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Around 15 million Americans have severe allergies. The severity of an allergic reaction is often unpredictable; it can be mild one time and life threatening the next. In an effort to enable a faster assessment of an allergy sufferer’s condition and needs it is important for aid providers to understand what may have triggered the allergic reaction. The most common allergy triggers include a range of foods as well as bee stings:

- PEANUT
- WHEAT
- DAIRY
- TREE NUTS
- EGG
- FISH
- SOYBEAN
- SHELLFISH
- BEE STING

This book is a guide through the research, ideation, iteration, development, and final application phases of my allergen icon study. My overarching goal throughout the project was to create a cohesive family of nine icons, clearly representing the allergens listed above. Let’s get started!



PEANUT - oval seed grows in a pod underground, can be roasted/salted, made into oil, baked in recipes, and pureed into spreads.



TREE NUTS - nuts that grow on trees. This includes cashew, pistachio, walnut, almond, Macadamia, and other nuts.



SOY - a legume native to East Asia, commonly used substance in oils and recipes, can be used as a replacement for animal protein.



WHEAT - a “cereal plant,” an annual plant that produces grain, often ground to make flour for a variety of breads, pastas, and pastries.



EGG - an oval-shaped object laid by a female bird which contains the developing embryo, often from chickens.



SHELLFISH - divided into two groups, crustaceans and mollusks. Common shellfish are shrimp, lobster, crab, and oysters.



DAIRY - made with milk; also known as a “milk allergy.” Milk is an emulsion of fat and protein in water, and includes dissolved sugar, minerals & vitamins.



FISH - cold-blooded, water-living vertebrates with scales and gills.



BEE STING - caused when a bee inserts its stinger into the skin of a person or animal in self-defense.

As preliminary research, I collected imagery and created referents for each allergen. These focused me on key information necessary for me to understand and later convey in my icons. (above)
I gave out “draw-it” surveys to discover what images come to mind when individuals are prompted with these allergens + referents. (right)

	(USER) A	B	C	D	E	F
PEANUT						
WHEAT						
DAIRY						
TREE NUT						
EGG						
FISH						
SOY						
SHELLFISH						
BEE STING						

STUDY

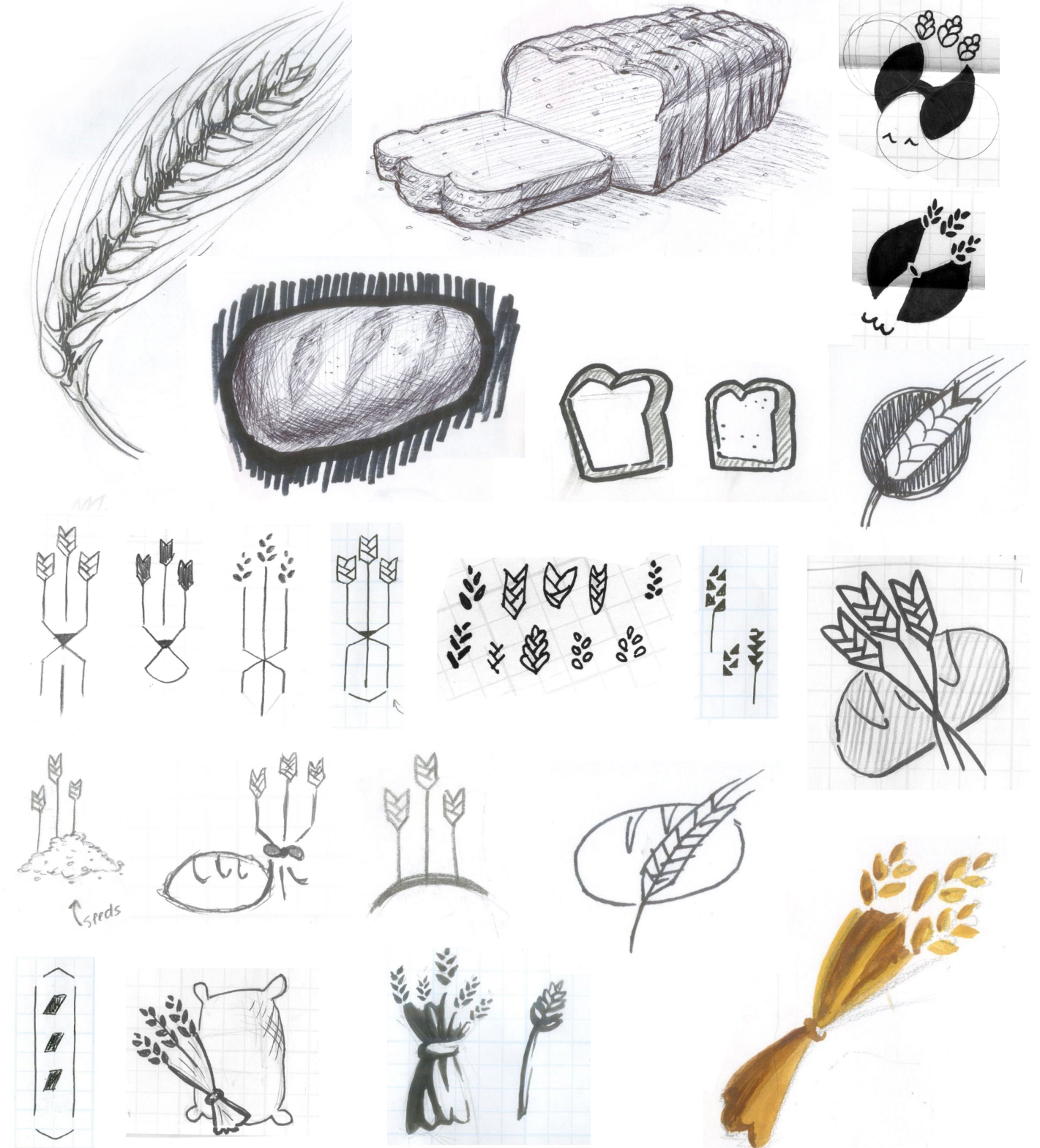
PEANUT

I went **nuts** exploring the peanut's unique texture and round shape. I explored various levels of abstraction, realism, and ways to display the inner nut.



