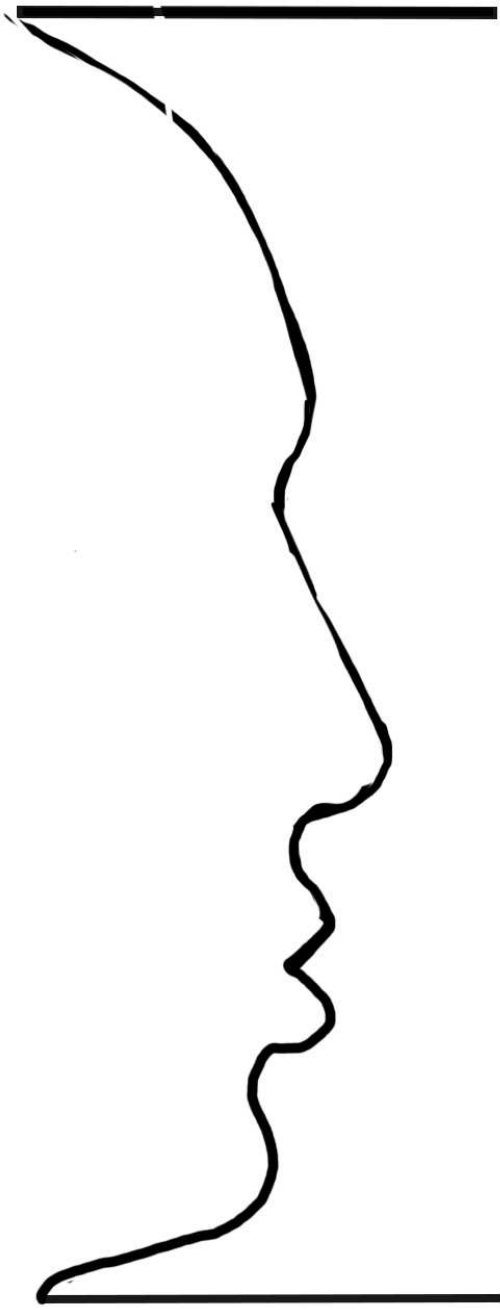


Face-Vase #1 for right-handed draftsmen





Face-Vase #2 for left handed draftsmen



Face-Vase #2 for right handed draftsmen