

SUMMER'S LAB

LAB MANUAL



BY PAIGE
HUDSON

SUMMER'S LAB - STUDENT LAB MANUAL

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INTRODUCTION

A WELCOME FROM SUMMMER BEACH

Welcome to Summer's Lab!! I am Summer Beach, research scientist, Sassy-Sci supporter, and your host for this journey!

You may have heard about me through *The Sassafras Science Adventures* series, but if you haven't that is totally fine! I have known Cecil Sassafras, inventor of the invisible zip lines, for years, and I had a blast helping him teach his nephew, Blaine, and niece, Tracey, all about science. So when the twins (Blaine and Tracey) asked me to create an introduction to science, well . . . I have to admit I was floored!

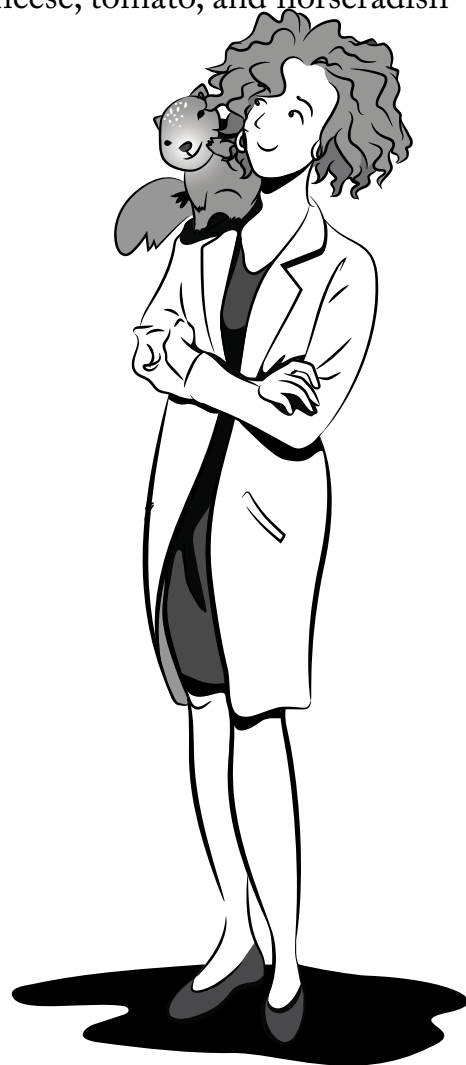
Ulysses had to wave a toasted roast beef, cheddar cheese, tomato, and horseradish sandwich, which happens to be my favorite kind, under my nose just to get me to respond! I quickly recovered and Ulysses and I set to work. In case you don't know, Ulysses is my lab assistant, who also happens to be an arctic ground squirrel. He's quite the helpful mammal, although he does disappear each winter for hibernation, which can be a bit tricky if we are mid-project!

So now that you know a bit about me, let me tell you about your upcoming adventure. Ulysses and I are opening the doors to our lab to give you a hands-on journey through science for the very first time. Each week we will be building a science sandwich that you will want to gobble up!

We will be learning about animals, plants, weather, rocks, matter, and forces. And you will work on your observations skills as you help us out in the lab.

Ulysses and I hope that you enjoy this year of sandwich science from our lab!

Summer
Beach 🐾



SUMMER'S LAB

UNIT 1: ANIMALS



STUDENT LAB MANUAL

SUMMER'S LAB PRESENTS: AMPHIBIANS

Hi-ya! My name is Summer Beach, and I am super excited to be a part of your first look at science. I promise this is going to be more fun than eating a portabella mushroom burger topped with spinach, blue cheese, and balsamic dressing!

I wish that I could zip you all to my lab to teach you all about science, like we did for the Sassafras twins, Blaine and Tracey. But, alas, Ulysses and I aren't able to do so. Did I mention Ulysses S. Grant is my lab assistant yet? He's quite the smart little arctic ground squirrel and super helpful to have around.

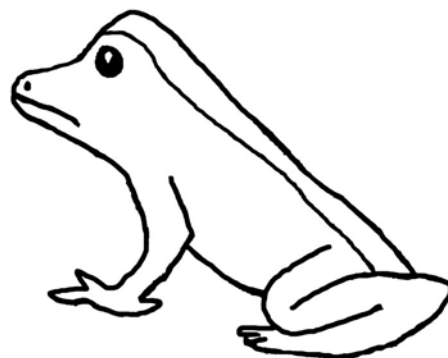
But we are not here today to talk about me! We are here to learn about the amazing creatures known as amphibians! Before we begin, I must ask - have you ever played Froggy? Other than the fact that they are really good at hopping, what do you know about frogs?