WHEAT

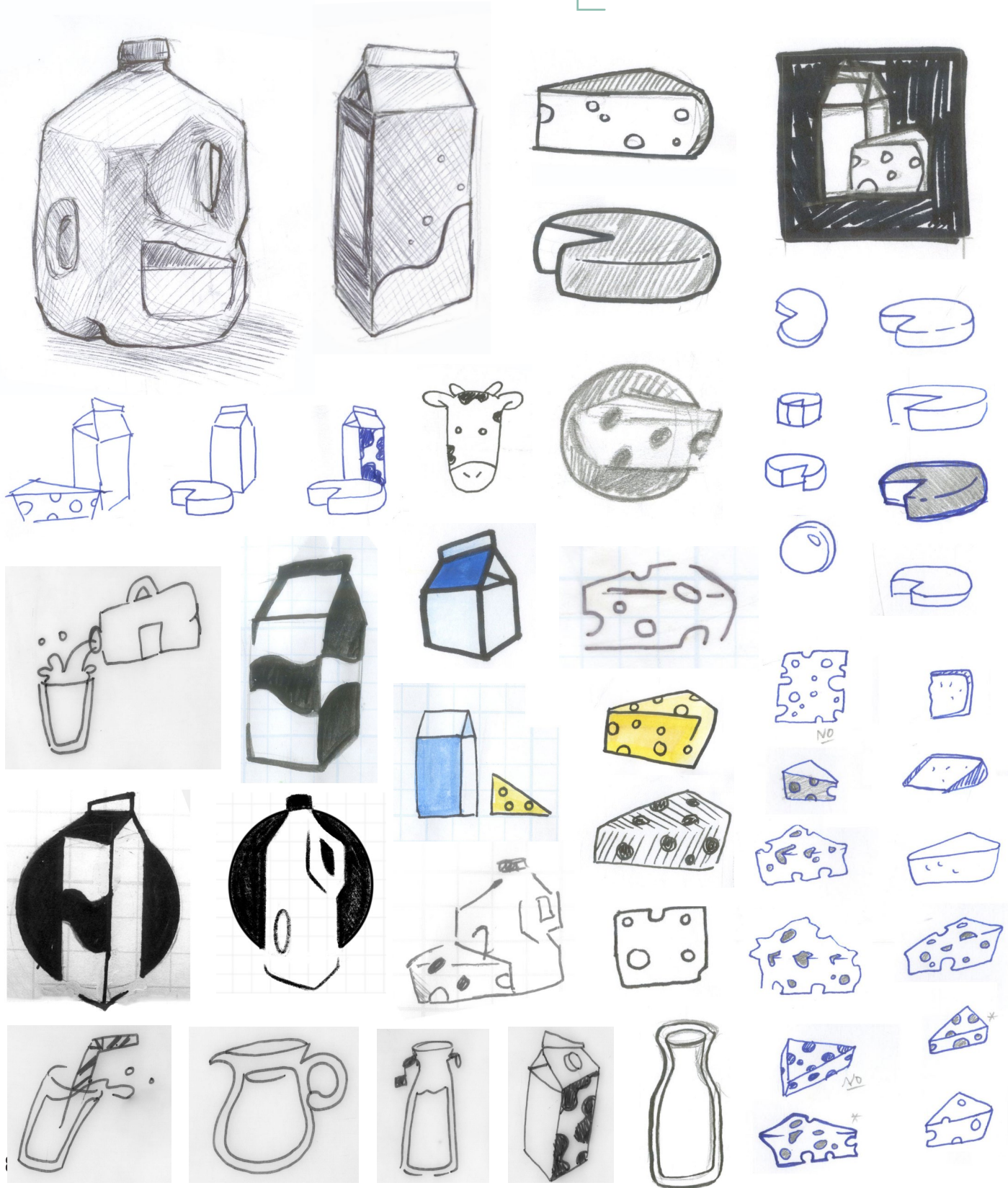
What is the most common + recognizable way to display wheat: a single strand? a bundle? a loaf of bread? Would it still be identifiable if I bring a geometric form language into the mix?



