

Virginia Department of Conservation and Recreation

FIRST LANDING STATE PARK JUNIOR RANGER ACTIVITY BOOKLET



How to Become a **JUNIOR RANGER**

Dear Future Junior Rangers & Families,

Welcome to First Landing State Park!

We believe spending time in parks is a great way to make memories and develop a greater appreciation for our planet's natural, historical, and cultural spaces. The goal of this booklet is to engage young (and young at heart!) outdoor explorers in fun, educational activities that promote discovery, wonder, and understanding of this park and the surrounding region's diverse and valuable resources.

To become a Junior Ranger, please complete the number of experiential learning activities required for your age group. Use the animal symbols to find your age group, then look for your animal icon on each activity page. You may choose to challenge yourself by completing additional activities! We also offer a variety of interpretive programs, museums, and other self-guided activities to enhance your Junior Ranger experience.

When your booklet is complete - you are a Junior Ranger! Bring your completed booklet to a Visitor Center for a Ranger Signature and special completion prize. Have a great time exploring! We hope you visit another Virginia State Park soon.

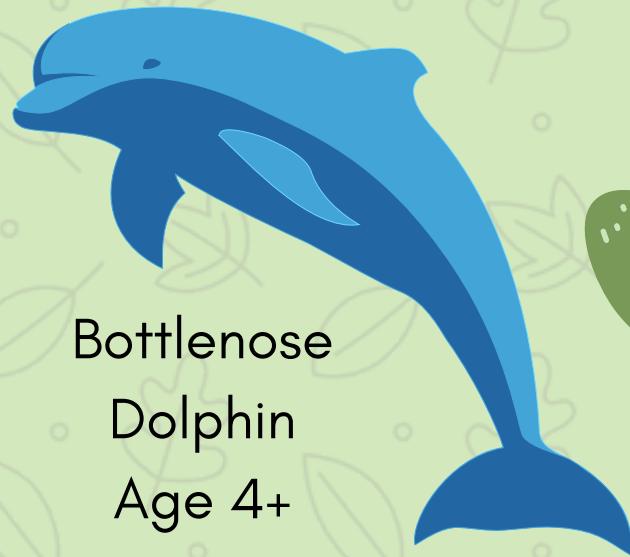
Sincerely,
The Rangers at First Landing State Park



HELLO! MY NAME IS RANGER

I AM _____

YEARS OLD.



Bottlenose
Dolphin
Age 4+



Bull Frog
Ages 7-9



Red Fox
Age 10 +

AGE 4-6: COMPLETE 5 ACTIVITIES

AGE 7-9: COMPLETE 7 ACTIVITIES

AGE 10+: COMPLETE 8 ACTIVITIES

WHAT DO RANGERS DO?

Rangers in parks wear many different hats. At First Landing, our rangers are broken into five main categories: Contact, Law Enforcement, Maintenance, Resource, and Interpretation.



Contact rangers welcome our guests at entrance points, visitor centers, and the camp store. They are typically the first person guests will encounter and interact with.

Law Enforcement rangers preserve the environment and keep our guests safe by enforcing the rules and responding to emergencies. These rangers are here to help!



Maintenance rangers keep the park operating properly and looking nice. They work hard to maintain our facilities and natural spaces.

Resource rangers conduct research and record data on native species, create trails, and monitor erosion. They work at multiple parks within a region.



Interpretive rangers educate park guests and lead activities that help people understand the natural, historical, and cultural resources that make First Landing so special.

FIND THAT RANGER

Now that you are familiar with the many hats a ranger wears, try your hand at identifying them!

Draw a line between each action and its matching ranger.



This ranger is checking turtle traps to monitor our rare chicken turtle population.

Law Enforcement



This ranger is leading a group hike down the Bald Cypress trail.

Contact



This ranger is reporting to a call about an injured guest in the campground.



This ranger is removing a fallen tree after a recent storm.



This ranger is checking in a camper at the front desk.



SORTING RESOURCES



Parks work to protect many different resources. A resource can be anything with value or purpose. In Virginia State Parks we put important resources into three categories.

Write the words from the bank on the right in the resource category you think it best belongs.

HINT: Some stickers may belong in more than one category!



NATURAL

Something found in nature, such as water, air, soil, plants and animals.



HISTORICAL

A person, place, or thing of importance such as a building, monument, or battlefield. These items, places, and people tell the story of human history.



CULTURAL

Something relevant to human activity, both historic and current. Can include physical items like artifacts or art and intangible items like folklore or education.



Oyster Bed

Park Ranger

Native Burial
Ground

Kayak Tour

Visitor Center

Campground

Pirate Legends

Interpretive
Programs

Recycling Bin

Loblolly Pine Tree

Chesapeake Bay

CCC Cabins

English Colonists
Artifacts

Hiking Trails

Cypress Swamps

MY NATURE JOURNAL

It's time to explore! Head outside to observe the wonders of nature.

Date and Time:

Location:

Weather:

My Field Notes:

Get Creative!
Draw a picture of
what you see.



OBSERVATION

STATION



*It's time to slow down
and be mindful.*

Find a leaf that calls out to you.

- Use the open space to sketch your leaf or make a rubbing.

Now reflect on the following and jot down your thoughts:

- Notice the color and texture of the leaf.
- How does it feel in your hands?
- Does it have a smell?
- From which tree did it come?
- How did the leaf get to where it is now?
- Where will it go next?
- How does observing this leaf make you feel?



A HAIKU HIKE

A haiku is a type of poem that uses the number of syllables in each word to create a pattern like the one below:

Line 1 has five syllables
Line 2 has seven syllables
Line 3 has five syllables



Haikus are fun to create as you are hiking and to spark conversation! You can write a haiku about anything, but if you need help, look to Bruce the Bullfrog for some questions to get you started.

How are you feeling?
What is the weather like?
Do you hear or smell anything?



HERE'S AN EXAMPLE:

snakes bask in the sun
bright light streams through the tree leaves
green frog calls echo



NOW WRITE YOUR OWN!