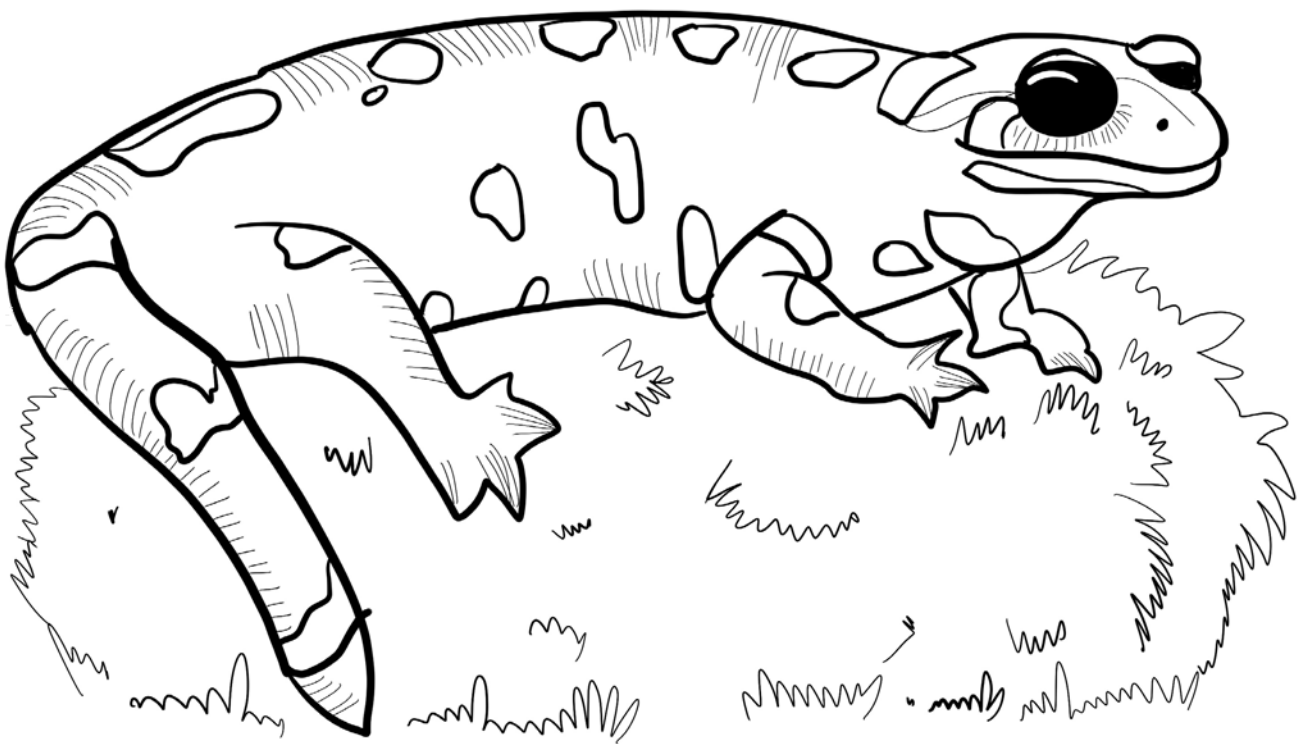
That was very interesting! Did you know that frogs are part of a group of vertebrates known as amphibians? The word amphibians means "two lives," and the creatures in this group literally have two lives!

Amphibians hatch from eggs and spend their early days swimming around in the water as fish-like larvae. Then, they grow legs and their tail disappears. The animals spend the rest of their lives as frogs, toads, or salamanders on land! We call this process metamorphosis.

Since amphibians begin life in the water, you can usually find them living in damp areas near water. They typically have smooth skin and are cold-blooded, which means they don't make their own heat.

