THE INTERPRETIVE NATURALIST'S FIELD GUIDE

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A TOOL FOR YOUR SELF-GUIDED EXPLORATION

PROLOGUE

Welcome to the Interpretive Naturalist's Field Guide! This book is a product of my own need for inspiration in the outdoors. I have spent a lot of time learning outdoors, about ecology, leadership, camping skills, etc. I have had a lot of amazing mentors helping me do so. But as I grow older, it becomes harder and harder to access structured learning outdoors. I have become one of the mentors, but I know I have more to learn. Yet, it is hard to facilitate that learning on my own. So I thought others, like me, would benefit from a book to facilitate this type of learning. A book is simply a cheap way to learn without a time commitment. You can head outside with your copy whenever you find the time. Or whenever you need a mental reset. The goal of this book, really, is to inspire you to use the outdoors and better yourself in whatever ways are important to you.

Our theme for chapter 1 is tracking. You will tune your mind to experience the world from a different perspective, considering how some mammals of prey move through their environments. As you practice track identification and picking up on directional indicators, you will improve your intuition for tracking whatever animals exist around you. Animal tracking is an amazing way to lose yourself in the woods and clear your mind. Plus, you might find a friend!

In chapter 2, you will focus on the small things. We all know a good view when we see one, but what about the small things we sometimes look over? You will learn about the anatomy of a flower as you pick it apart, piece by piece and discover beauty when it is not staring you right in the face.

In chapter 3, we discuss homes. So many things in nature can provide a home. A dead tree trunk, for instance, holds more life than the tree did during its entire time spent upright. Discover some of the most unlikely places to find a home, and the ways in which a home can mean different things to different organisms.

Chapter 4 will look a bit different. Engage in a scavenger hunt that will guide you to ask questions. After all, exploration is all about asking questions. Some you can answer. Some, nobody ever will.

Soon, you will become your own naturalist guide with the help of this book. Take it with you on a hike or a calming afternoon at your local park, and get inspired to learn, reflect, and relax. As you read inspiring stories and engage with provided activities, you will strengthen your connection to local ecosystems. And seriously, this book is not just for casual reading. Get outside! Just the act of being outside is linked to increased creativity and problem-solving skills. As you move through natural spaces, this book will facilitate and inspire an explorative attitude in hopes that you come out feeling happier, healthier, and a little more informed about the outdoor spaces you love.

Happy trails!

CHAPTER 1

TRACKING

Welcome to Chapter 1 of the Interpretive Naturalist's Field Guide. Before you continue, find a comfortable spot to have a seat. You will do some reading and writing before getting up to explore.

In this chapter, you will learn the basics of tracking and how to incorporate it as a new outdoor activity. Animal tracking is like playing detective. As a tracker, you apply existing knowledge to every new situation, using intuition to solve a mystery. Tracking will test your observation skills and problem-solving. Plus, you are bound to get lost in a meditative trance that has you losing all sense of time. Before learning to recognize the prints of your local animal residents, you will have to enter the mindset of an animal. Start by reading the following story about a coyote who navigates her human and natural worlds in search of food. Take note of the ways a coyote is regarded by humans in a human-made environment, and how it may navigate that environment differently from a more natural setting.

Story - Coyote's Hunt

Honking and unintelligible shouts distinguish themselves from the low rumble of engines. Confined by concrete and common decency, vehicles of all shapes and sizes crawl their way towards their passengers' nighttime accommodations. Past the divider, even more vehicles hustle by the stand-still at unnecessary speeds. Their passengers, though, are far from eager to get where they are going.
Just beyond the next margin, things move with less urgency. Bushes of juniper stand stagnant. As they did yesterday. As they will tomorrow. Pines make their way toward the sky. Building themselves at a velocity infinitesimally slower than the cars that slug away from the city center. Gray squirrels and voles make use of the stillness of their sustenance, collecting seeds and snacking on flower bulbs. But their work is simple, and close to home.

More honking. More shouting. Daylight closes, bringing everyone a step closer to an exact replication of today: tomorrow.
In a pocket exposed to the fleeting sun, another fluffy creature remains dormant. She dreams first of a rabbit. It taunts her with plant-like stillness before, without apparent cause, bounding away into the brush. She follows. Again, the plump, gray rabbit stops. Now, her desperation does not make way for patience. She lunges forward, utilizing her alligator-like snout to reach out as the rabbit

springs off its haunches into the brush again.
Nearing a revival into the awakened world, the traffic begins to invade the Coyote's sensitive, but inured ears. Now, she is among the wide river of dammed up cars. A passenger flicks something hot and putrid out the window. Perhaps it is edible. A regrettable sniff tells her it is not. She continues on, swerving between the artificial predators that disturb her peace, but are indicative of survival nonetheless. Her dream furnishes another guiding apparition. She follows it, trotting along the freeway toward the scent. Aromas pouring from a window have her licking her chops. A semi towers high above her, like the gods dangling an invaluable gift. She plants her paws up on the step of the driver door, her snout stretching upwards.