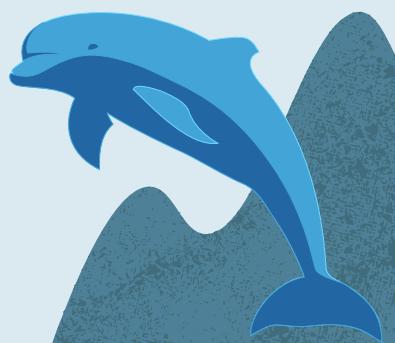
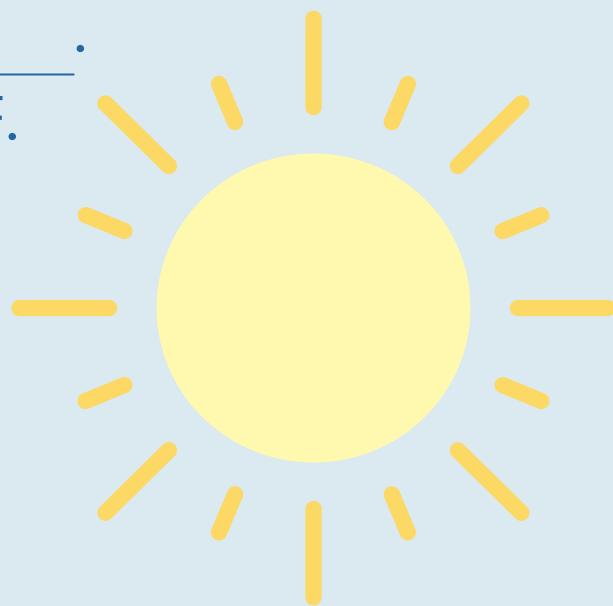
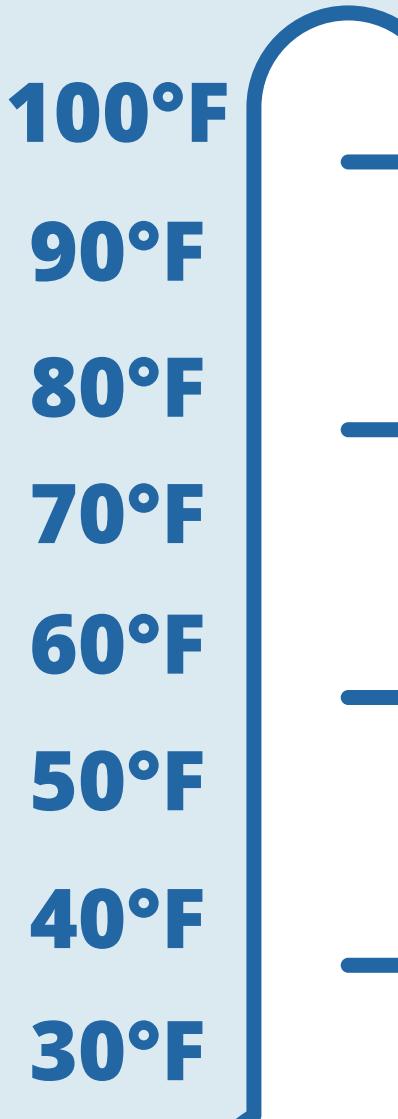


FEELIN' THE HEAT

Find out today's date and temperature,
then color in the thermometer below!

Today is _____.

It is _____ °F.



CHESAPEAKE BAY

WORD SEARCH

First Landing State Park is located at the mouth of the Chesapeake Bay where it meets the Atlantic Ocean.

Look for the 12 Bay words listed below.

D	U	N	B	E	A	C	H	A
O	S	D	L	U	Y	L	W	H
L	H	S	U	W	V	A	A	O
P	E	A	E	N	O	M	T	Y
H	L	N	C	F	E	Y	E	S
I	L	D	R	E	I	S	R	T
N	A	W	A	V	E	S	H	E
K	U	Q	B	K	J	P	H	R
P	E	L	I	C	A	N	L	G

Dunes

Blue Crab

Clam

Waves

Fish

Sand

Oyster

Beach

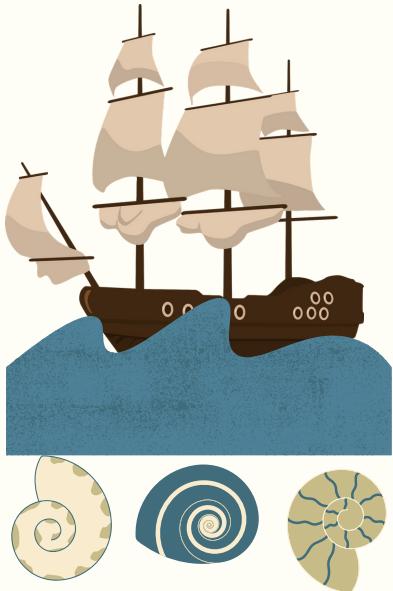
Shell

Pelican

Water

Dolphin

A HISTORY OF FIRST LANDING STATE PARK



In December of 1606, three ships carrying colonists departed the shores of England in search of a permanent place to settle in North America. In April of 1607, *The Susan Constant*, *The Godspeed*, and *The Discovery* arrived in the mouth of the Chesapeake Bay, near the future location of First Landing State Park, before eventually choosing to settle in Jamestown. The Native Americans of Southeastern Virginia had already been living off the land for many generations, traveling the waterways on canoes and trading shells and other rare items to tribes further inland.

In the 1800's, merchant mariners, pirates, and military ships navigated the same waters in smaller, faster ships that could access the shallow areas of the Bay and its tributaries. These groups often stopped to gather fresh water from bald cypress swamps before heading out to sea. Legend has it that the fearsome pirate, Blackbeard, hid in the Narrows area of modern day First Landing State Park while lying in wait to ransack cargo ships. Other interior waterways in the area were used by Union and Confederate soldiers during the Civil War. This long military presence was reinforced by US Naval occupation in Southeastern Virginia in the mid 20th century. Soon a deep channel was dug to improve access for these large, metal warships.



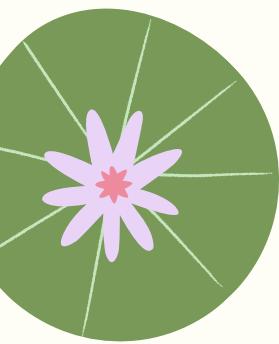
First Landing State Park was built between 1933-1940, primarily by an all African-American branch of the Civilian Conservation Corps. Hard-working young men traveled by foot around thousands of acres to cut trails, build cabins, and plant trees – eventually opening the new park under the name Seashore State Park in 1936. Today the park is a National Natural Landmark and is listed in the National Register of Historic Places. As one of Virginia's most visited state parks, it is an oasis within urban Virginia Beach. The park has almost 20 miles of trails and 1.5 miles of sandy beach along the Chesapeake Bay. First Landing offers many recreational and educational activities and is home to many unusual habitats including bald cypress swamps, tidal marshes, maritime forest, and several rare plants and animals.



HOPPING THROUGH HISTORY



Each destination on the timeline below represents one of the many groups of people who have navigated their way around First Landing State Park. Sketch what kind of transportation you think each group of people used to explore the land and waterways.



1930's
Civilian Conservation Corps Work Crew

1940's
U.S. Military

1700's-1800's
Merchant Mariners & Pirates

Chesapeake Native Americans

1600's
English Colonists

YOU!

FINISH



START

THE COLONISTS' CONCERNS

The first English settlers faced many hardships and tribulations when they arrived on the coast of Cape Henry. Some of them include, insects, disease, and famine. Imagine you are a part of the Virginia Company sailing across the Atlantic to explore the New World. What are some things you would have done differently from the orginal colonists in these scenarios.

Before even leaving the dock in England, you notice that the only people boarding the ships are upperclass men who have little work experience.

Who do you think should have gone on the first voyage?

You finally arrive in North America. You and your shipmates start to drink from the water.