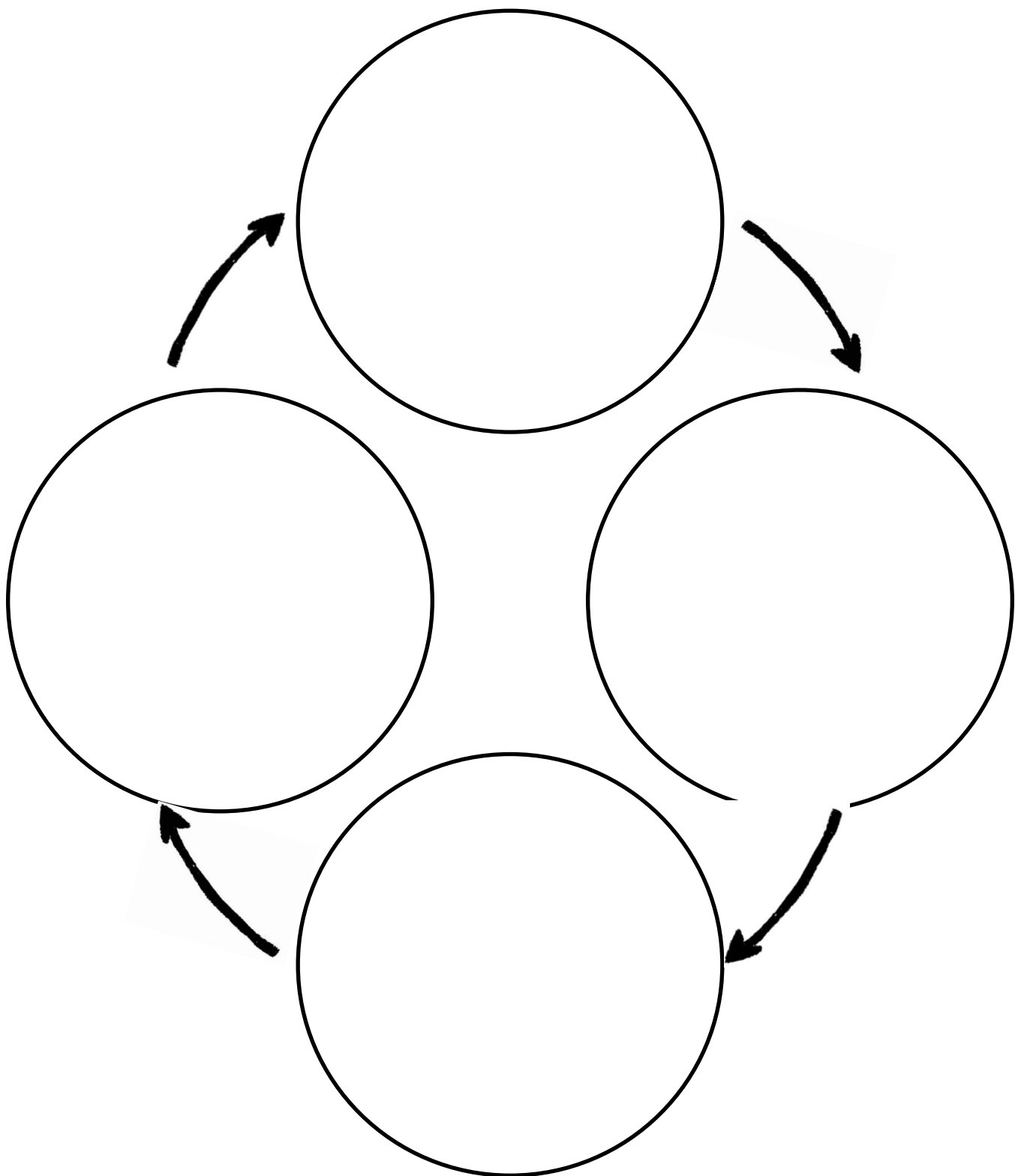
Ok, it's your turn! Take a look at the pictures below. Can you point out which is the fish-like larval frog, the one that lives in the water? And which is the adult frog that lives on land?





Amphibians, like frogs and salamanders, live the first part of their lives in water.

FROG LIFE CYCLE



FROG PRINTS

11



SUMMER'S LAB PRESENTS: BIRDS

Ulysses and I were recently on our first spring picnic, scarfing down our sandwiches – bagels with smoked salmon and capers, yum-o – when we spotted some ptarmigan. The birds were moving in and out of the rocks, quietly searching for a meal of early spring willow buds.

I love to spot birds in Alaska in the spring because they are molting, which means they are losing their extra winter feathers. Ulysses and I like to gather these up to use for different projects and experiments in the lab!