STUDY

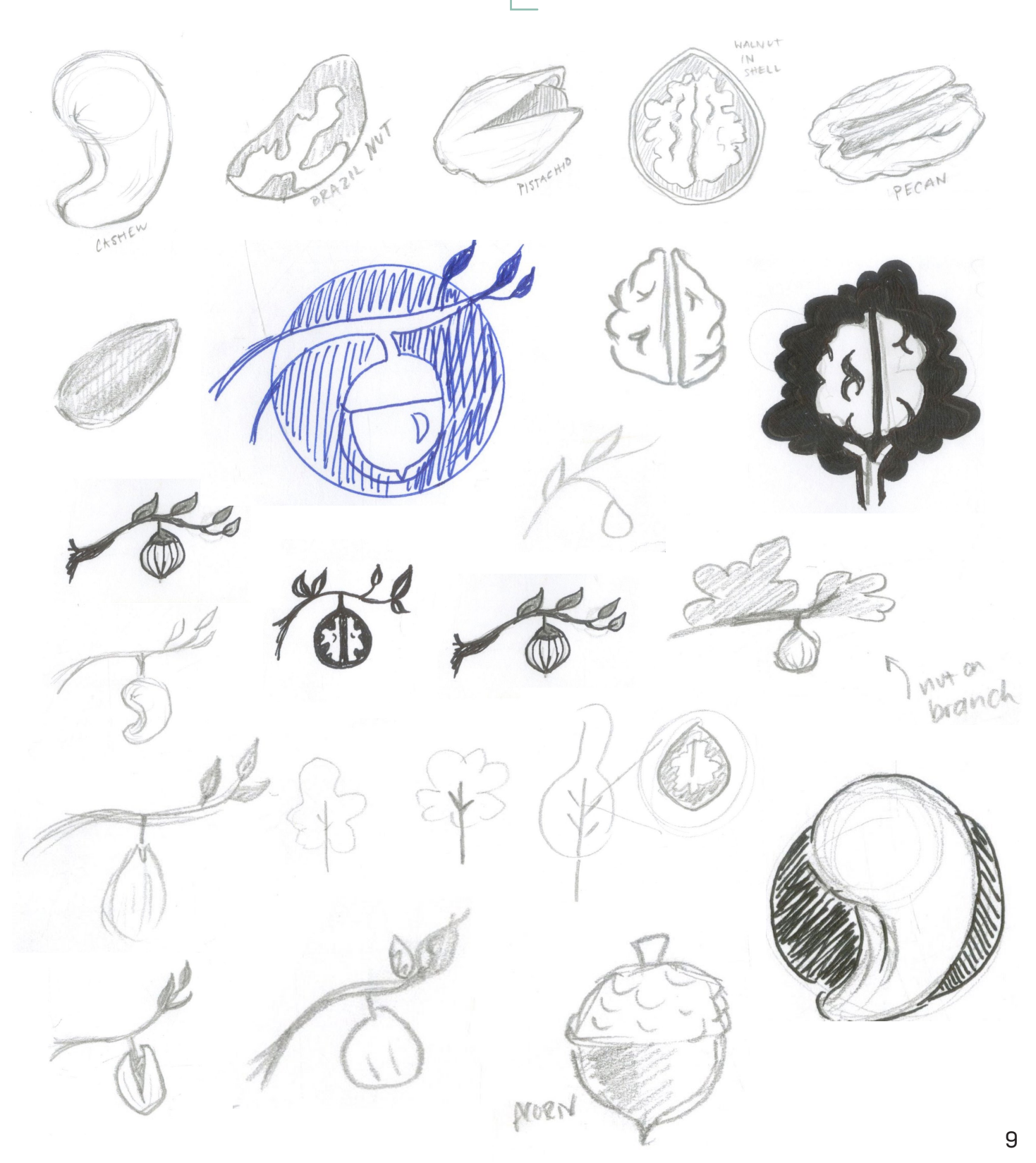
DAIRY

Holy cow, there are so many possibilities to explore with dairy! The varieties of cheese (wedge, wheel, slice) and milk (jug, carton, glass, pitcher) brought so many iterations.



TREE NUT

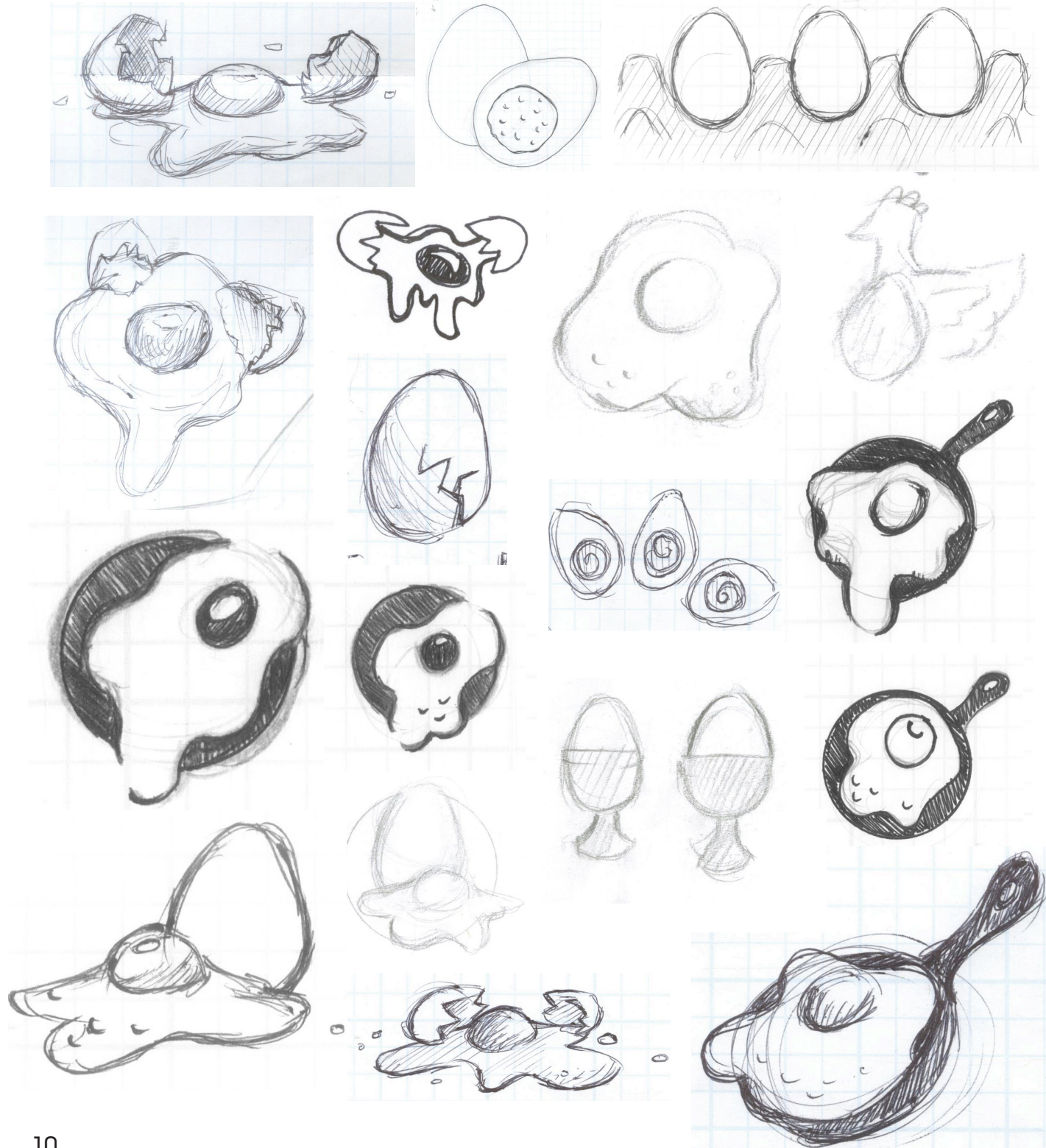
Similarly, the assortment of possible tree nuts to choose from led me to sketch a variety of nuts. And what is the clearest way to illustrate the "tree" aspect of the nut? a branch? a full tree? leaves?