It does not taste like the water back in England. Do you keep drinking or think of another solution.

After some exploring in the area, you venture into the woods and stumble upon a group of people who aren't Europeans. You assume that they are natives to the area and go to tell the other settlers. Your group holds a meeting to discuss what do about the native people. What do you say during the meeting?

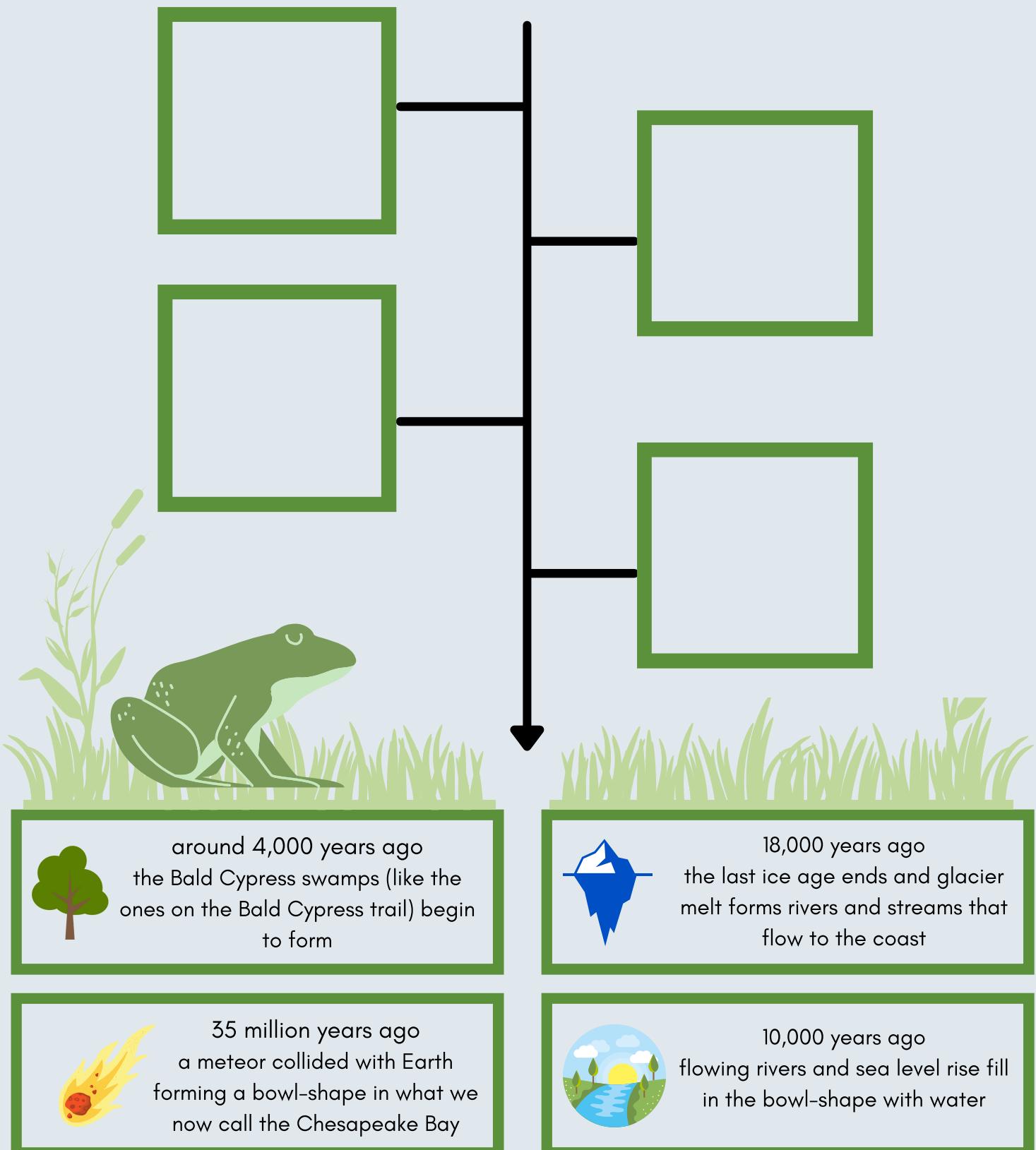
You and your comrades have been in your new settlement for a few weeks and have been starting to try and grow food. However, the crops you plant keep dying and people are getting hungry. Do you keep trying for crops or do you find other ways to get food?



IT'S OLD AS DIRT

(GEOLOGIC HISTORY OF FIRST LANDING STATE PARK)

DRAW THE IMAGE AT THE CORRESPONDING PLACE ON THE TIMELINE



THE CHESAPEAKE BAY WATERSHED

WHAT'S A WATERSHED?

An area of land where all the rainfall and snowmelt flows to creeks, rivers, and streams that all have a common outflow point.

LABEL THE STATES USING THE WORD BANK AND COUNT HOW MANY ARE INCLUDED IN THE CHESAPEAKE BAY WATERSHED: _____

LABEL THE CHESAPEAKE BAY AND THE ATLANTIC OCEAN

Though the entirety of these states might not be in the watershed, there are still 64,000 square miles of land and over 18 million people who live here!

DRAW A STAR WHERE YOU LIVE (IF IT'S NOT ON THE MAP, YOU CAN USE THE PARK'S LOCATION)

- Watershed Boundary
- State Boundaries
- County Boundaries

0 30 60 120

Miles

Word Bank
Pennsylvania
Maryland
New Jersey
Virginia
New York
West Virginia
Delaware



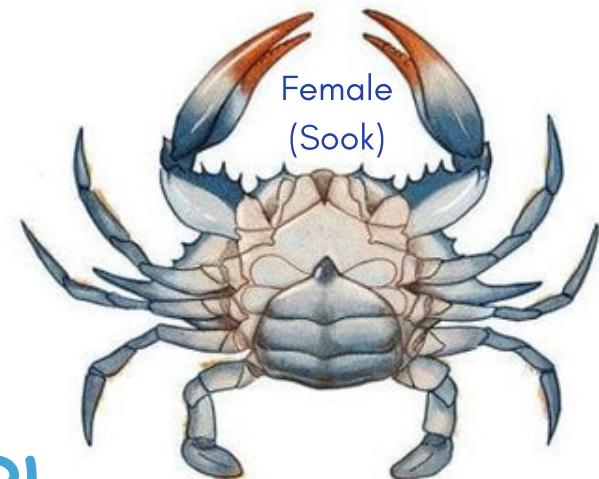
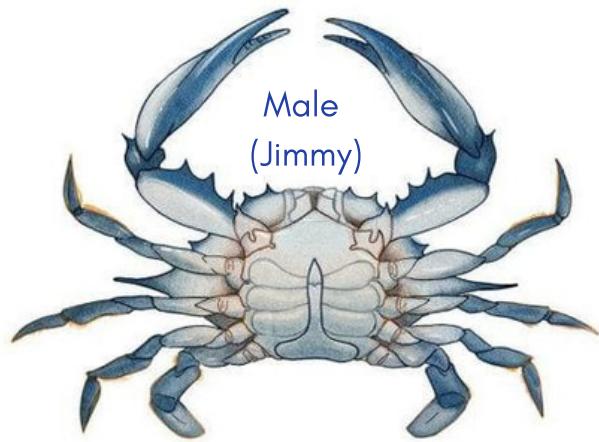
THE CHESAPEAKE BAY BLUE CRAB

The Chesapeake Bay blue crabs, scientific name *Callinectes sapidus*, live up and down the Atlantic Coast and are popular for commercial fishing. Males are called "Jimmies" and females are called "Sallies" or "Sooks", depending on their maturity.