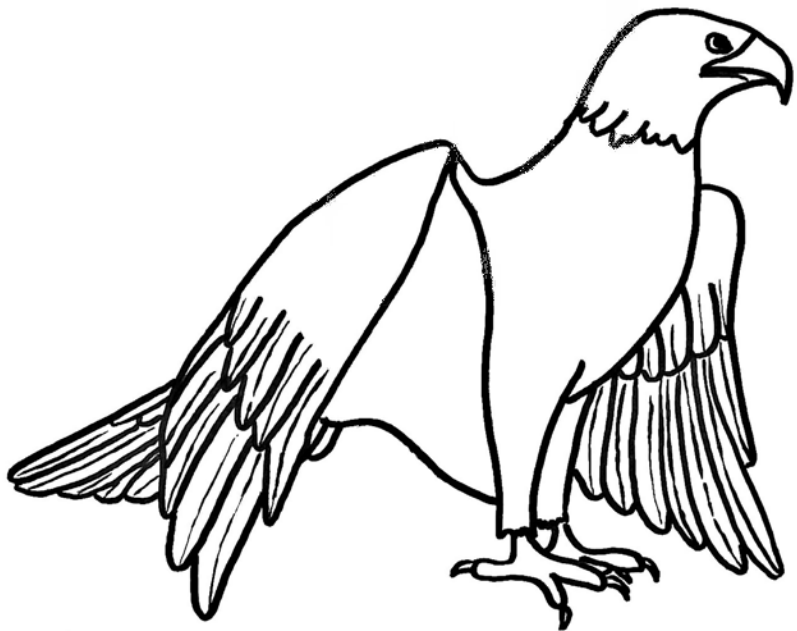
Before I share with you a bit more about birds, why don't you tell me more about what you know about these animals?

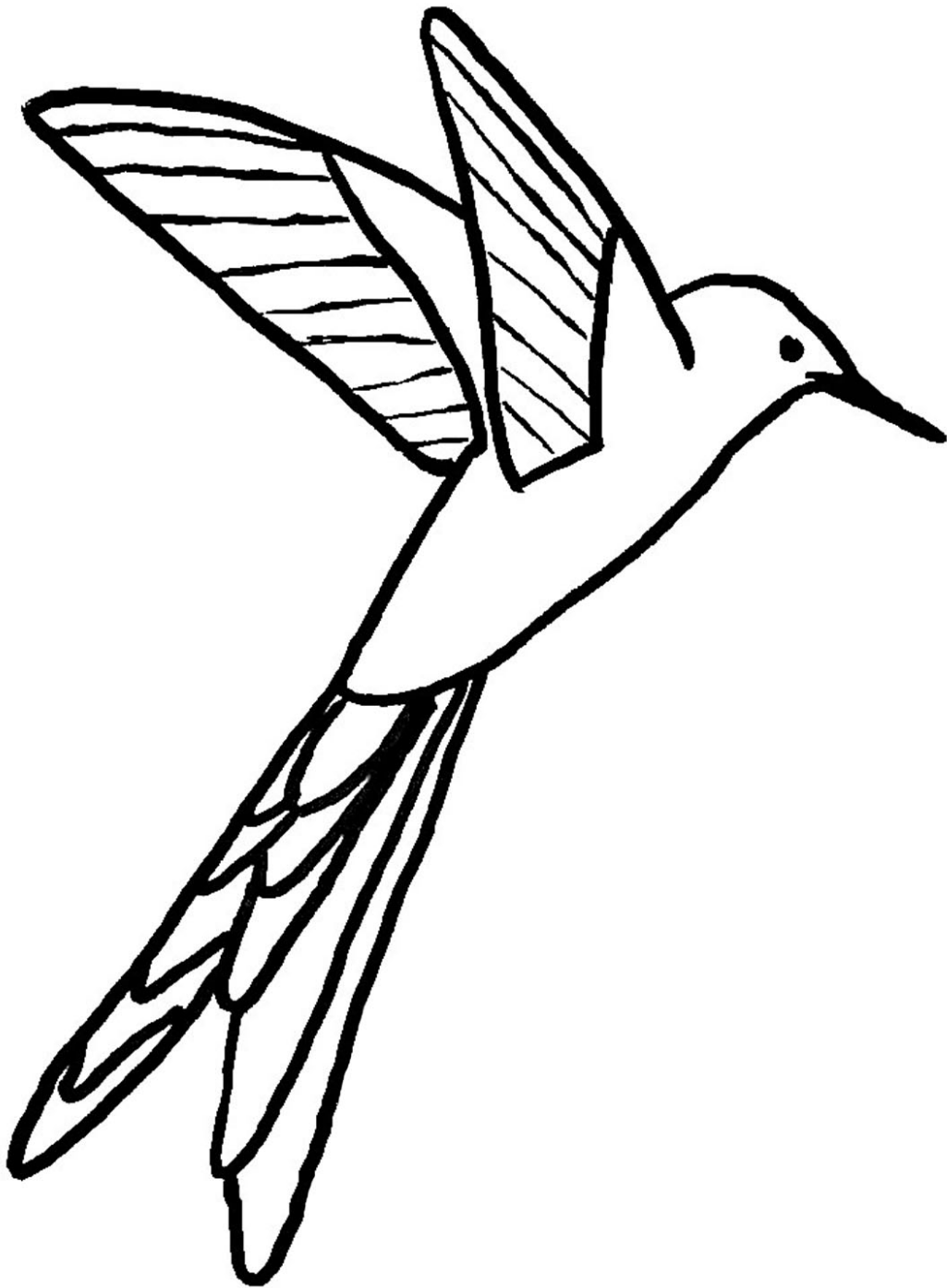
You are so smart!! Birds do have feathers covering their bodies, instead of the fur or hair that mammals have. The feathers help to keep them warm and help the bird to be able to fly. Birds also have wings instead of arms, which really gives them the advantage when it comes to flying.