STUDY

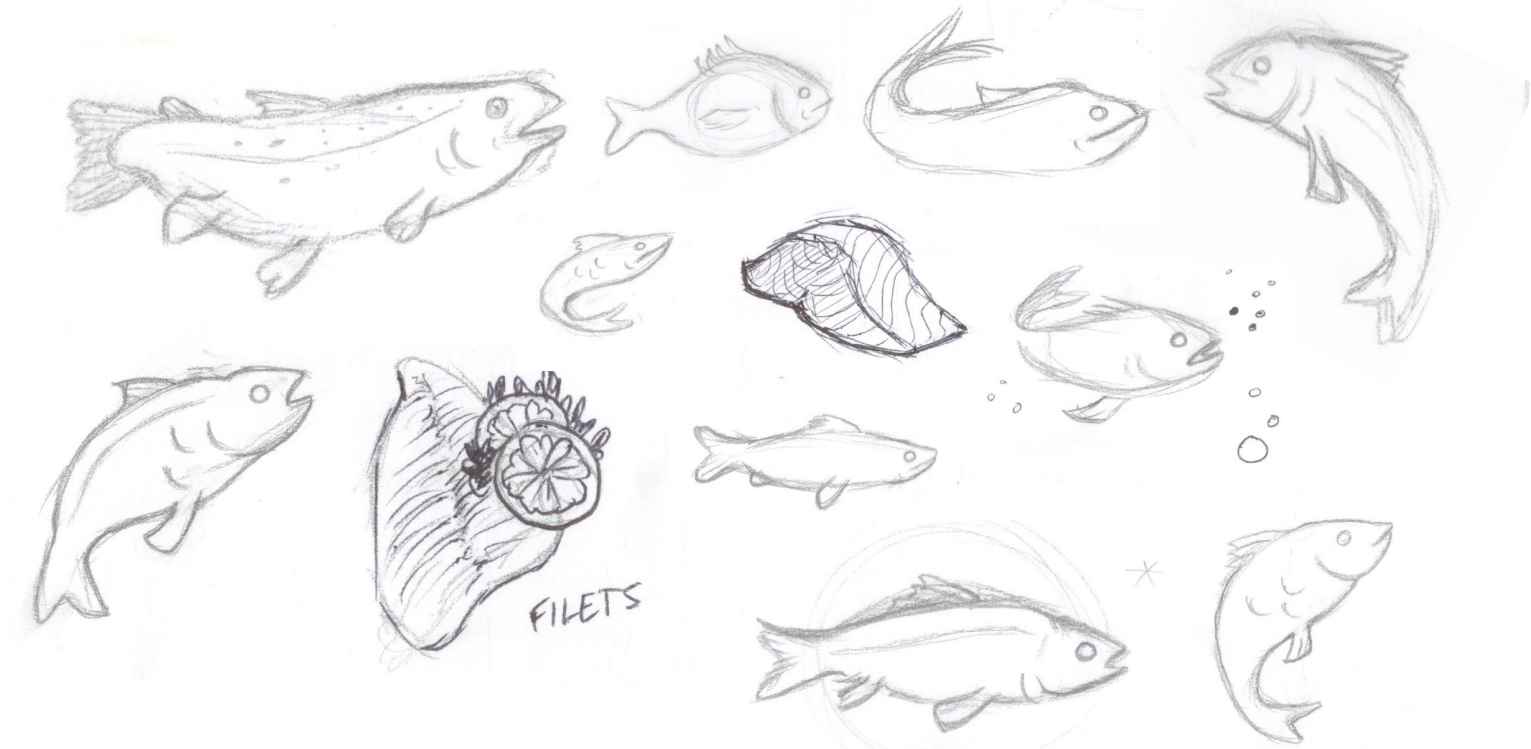
EGG

How would you like your egg icon? Fried? Sunny-side up? Slightly cracked? Poached? Raw? The gooiness of the raw egg was a joy to play with and was a consistent motif.



FISH

On a **scale** of a swimming bass to a tilapia fillet, how alive should the fish look? And soy looks very similar to a snap pea pod; should I include the bean or a bi-product, like soy sauce or tofu?