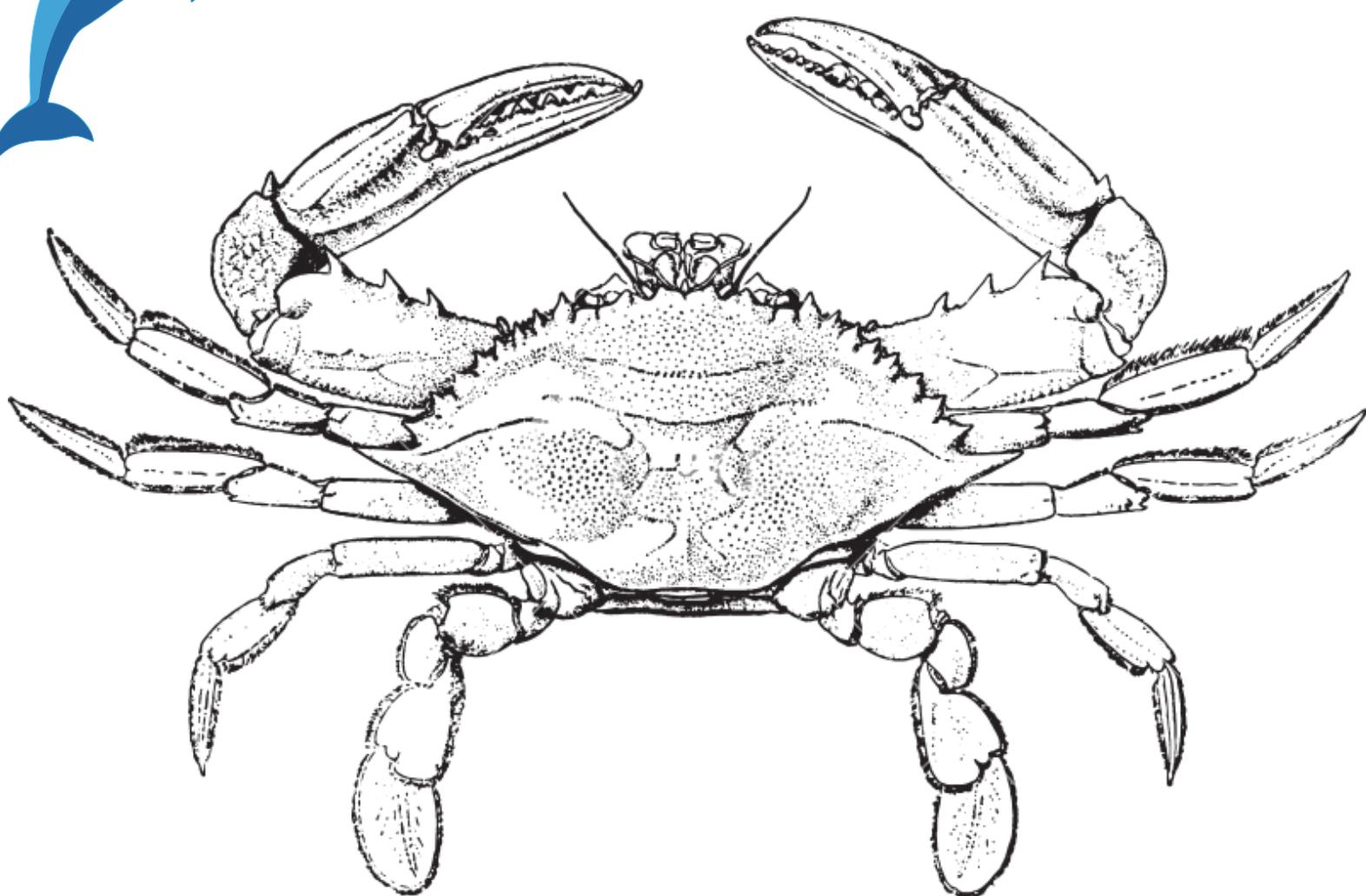
You can tell males and females apart by looking at their apron, or the bottom part of their shell.

Jimmy aprons look like the Washington Monument, while Sook aprons look like the Capitol Building.

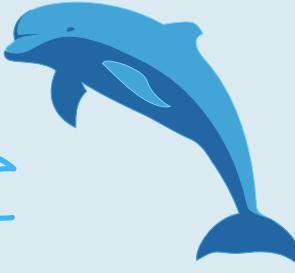
Females also display bright red claw tips, similar to painted finger nails!



COLOR YOUR OWN CRAB!



SAVE OUR PLANET



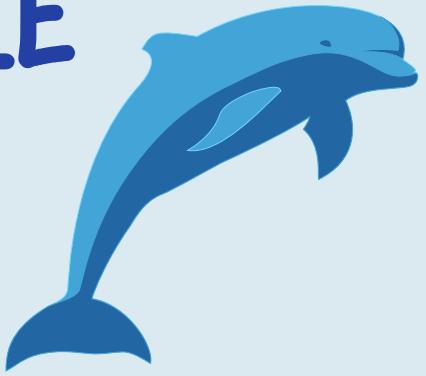
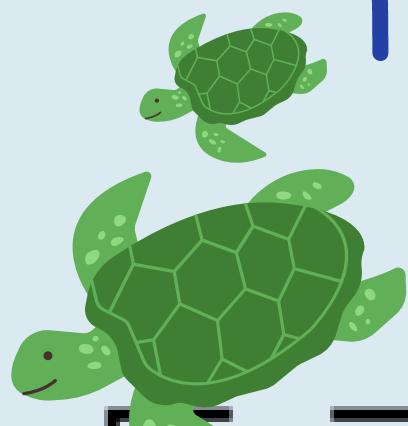
BINGO!



AN ENVIRONMENTAL STEWARD IS SOMEONE WHO TAKES CARE OF THE PLANET. DO YOUR PART IN KEEPING EARTH CLEAN BY COMPLETING THE STEWARDSHIP ACTIVITIES BELOW!

Pick up 5 pieces of trash	Use a reusable water bottle	Go to an interpretive program at the park	Start a nature journal
Turn off the lights when you leave a room	Recycle a plastic bottle	Spend an hour outside without any devices	Find 3 native animals in the park
Walk or bike instead of driving a car	Turn off the water while brushing your teeth	Plant native flowers at your house	Go stargazing
Participate in a beach clean up	Reuse a plastic bag instead of throwing it away	Read a book about the Earth	Reduce food waste

TURTLE TROUBLE



Complete the maze to help
the Sea Turtles swim safely
past the pollution to the
beach!