"HEY!", a heavenly smite comes crashing down. "DUMB DOG!".

Startled awake, the Coyote is snapped out of her dream and finally joins the crepuscular world. Time to track down a meal. She rises and shakes off her bed of dirt. Her surprisingly pure coat gleans in the last bit of escaping golden rays. Realizing, to her delight, that the smell which had reached her dream stemmed from reality, she embarks to sniff it out.

At first, the canine's gait is slow and methodical. Each step with her hind paws land exactly within the print of the opposite forepaw. The tactical gait is referred to by humans as direct register, which helps to conserve energy. But as the Coyote nears its target, a thai restaurant that occasionally contributes scraps of overcooked meat, she speeds up into a full trot.

Soon she emerges from her wooded territory. To the Coyote, it is a resignation of her preferred means of travel. But to humans inhabiting the city's heart, the fragmented strips of forest are walls. Dead zones. Off-limits for the same reasons they do not deviate from the asphalt lanes in the congestion of rush hour.
In the absence of approaching low-beams, the Coyote begins a seemingly performative crossing of the street. Her orderly bounce from one step to the next bears resemblance to a quiet high school rebel expressing subtle defiance. She may not belong — at least, a human would say so — but she knows the city streets. They belong to this Coyote no less than to a local commuting to their favorite café.
Through picket fences, over brick walls, between garden hedges, the Coyote weaves past homes unnoticed by any human presence, aside from their cameras. She probes for food along the way. In one backyard, a mouse pops out from the resident's porch, just managing to wriggle out of her paws before leaping down its hole. In another, she even gets her maw around a small warbler that proves too agile. In another resident's garden, she stops to nibble on a stalk of brussels sprouts. Not substantial enough to call it a night, but it appeases the immediate pit in her stomach.

"DOGGIE!". Her ears perk up.
A gasp comes from behind the first voice. "Honey no, stay back!".

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The Coyote reels at the commotion, bolting back through the hole she came from. Hard to say if she or the child's mother was more frightened by the encounter.

Soon she finds the origin of her waking. Concealed in the shadows, she savors smells of simmering green curry and noodles drunk with fish sauce wafting out from behind the restaurant. She waits, eventually nodding off in the dead of night.

When she comes to, she senses something new. Unbelievably delightful. She follows the new scent, but it does not come from the restaurant. Rounding a corner, she stops in her tracks. Something seems odd. Never has she found such a perfect slab of meat so easily. And just on the street. Nonetheless, the Coyote's hunger wills her forward.

CRASH!

Two forms appear from the side of a van marked "Pest Control". Suddenly, the Coyote is caught up and she stumbles forward. Wriggling in the net, she cannot get her footing. The figures prod her, coaxing the wild animal further into the net. Wild, haunting yips escape her. In the struggle, jaws meet flesh. The force pulling on her loosens, and she takes her chance.

The net pole slips through her captor's hands. She thrashes herself away, releasing her face, then her forepaws, and then a hind paw. In her scramble to reprieve, she snatches up the slab of meat. So thick and dripping with blood. Her final paw eases free, and she tears away, stunningly. The Coyote lets out one final yelp more akin to a cackle, conceivably mocking her would-be-captors as she trots back to her hideaway in the motionless strip of forest.

Coyotes are all over North America, in all environments. They are incredibly adaptable as a species. They can thrive in the wild, but many do just as well subsisting off of human development. They adjust their hunting schedules, move through uninhabited spaces, and can eat almost anything they find, in order to avoid humans whenever possible. In this way, they are perfect for cohabitation. Despite their close proximity to humans, coyotes manage to slink by us, usually staying unnoticed. But as you develop intuition and a keener eye, you may start detecting evidence of them where you had not before. What is your attitude towards coyotes? Did this story change it?

Take some notes:

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Activity - Find Evidence

As long as you are outside right now, there are animals. Have a look around. As you walk, find a piece of evidence that tells you an animal had been there. It could be a footprint in the mud, some scat left in the trail, or a hole in the ground. You can detail your observations in the space below.

What animal might it have been?