SOY



STUDY

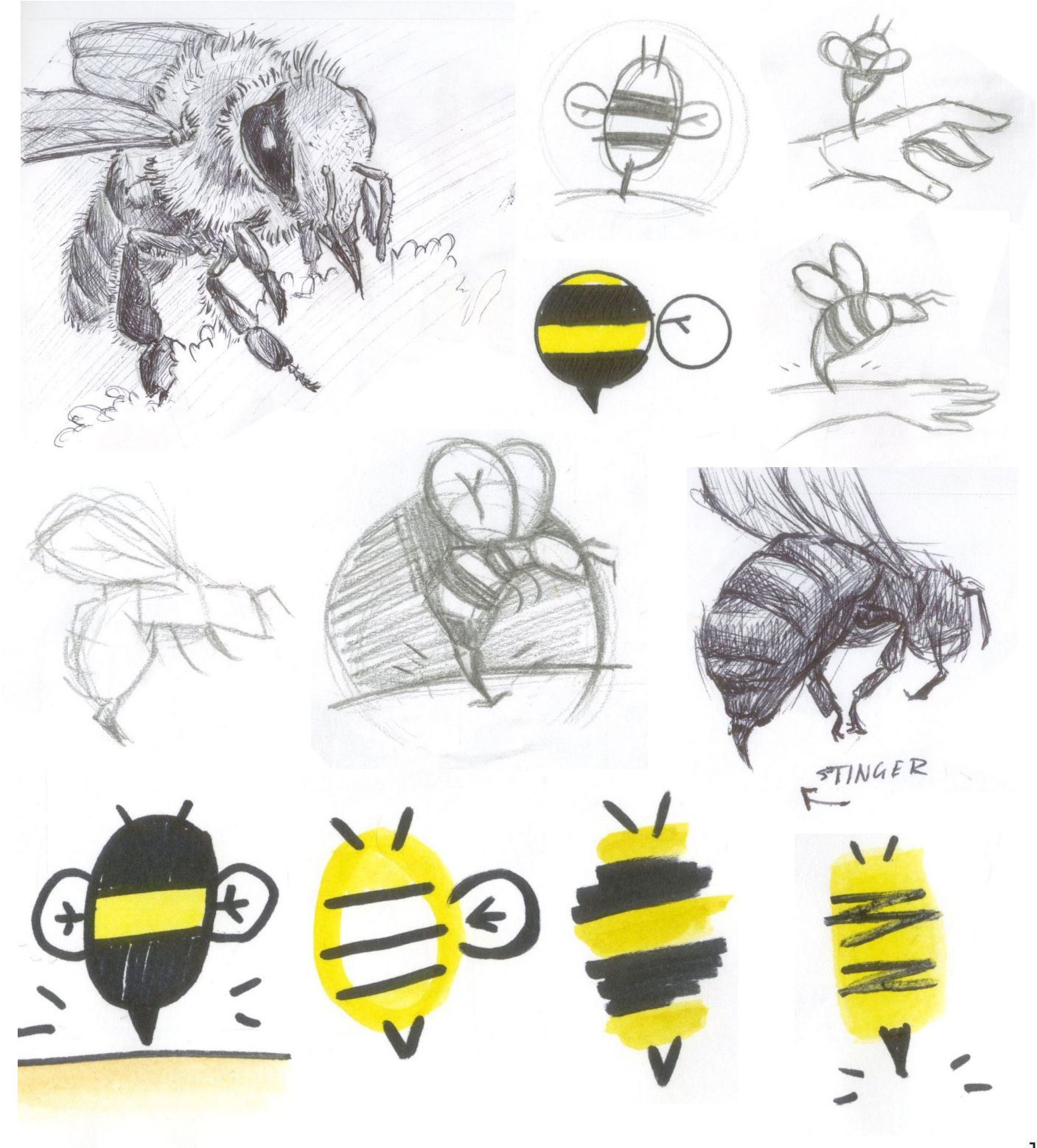
SHELLFISH

The variety of shellfish types (shrimp, crab, clam, lobster, oyster...) was exciting to explore. Should I illustrate an assortment of shellfish or would a single creature be best?



BEE STING

I'd **bee** lying if I said this icon's process was boring. From hyper-realism to abstract watercolored stripes, this winged, buzzing bug created vast possibilities. My goal was to create the dynamic action of stinging.