OYSTERS

INTRODUCTION

Scientific Name: *Crassostrea virginica*

Common Name: Eastern Oyster
(aka American or Virginia Oyster)

Location and Habitat: Brackish to salty waters that are 8-35 feet deep, along firm surface areas and typically attached to other oysters.

THE BASICS

Oysters are **bivalves**, meaning two shells cover their body. They are also a **mollusk**, which is a phylum of **invertebrates** (organisms without a backbone) that encompasses soft bodied animals that typically grow an external or internal shell.

Oysters are filter feeders that primarily eat plankton by pumping water through their gills.

Oysters reproduce in the early summer, spawning about 100 million eggs each year. It only takes 24 hours for the eggs to develop into larvae!

Oyster larvae takes 2-3 weeks to develop a foot, which allows them to move and settle onto the surface where they will mature. Once they have secreted a substance to secure them into place, they are considered

spat.

Facts about the Chesapeake Bay's Natural Filter

A KEYSTONE SPECIES

Oysters act as a natural filter for the Chesapeake Bay. An adult can filter up to 50 gallons a day. In the past, the oyster population was able to filter the entire Bay in the span of a week. Today, it would take over a year to filter all the water in the Bay.

Because of their critical role in keeping the Chesapeake Bay healthy, they are considered both a **keystone** and **indicator** species. Lower oyster populations indicates lower water quality, thereby negatively affecting several other species.

FUN FACTS

An adult oyster can filter up to 50 gallons of water a day.

The oyster reefs in the Chesapeake Bay were once so large that they were hazardous for arriving ships.

Oyster reefs are able to provide habitat for hundreds of aquatic animal species as well as protect shorelines from natural disasters and erosion.



HOME SWEET HOME

Habitat: *noun*; the place or environment where a plant or animal naturally or normally lives and grows.

Draw a line between the animal and its habitat!



EASTERN GRAY SQUIRREL



BIRD NEST



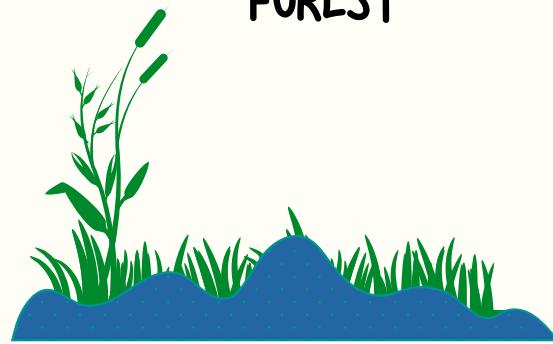
VIRGINIA OYSTER



OSPREY



FOREST



TIDAL SALT MARSH

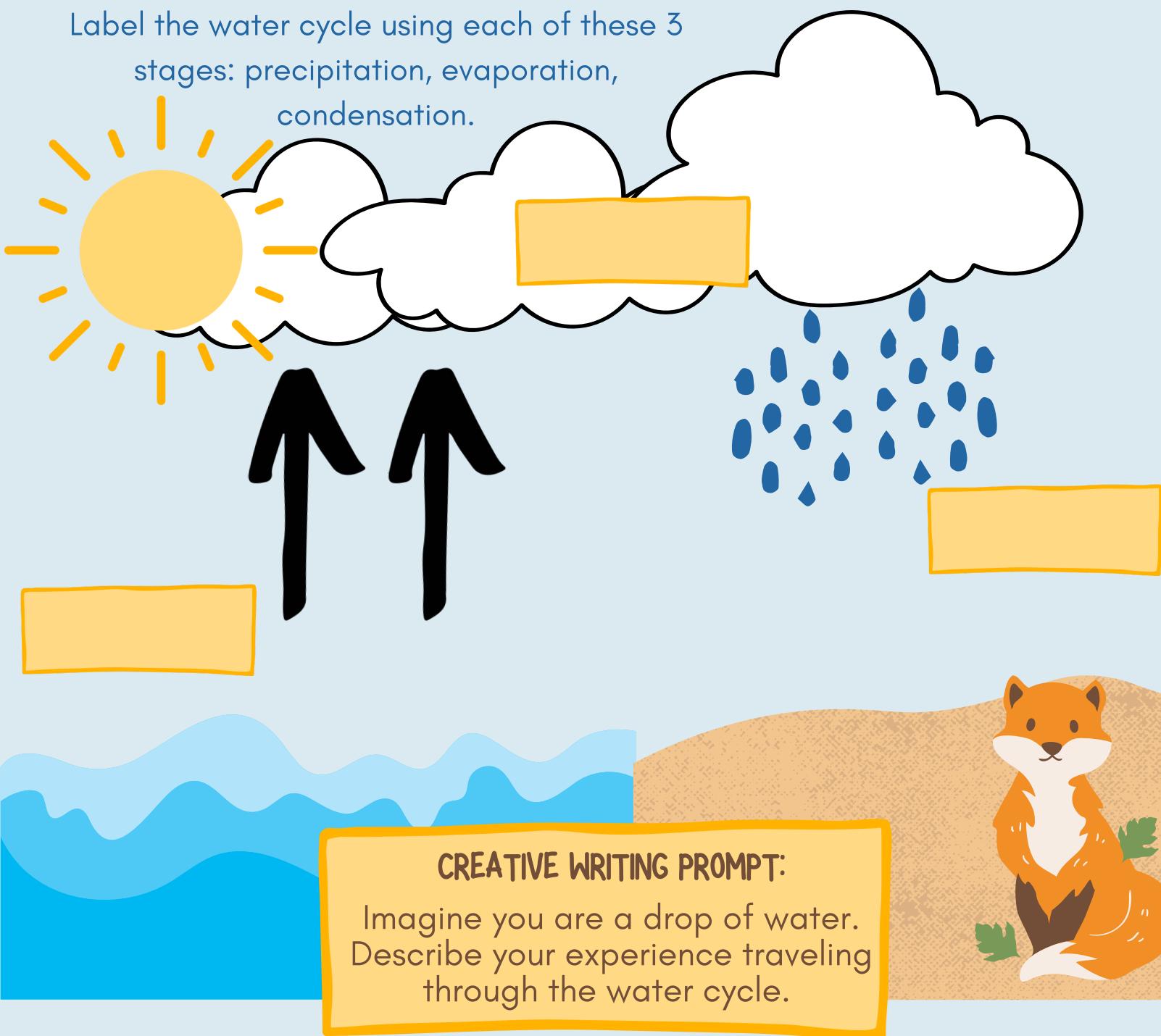
Several iconic Chesapeake Bay species, such as the Virginia Oyster and Osprey, live in or near the tidal marshes at First Landing State Park. These animals, and many others, depend on the brackish aquatic environment found along The Narrows. You can visit this area of the park at our 64th Street entrance to see them for yourself!