Why was it here?

What was it doing?

Which direction did it go?

Learning Gaits and Prints

Keen intuition will drive success in tracking. That comes with time spent in your local environment, learning the organisms that reside there and understanding how they collaborate. Eventually it becomes subconscious. Though, you will need the groundwork to get started. It will be up to you to do place-specific research on your own (I would advocate for a field guide rather than the internet), but there are some adaptable principles for tracking in any habitat:

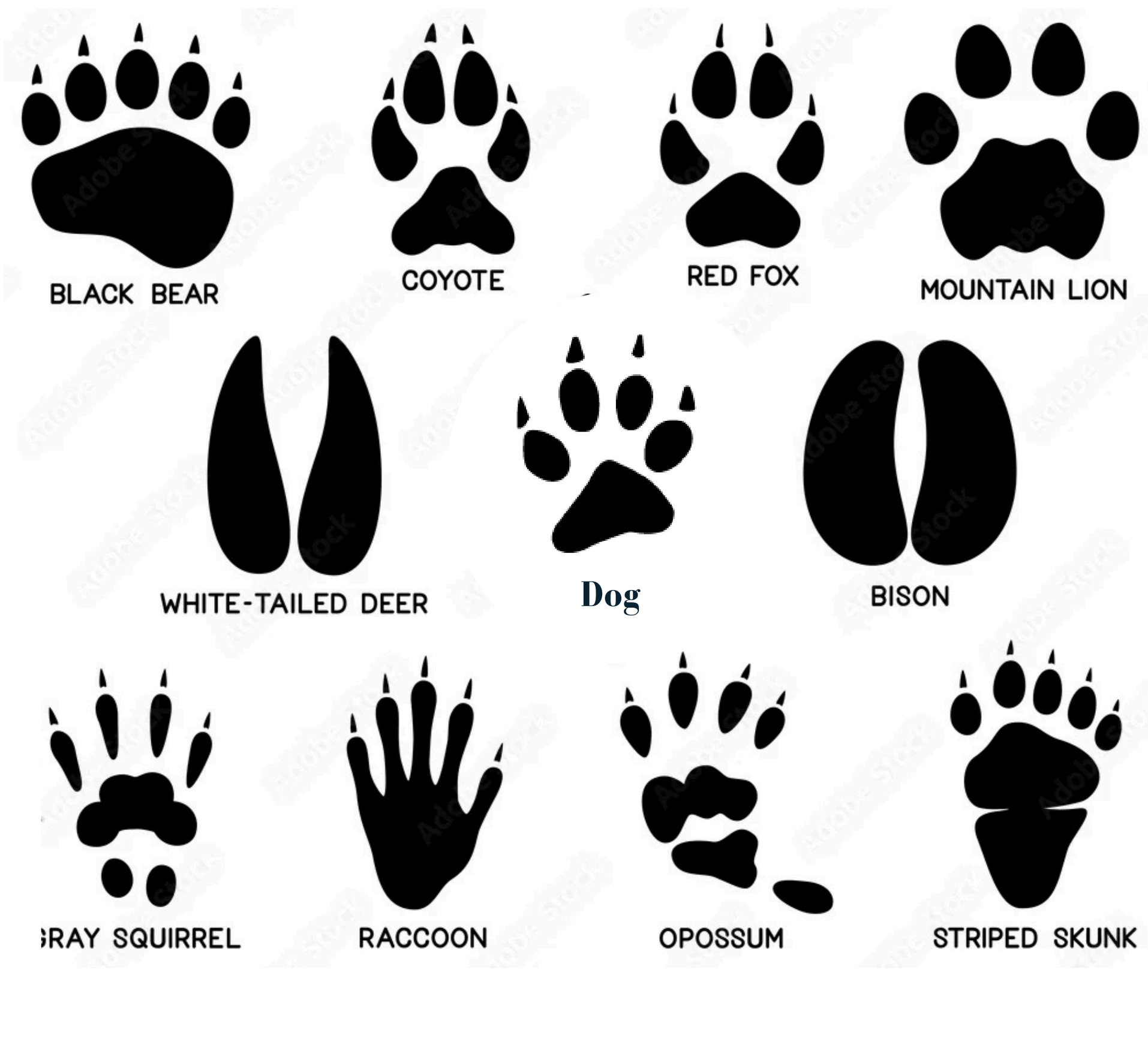
As noted in the story you read earlier, direct register involves the animal's hind paw landing within the opposite forepaw's track. The coyote trotted in this gait to conserve energy, though direct register is also used for stealth. In fact, cats, obviously known for their quiet and precise movements, typically leave tracks with direct registers. Differentiating direct register from overstep — when the hind paw lands past the forepaw's track — will always be your best indicator of whether you have a feline or canine track.