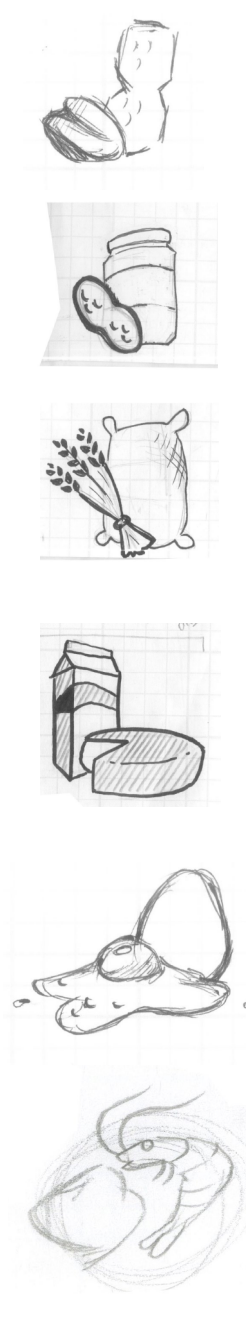


DEVELOPMENT

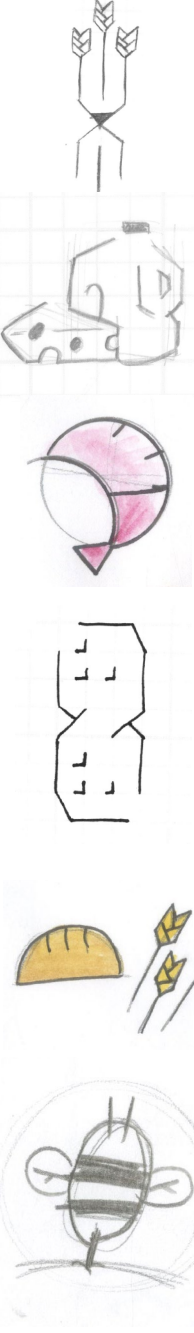
HOLDING SHAPE



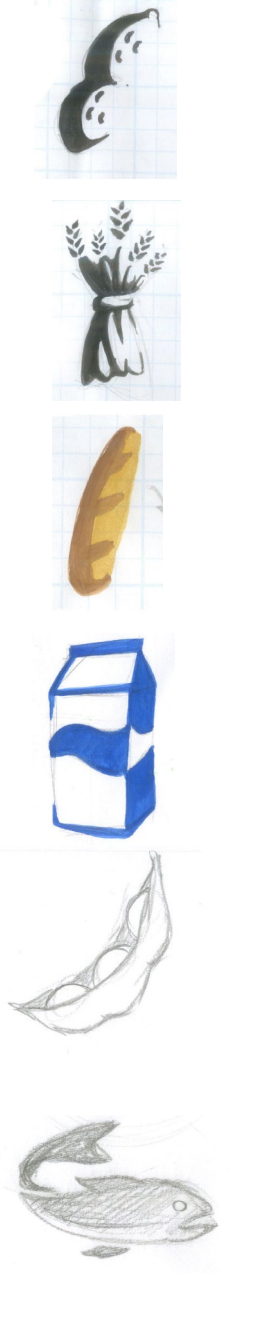
ARRANGEMENT



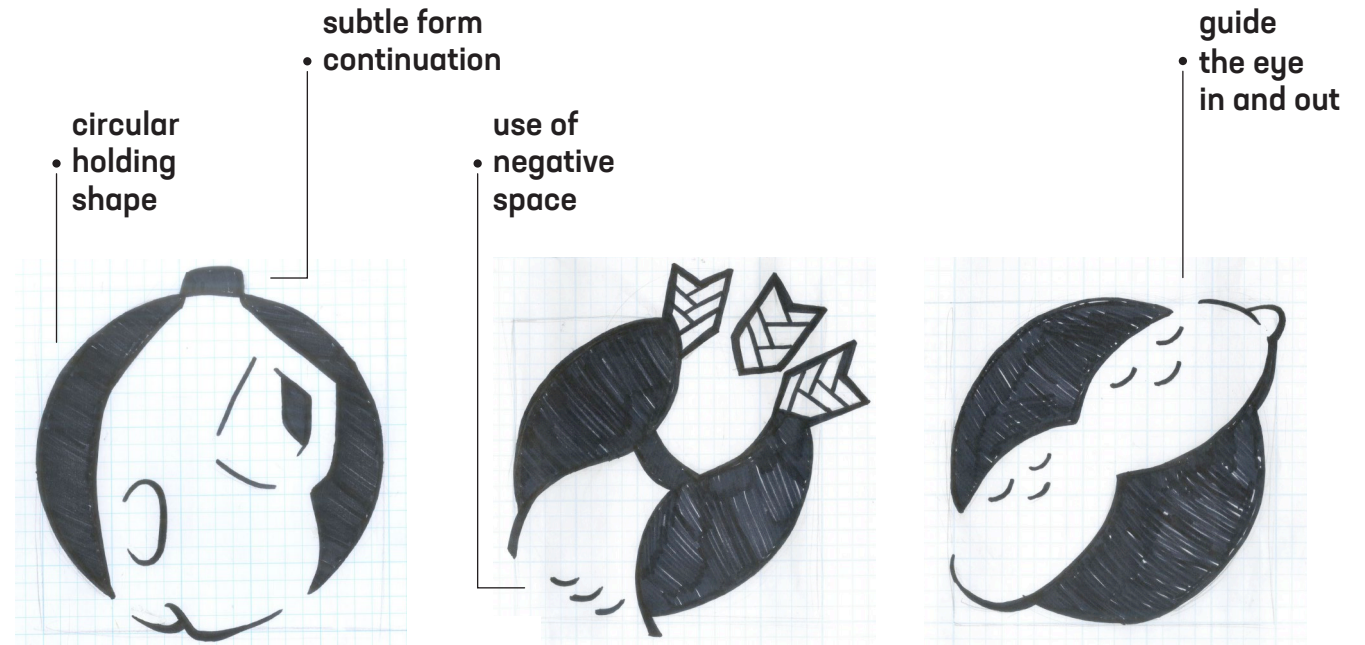
GEOMETRIC



LIGHT + SHADOW

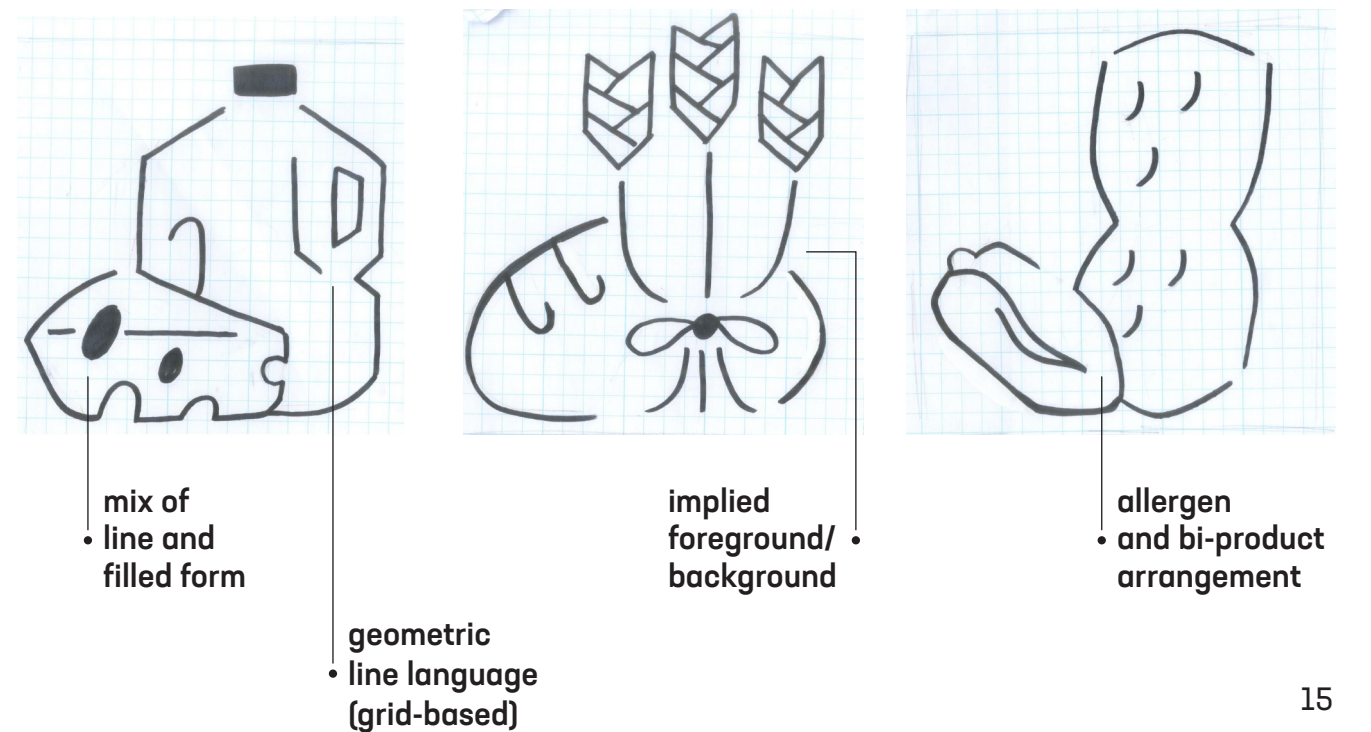


I decided to develop these two style languages further. Their unique visuals + style, as well as their ability to be clearly understood, were strengths that I worked to enhance. I worked at a larger scale (roughly 5"x 5") which gave me a refreshing change of pace + a new perspective.



HOLDING SHAPE

GEOMETRIC



After extensive sketches + visual exploration, I organized the prominent styles into 4 broad categories. Each category held icons of various styles, color, and form language, but they shared a common thread in the general thought behind their design. From here I could decide which style were most successful + worth taking further.

DEVELOPMENT

The black, circular holding shape showed to be the stronger icon style. The shape's contrast from the inner illustration made the icon's legibility easier for the users.

These iterations show how I transformed my primary sketches into the final icon set through various stages of digital iterations and extensive user-testing. 50+ people took my survey. [See how user feedback affected my designs below!](#)

primary sketch



- simple and tidy concept



- exploring additional items



- some users saw a moon, sunglasses, or lemons!

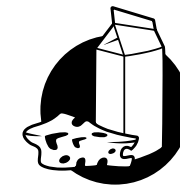
final icon



I created an open-answer survey: I showed the icon and asked the users, "What does this icon represent? Can you tell me why?" I didn't give any contextual information (allergens, multiple choices, foods, etc.) besides the icon.