THE WATER CYCLE

Label the water cycle using each of these 3

stages: precipitation, evaporation,
condensation.



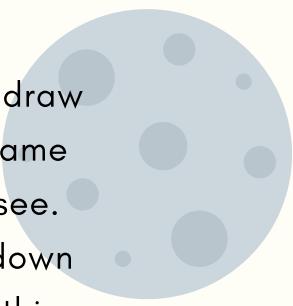
Evaporation takes place as the sun warms the liquid water, turning it into a gas known as water vapor.

Condensation occurs as the water vapor rises into the atmosphere and cools down, forming clouds.

Precipitation is when rain or snow falls back to the ground.

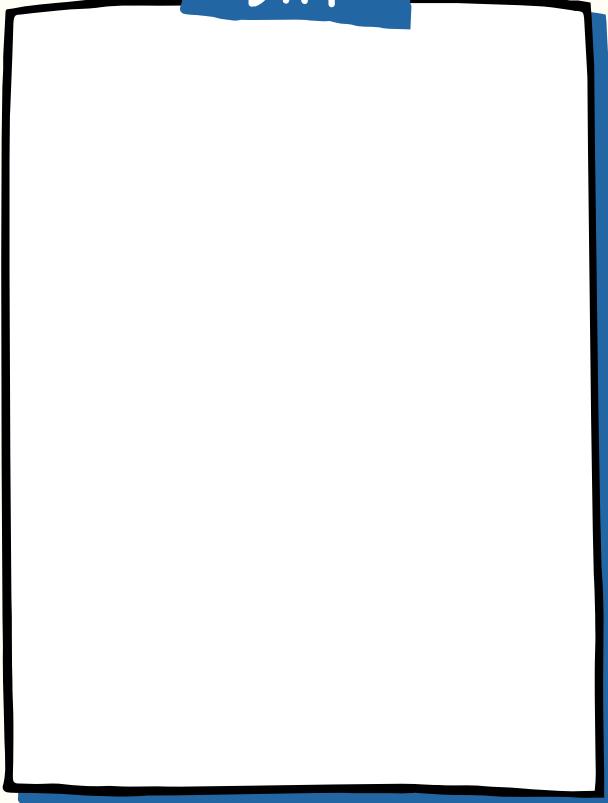


MY SKY DIARY

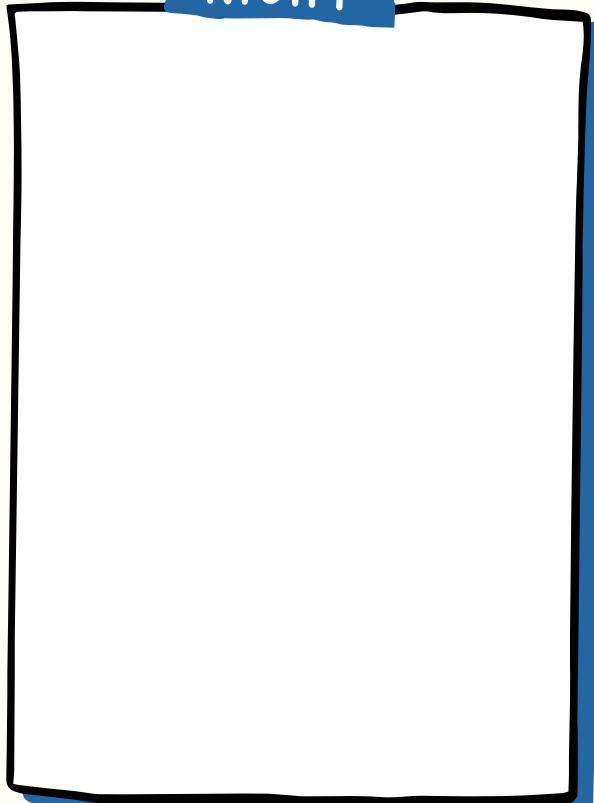


Sit outside during the daytime and draw what you see. Come back to the same spot at night and draw what you see. Compare your drawings, then list down what things are the same and what things are different.

DAY

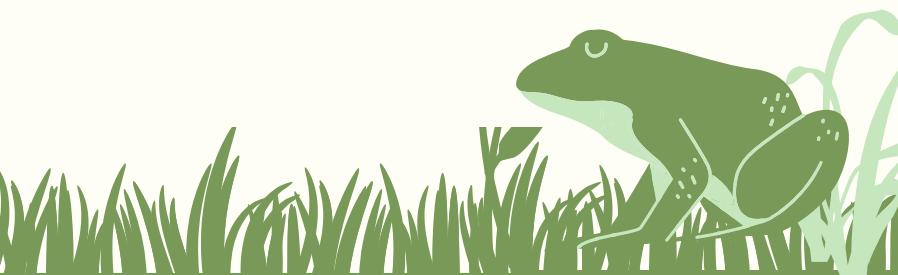


NIGHT



SIMILARITIES

DIFFERENCES



THE SCIENTIFIC METHOD

Ask a Question

Ask a question and research something that interests you



Create a Hypothesis

Make an educated, testable guess to answer your question



Conduct an Experiment

Develop and perform a procedure to test your hypothesis



Record the Data

Record the results and any observations from your experiment



Analyze the Results

Review and examine data



Draw a Conclusion

Compare your hypothesis to the result of the experiment



CREATE YOUR OWN EXPERIMENT

Design and perform your own experiment to learn more about the world around you.

What Are You
Curious About?

Hypothesis:

Describe Your Experiment

Results and Observations

What Did You Discover From Your Results?

Was Your Hypothesis Correct?



PHOTOSYNTHESIS



Photosynthesis is the process where plants transform light energy into chemical energy. Plants use this energy to make their own food. The light energy they captured is used to convert carbon dioxide, water, and minerals into oxygen.

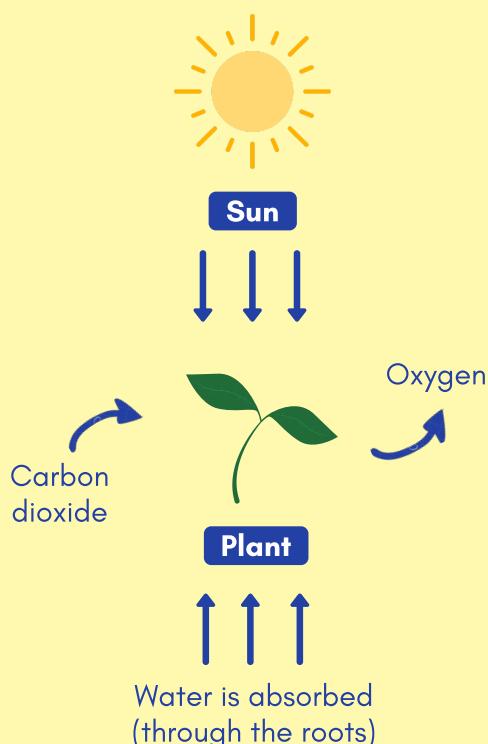
Chlorophyll

The pigment that gives plants their green color and helps in the process of photosynthesis.