Now getting into the specifics of individual prints, another differentiator between a feline track and a canine track is whether or not an impression of the claws shows up in the dirt. Cats — as well as mountain lions, bobcats, and most felines — have retractable claws that stay hidden until they go for their prey. Once you know you

have a feline, size and palm shape are your best measures for determining the species. Same goes for canines, but you have the added help of the claws. If you live in the United States, your most frequent problem in tracking will be discerning a coyote from a large dog, who will both likely be walking the same trails you are. The size and shape of their foot pads are almost identical. But you may see in the pictures below that there is a difference in the claws. Notice that the dog's claws splay out considerably, whereas a coyote's claws (especially the middle two that extend forward) are turned inwards(see prints below).

Differentiating between dogs and coyotes, canines and felines, and really all tracking becomes easier and more fun in the snow. Every print shows up easily, even rabbits, squirrels, and weasels, which are usually too light to make a substantial imprint in dirt. Tracks last until the snow melts, or until the next snow storm providing a lot of prints to practice with. Differences in gaits become obvious enough to interpret actions and intentions. Like their signature trot, which if you have never seen, definitely find a video (or track down a real coyote!). Their bouncy, overstep trot is an efficient gait for long-distance travel, and shows up in snow as a more or less straight line dotted by paw prints. But if the snow shows angled prints, that is evidence of a side trot, indicating faster travel. If tracks seem scattered and aimless, they were probably created by a dog. Coyotes do not have energy to waste like dogs who are always guaranteed a meal.

Here are some prints you could find in North America:



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Keep Learning

Of course, you cannot learn everything on your own by simply witnessing nature. After a day of exploring, some supplemental research is in order. When you get home, detail an animal species as if for a guidebook. Ideally, it would be something you saw today or that you know exists in your local environment. Before you leave your outdoor space, start filling in everything you already know about the animal. Then use supplemental resources for the rest:

Species:

Scientific name:

Size:

Color:

Habitat:

Diet:

Enemies:

Does your species benefit its resident ecosystem? How?

How do they interact and react to human presence and actions?

Does your species have significance in any culture?

Does it have significance to you?

Write one fun fact you could tell a tour group about your species:

Additional notes:

CHAPTER 2

GOOD VIEWS

You have made it to chapter 2 of the Interpretive Naturalist's Field Guide! This time, we're going to get a little more introspective and really enhance your curiosity. First, let me ask you this. What is one of the best views you have ever seen? Did it make you feel something? Maybe it reminded you of how small you are on this vast planet. Maybe it helped you relieve some stress. Detail the physical and emotional aspects of that experience in the space below:

You probably wrote about a great sunset or the moment you reached the summit of a mountain you worked all day to climb. When most of us picture a good view, it's something sublime. Larger than life. But today, I want you to explore the micro-views. You will find a lot to look at in the little things. Before the next activity, take some time to notice the intricate patterns, subtle movements, and granular colors that exist in nature's micro-world. Do you find that the small things look more random than expansive views, or are they often arranged in a more organized manner?

Rainy Day Game

Poor weather is a part of nature. Sometimes you have to embrace it. Sometimes it can be fun. Often it curtails your plan. If you find yourself in for the day, but eager to go exploring, here is another option:

file:///Users/danmarin/Desktop/GuideGame.html
If you follow this link you will be directed to a virtual naturalist game, in an interactive multi-directional story. The game will walk you through the Sedgwick Reserve, just north of Santa Barbara, as you discover its local ecology. Your goal is to find enough native species throughout the game to save the reserve, and learn about each one as you go. Try it out on a rainy day!