Birds lay eggs and then sit on them for several weeks to keep them warm. Inside the egg, a baby bird develops, and when it is ready, it uses a special beak called an “egg-tooth” to break out!

Mama bird feeds the baby partially digested food, a.k.a. puke, until it is big enough to fly out of the nest and find its own food. So glad that I am a mammal and my mom fed me milk instead!!

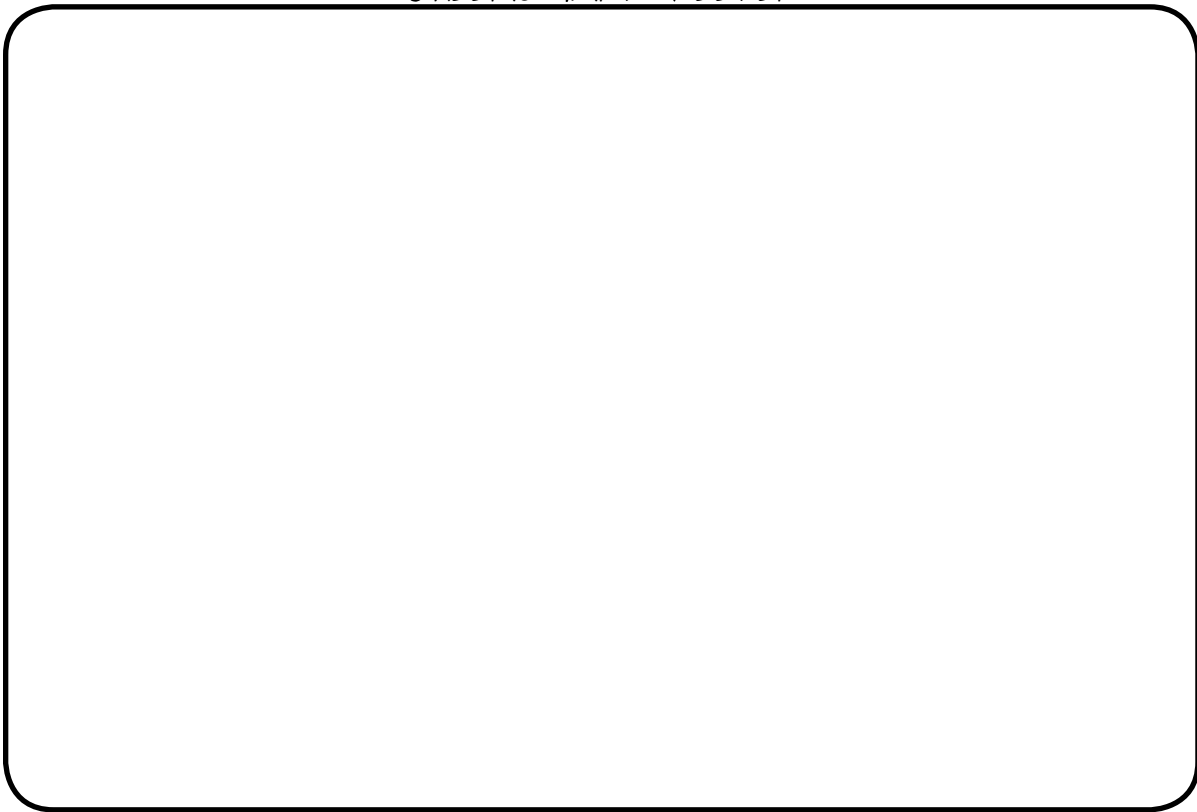
Ok, it is your turn!
Can you find the wings and feathers on the eagle?





Birds have wings and feathers.

CHEERIO BIRD FEEDER



This is who visited the bird feeder:



PAINING WITH FEATHERS