Did you know?

Fall colors are actually present in leaves all year long! Chlorophyll's green pigment masks other hues.

When the seasons change,
chlorophyll production slows down
and the green fades - revealing a
leaf's true colors.



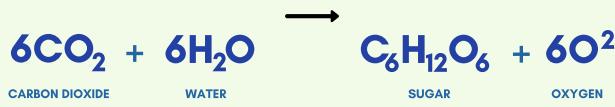
The Photosynthesis Process

Plants take in water and carbon dioxide and use energy from the sun to turn them into food.

Within the plant cell, water is oxidized, loses electrons, and is changed into oxygen. Carbon dioxide is reduced, gains electrons, and turns into glucose.

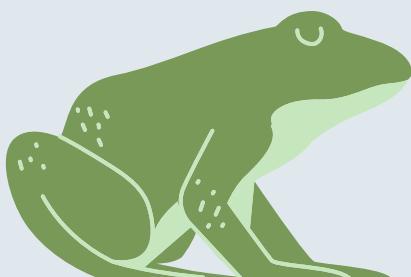
Oxygen is released, and glucose is stored within the plant as energy.

The Photosynthesis Formula



LABEL THE PARTS OF A FLOWER!

Directions: Fill in the labels to name each part of the plant.



WORD BANK:
STEM, LEAVES, PETALS, ROOTS, SOIL

THE BALD CYPRESS SWAMPS

How were they formed?

The swamps were formed in low lying areas between ancient sand dunes, known as "swales". These swales filled with rainwater over time, which attracted plants and animals, and slowly developed into the swamps we see today.

Why is the water brown?

When the deciduous bald cypress trees drop their leaves into the water each winter they release tannins, just like those found in tea leaves, turning the water brown. Despite its dark color, this water is cleaner than it looks.

Fun Fact:

Bald cypress trees can grow to be over 1,000 years old!



How do bald cypress trees grow out of the water?

Bald cypress trees have some adaptations that allow them to grow from the water and deep mud underneath. They have an extra wide base to support them, and their roots come out of the water forming small knobs known as "knees", theorized by scientists to provide extra stability.

Think about it: How might the bald cypress swamps have been important to past populations in the area, such as the Native Americans, the colonists, and pirates?



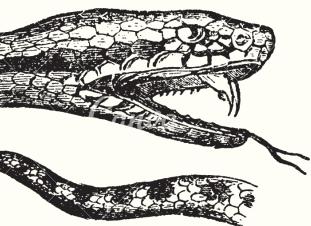
SNAKE PARTY!



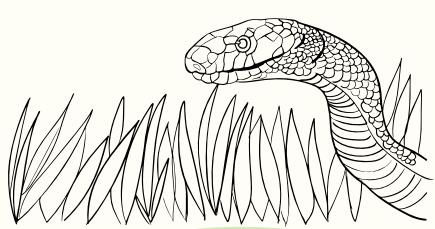
Figure out how many snakes are in the party.

All snakes are an important part of the natural world, especially in the swamps and forests of First Landing. If you encounter a snake in the park, **remain calm**. Snakes will not attack unless provoked. A good rule to remember is to **give snakes their space**. Simply walk around the snake or turn back on the trail. Some hikers may choose to take picture from a distance to identify later by using a trail guide or asking a Ranger.

Venomous



Non-Venomous



Did you know that snakes are NOT called poisonous?

They are either venomous or non-venomous.

How to tell the difference:

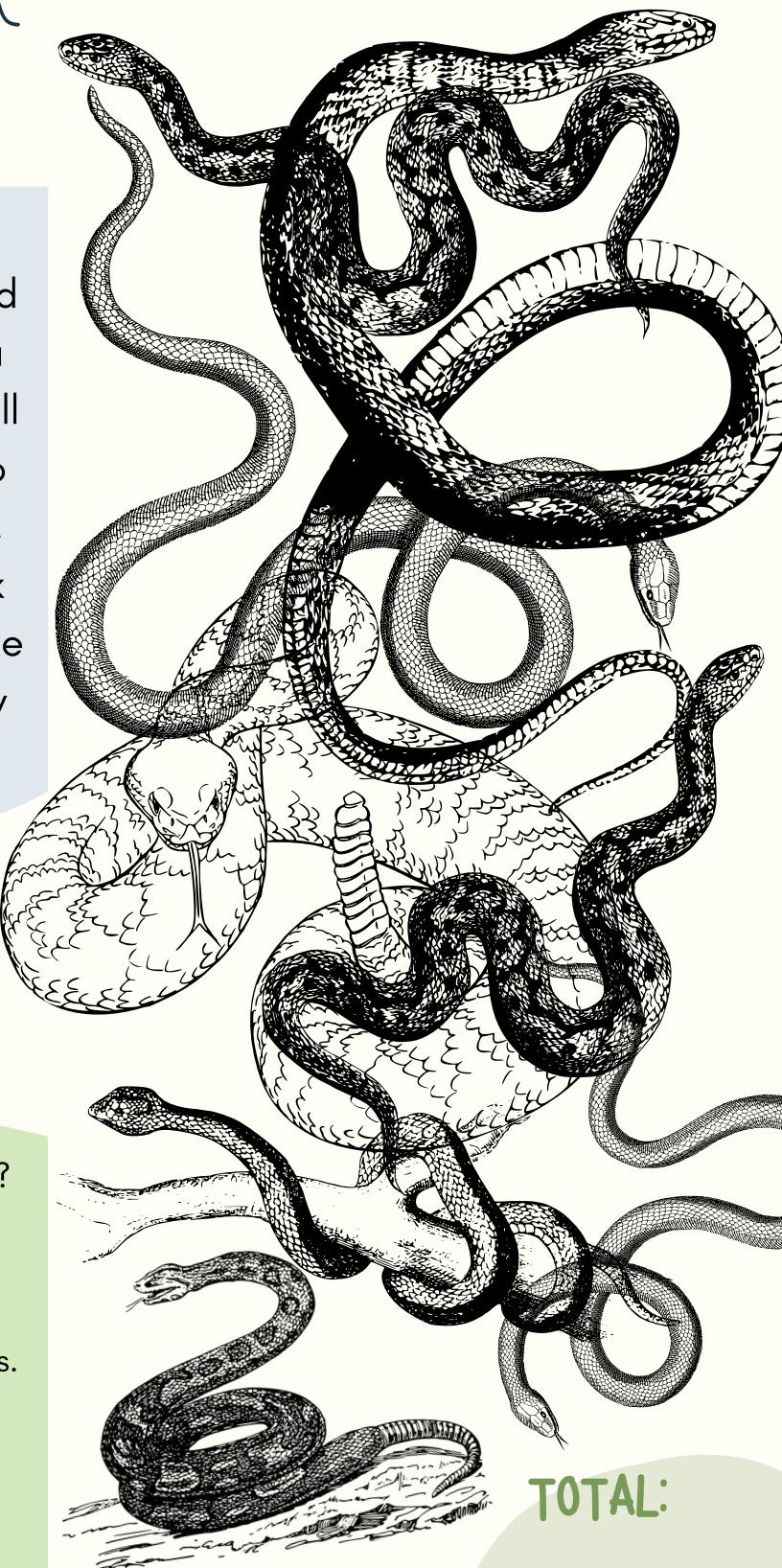
Scale Pattern - These differ greatly between species.