- I explored a variety of milk containers!



- 100% of the users understood!



- negative space is key for this icon!



- many users read this icon as a broom, feathers, or a dress.



- wheat heads
- smaller, bottom lines connected



- tree branch evolved drastically



- this nut looks too similar to an onion!

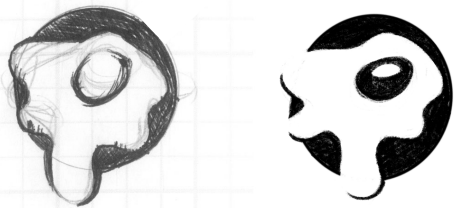


- all users saw a nut, but "tree nut" may need to be learned



DEVELOPMENT

primary sketch



- a raw/fried egg with a yolk is iconic



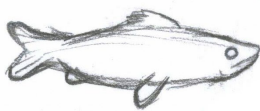
- some users saw a bear/cat, Wonder Woman logo, or the Phantom of the Opera mask!



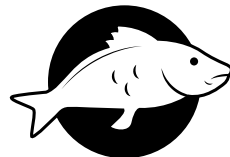
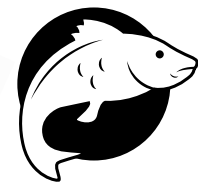
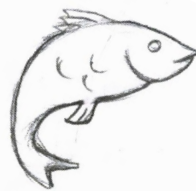
final icon



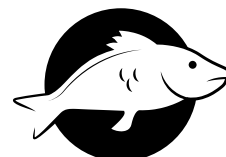
- shell was omitted for clarity



- ambiguity is key: fish could be living or dead



- tail was changed for clarity



- 100% of the users understood!



- shrimp is a recognizable shellfish



- all users saw a shrimp or prawn



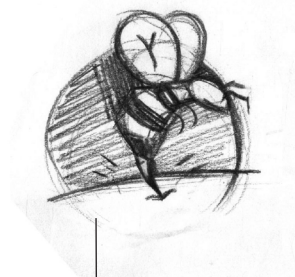
- antennae are whimsical + simple



- bean form was kept simple + open



- all users saw beans in a pod; some saw snap peas + edimame



- originally, skin + sting were included



- the wings gracefully use negative space



- skin omitted for system's consistency

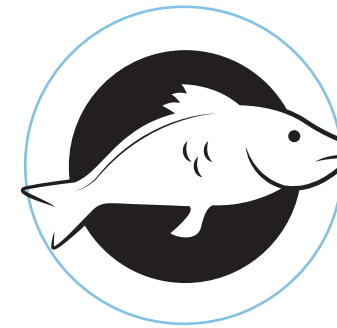


Consistent visual weight + use of negative space were areas I thoroughly explored. My main goal was to create a clear system made of literal + realistic depictions of each allergen.