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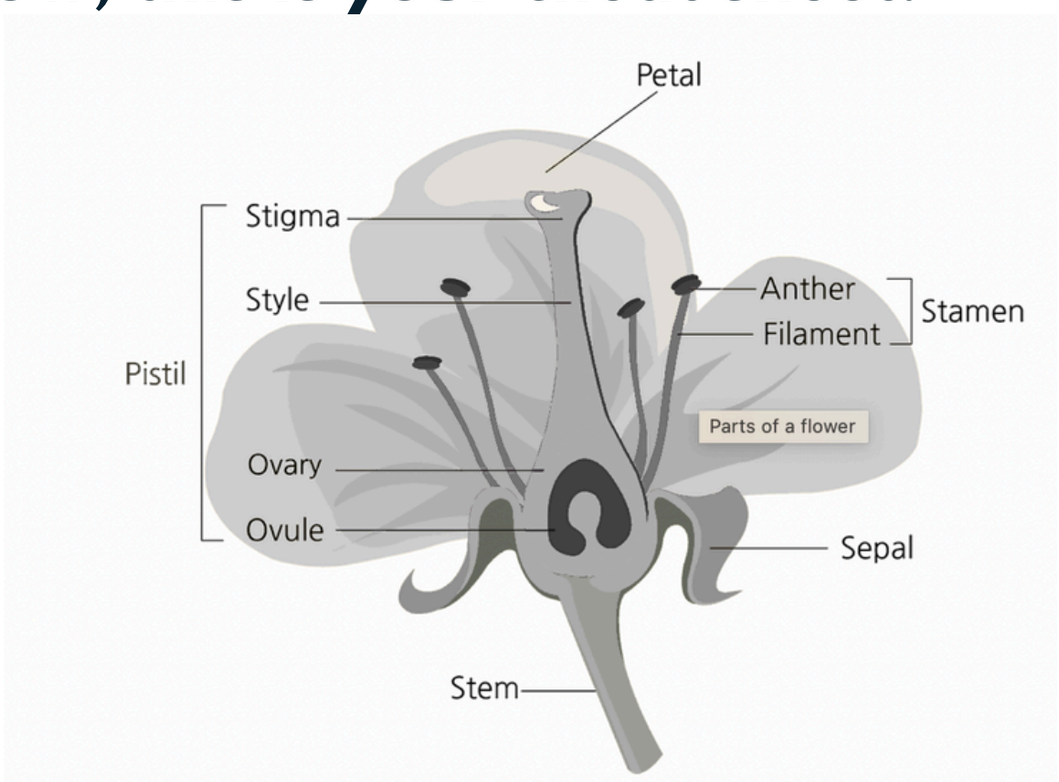
Anatomy of a Flower

If you have not already, find a flower before you start this activity. Tear it apart, search for its individual parts. Can you put names to any of it?

You probably know the petals and the stem. Maybe if you can recall from high school biology, there are also the pistil and stamen. You probably do not think about flower anatomy too often, so no matter how much you know, this is your cheat sheet:



What is a flower?
The reproductive part of a plant. Flowers can have male parts, female parts, or both (called a perfect flower). Sometimes a male flower can pollinate a female flower on the same plant. Or, if a plant is only male or female, then the pollen of a nearby male plant must somehow reach the female plant — transported by wind, bees, or even water.

What is the difference between male and female flowers?
Male flowers have a stamen (usually long, skinny stalks extending from the base of the flower), which consists of the anther and filament. The filament is the stalk. The anther is where pollen sits and waits to be collected by pollinators. Try touching an anther and see if you get some yellow pollen on your finger.

Female flowers are where pollen is deposited. When pollen reaches the female flower, it makes its way down the pistil, starting at the stigma. The stigma captures the pollen and sends it down the style (a tube). Eventually, the pollen reaches the ovary where the ovules are housed, and an ovule is fertilized.

What happens next?
Have you ever thought of what a fruit really is? It is actually a much bigger category than you think. A fruit is simply a fertilized ovule that has swelled. The swelling is simply a method to spread seeds within. The fruit we think of is an ovule that swells into something sweet, enticing animals to eat it and disperse the seeds. However,

even those fluffy white things that you blow off a dandelion, are fruits. Eating it will do no good, but they serve a purpose still. The fruit of a dandelion is meant to disperse seeds by wind.

Now, the basics do not necessarily apply directly to every flower. They come in all shapes and sizes. So, here is where your interpretive skills come in:

First, find a new flower. Before you pick it apart, draw the intact flower in the space below. You do not have to put in incredible detail, but try to include most of the individual parts in your drawing.

Then, pick apart your flower and identify each part according to what you have learned — stamen, petals, stigma, etc.. Is the flower male, female, or both? Label your picture below.

Write

In the space below, share your thoughts. Do you most appreciate vast "macro-views" or the unnoticed, intricate "micro-views"? What is it about both that connects us to nature and promotes our well-being?

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Keep Learning

After a day of exploring, some supplemental research is in order. This time, choose a plant, rather than an animal. When you get home, detail your plant species as if for a guidebook. Ideally, it would be something you saw today or that you know exists in your local environment. Before you leave your outdoor space, start filling in everything you already know about the animal. Then use supplemental resources for the rest:

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Size:

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