Head Shape - Venomous snakes often display triangular or arrow-shaped heads.

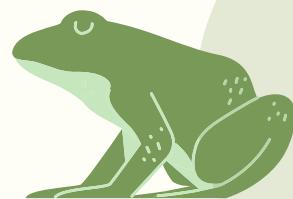
Pupil Shape - Non-Venomous snakes have round pupils, venomous snakes have slit shaped pupils.

The two types of venomous snakes found at First Landing are **Eastern Cottonmouths (Water Moccasin)** and **Northern Copperheads**.

If it *bites* you and you get sick it's *venomous*.
If you *bite* it and you get sick its *poisonous*!

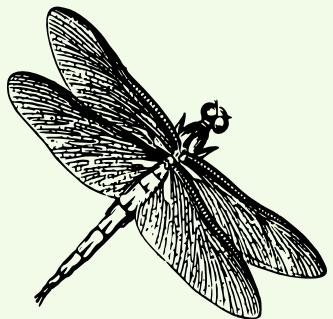


TOTAL:



THE DIVERSE DRAGONFLIES OF FIRST LANDING

Dragonflies are **insects**. This means they have **three body segments** (head, thorax, and abdomen) and **jointed legs**.



The oldest dragonfly relatives were alive **350 million years ago!** These were giant dragonflies and grew much bigger than the ones alive today. Their wingspans could grow over **2 feet long.**

All dragonflies start their life cycles as **nymphs**, which are fully aquatic. This makes the swamps and marshes at First Landing a perfect home while they grow.

Take some time to search for dragonflies around the park! They are all around us.

Dragonflies come in all different colors and sizes. Some of them are even appear metallic or iridescent.

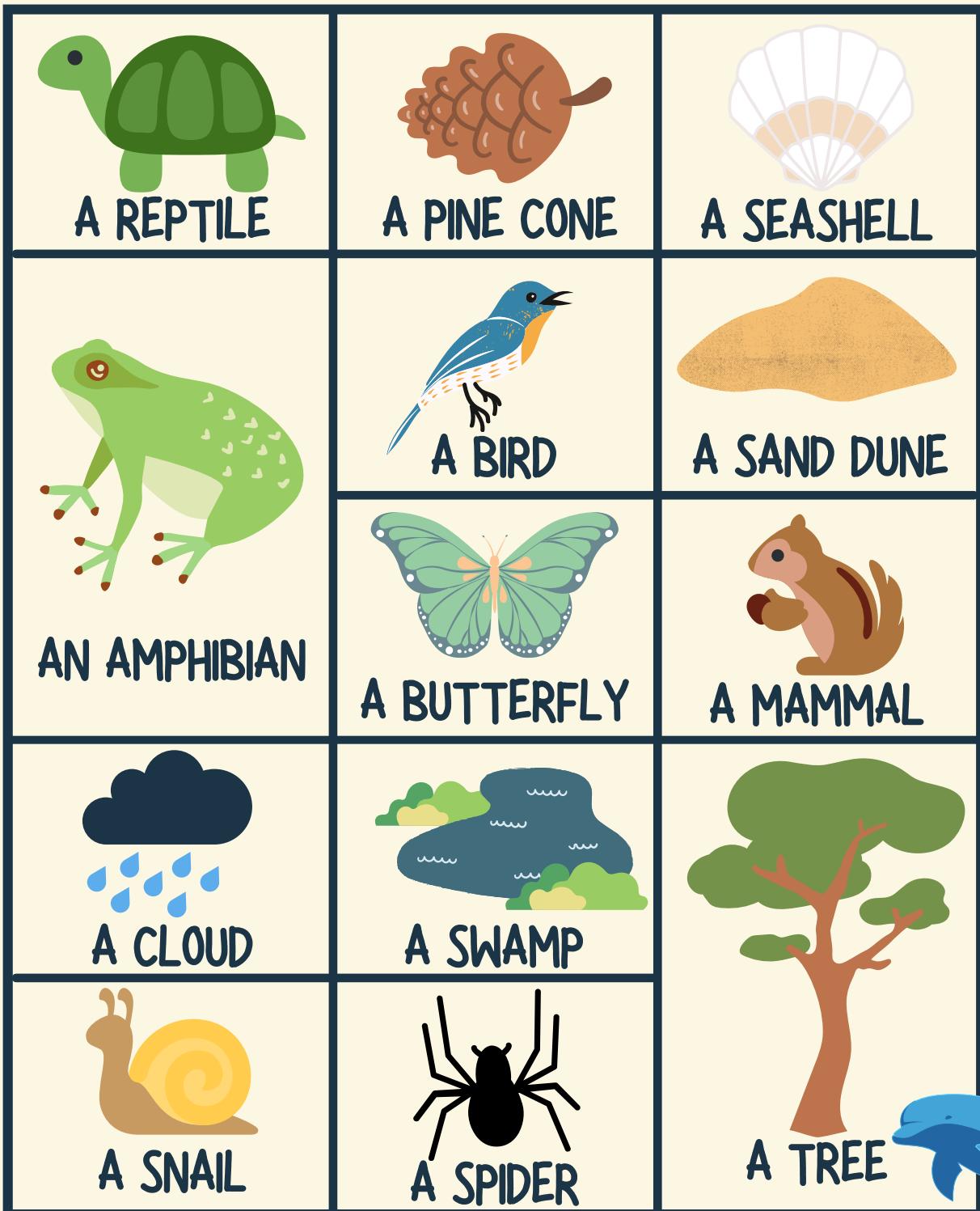


How many did you find? _____

Where did you find the most? _____

NATURE SCAVENGER HUNT

Circle each item as you spot it!



TAKE THE PLEDGE!

I Junior Ranger, _____,
promise to:

1. Respect and protect natural, historical, and cultural resources.
2. Reduce, reuse, and recycle (in that order) to be a good steward of the planet.
3. Take nothing but pictures and leave nothing but footprints, when I visit natural spaces.
4. Continue to learn about our environment and share my knowledge with others.



Junior Ranger Signature

Park Ranger Signature

JUNIOR RANGER

This certifies that

has completed enough activities for

and is granted the title of

**JUNIOR RANGER OF FIRST
LANDING STATE PARK**

on this day of

JUNIOR RANGER SIGNATURE

PARK RANGER SIGNATURE