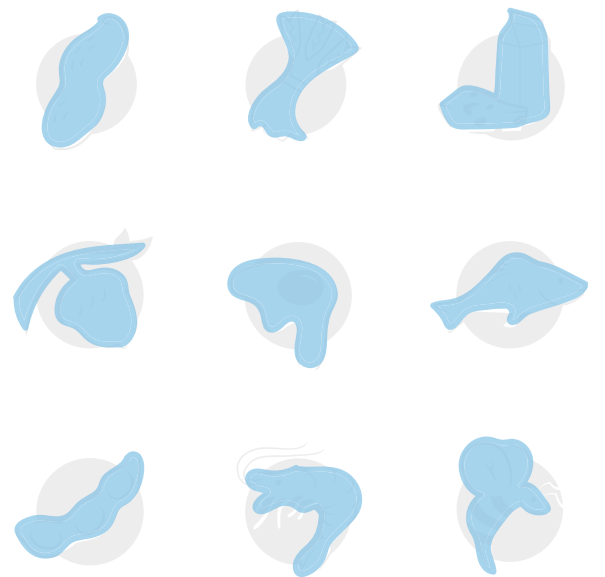
Realism is too complicated if simplicity isn't also taken into account. I took note of the problem areas the users had with the icons, and often, simplifying my design solved them. The egg icon is a good example of this; I removed the eggshell because it was causing confusion.



icons are
• clear at medium
+ small scale



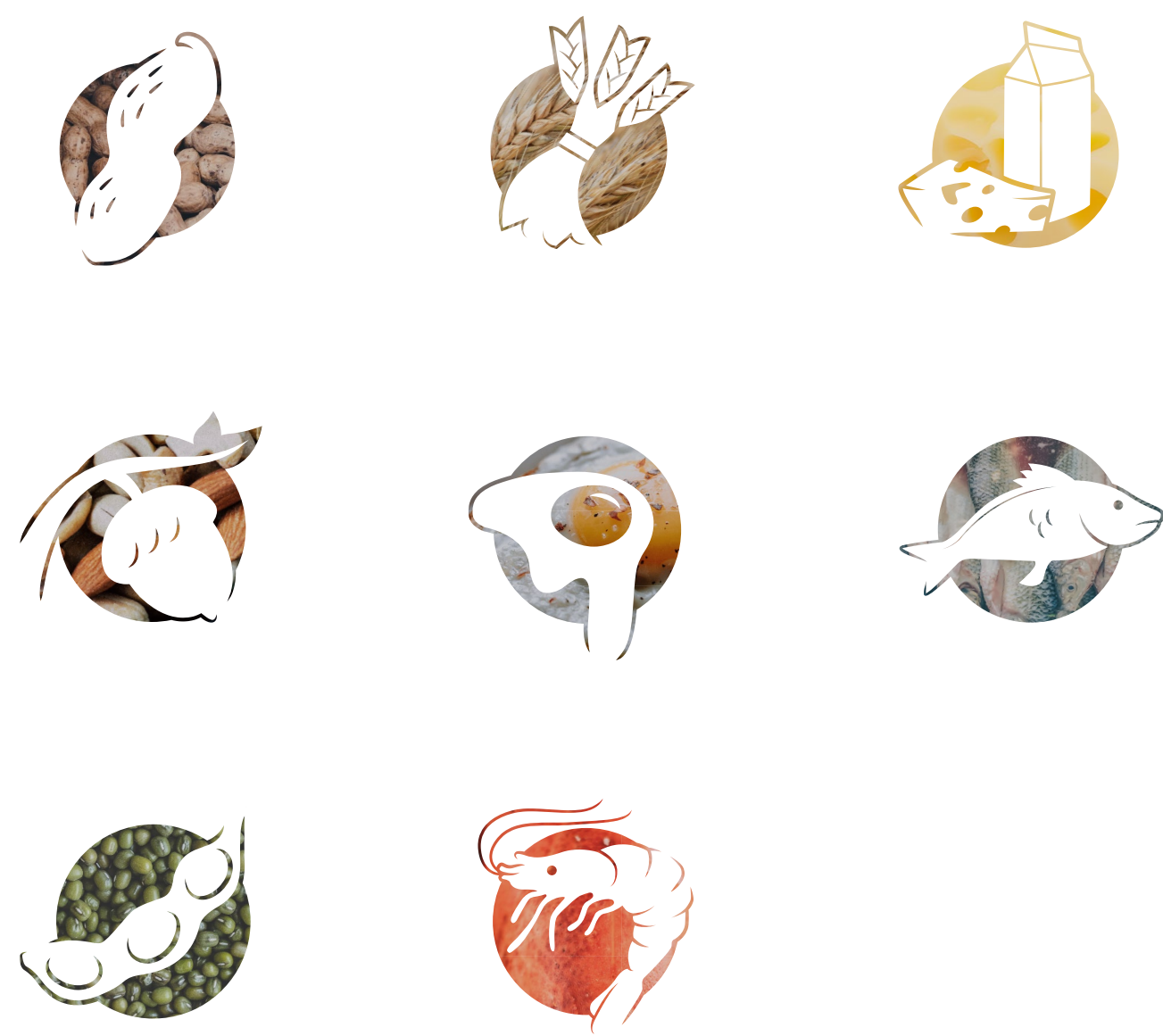
Each icon varies in shape + layout, so even at a small scale, the silhouettes differ enough that recognition is clear. (below)



Throughout the development stage, one of my main goals was to create consistent visual weight throughout the icon set. I accomplished this by keeping the inner illustration inside a larger circular guide.

My third and final round of user testing was successful; each icon was recognized by the users. The realistic + illustrative style in my designs, as well as the recognizable object, represent each category appropriately.

I applied these icons to a cookbook centered around providing delicious and healthy recipes to individuals with food allergies.



Photographs were inlaid in the icons to further emphasize and communicate the allergens throughout the cookbook. (Bee sting icon was omitted since it isn't food related.)



CONCLUSION

Over the 2 months it took to complete this icon system, my aim was to sketch and explore as many different routes, ideas, and solutions as I could. As the system began taking shape, I challenged myself to keep my system consistent by creating a form language. The final icon family is a hybrid between realism and simplicity, with uniform line weights and visual volume. Through research, class critiques, and my own personal process, my eyes have been opened to the sensitivities one must take into account while creating an icon system, and I look forward to using this knowledge throughout my design career!