

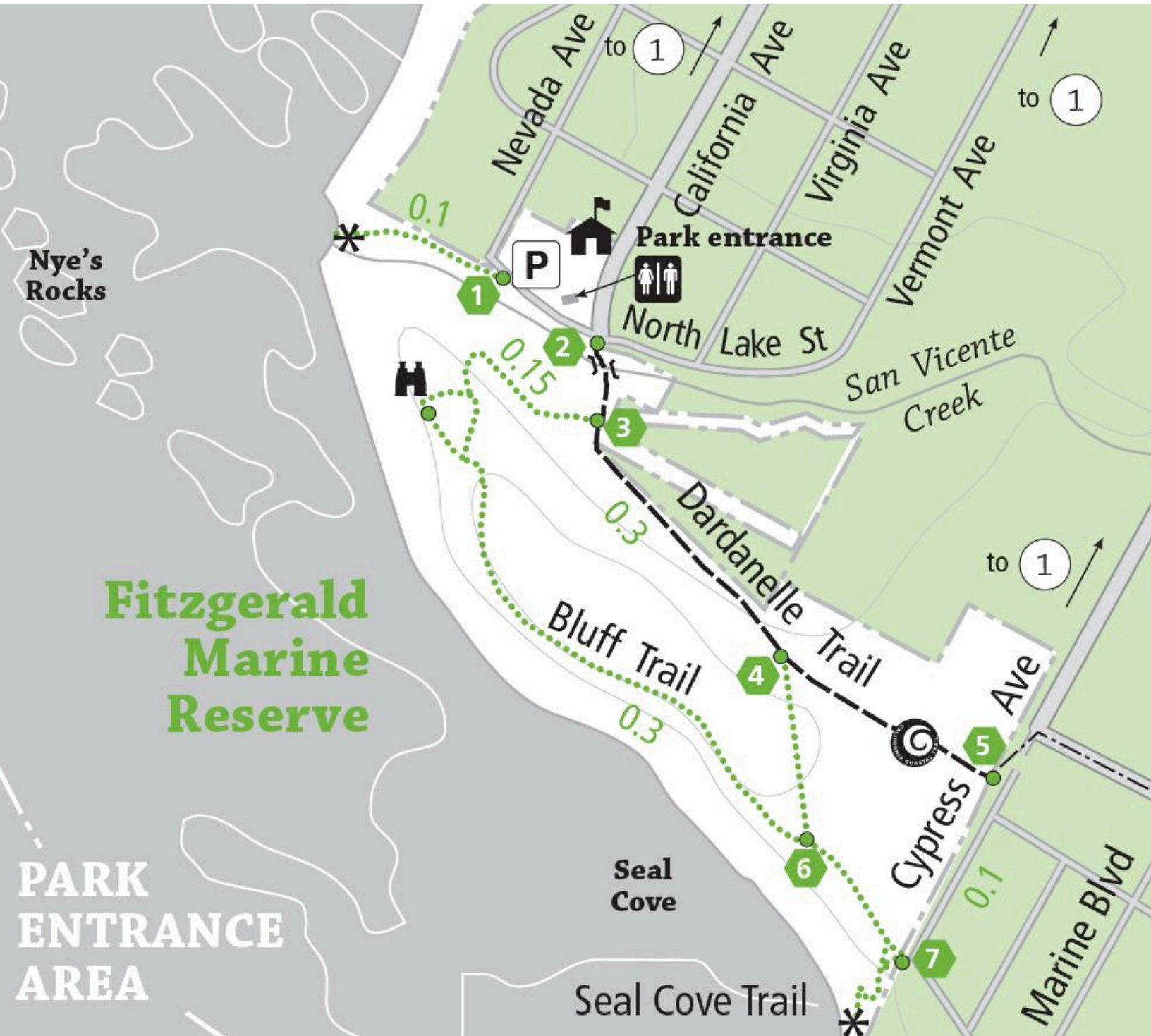


FITZGERALD MARINE RESERVE

Junior Ranger



Name:





Introduction



Welcome, future Junior Rangers, to San Mateo County's Fitzgerald Marine Reserve! We are so excited for you to explore the amazing flora and fauna that our park provides.

Instructions

To become a Junior Ranger you must:

1

Fill out this booklet as you explore the park! You'll need a pencil or pen, and some coloring materials if you'd like! You don't need to fill out the booklet all in one visit.

2

Once you have finished your booklet, sign your name on page 14 and recite the Junior Ranger Pledge.

3

Return to the Visitor Center and show your completed booklet to a volunteer to receive your prize! OR email photos of your finished packet to us at sanmateocountyparks@gmail.com.

Hi there! My name is Ollie the Black Oystercatcher. I live at Fitzgerald Marine Reserve. Look for my picture for fun facts and tips about my home!





Park Rules & Tidepool Safety



It is important to treat your parks with kindness and respect. As a Junior Ranger, it is your job to understand the rules and make sure your group does the same! Read the rules and safety tips below. **Then look for the underlined words in the word search. Words may be diagonal, across, up & down, forwards, or backwards!**

1. Always keep an eye on the ocean when you are visiting the tidepools.
2. As a protected area, collecting is not allowed. Please leave all rocks, shells, plants, and animals for others to enjoy.
3. Observe with your eyes only - please do not pick up or touch tidepool animals.
4. Wear sturdy, closed-toe shoes and watch your step at the tidepools! Try to step on bare rock when possible and avoid stepping on slippery seaweed.
5. Leave no trace - put all garbage in the bins.
6. Stay with your group when you are at the tidepools or hiking around the Reserve.

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



Why is the Reserve so special?



Fitzgerald Marine Reserve (FMR) is located within a Marine Protected Area (MPA).

Similar to a national or state park on land, an **MPA** is a section of the ocean that is protected, where people are often allowed to visit and explore, but the natural resources are protected. **Marine Reserves**, like Fitzgerald, are a type of MPA with no-take zones, meaning the entire ecosystem is fully protected.

Activity: Cross out the activities that *aren't* allowed at FMR and circle the activities that *are* allowed.



Playing on the beach



Having a bonfire



Fishing



Observing wildlife



Picking flowers



Holding/Moving wildlife



Taking photos



Collecting rocks



Feeding wildlife



Hiking on trail



Eating in the picnic area



Birdwatching



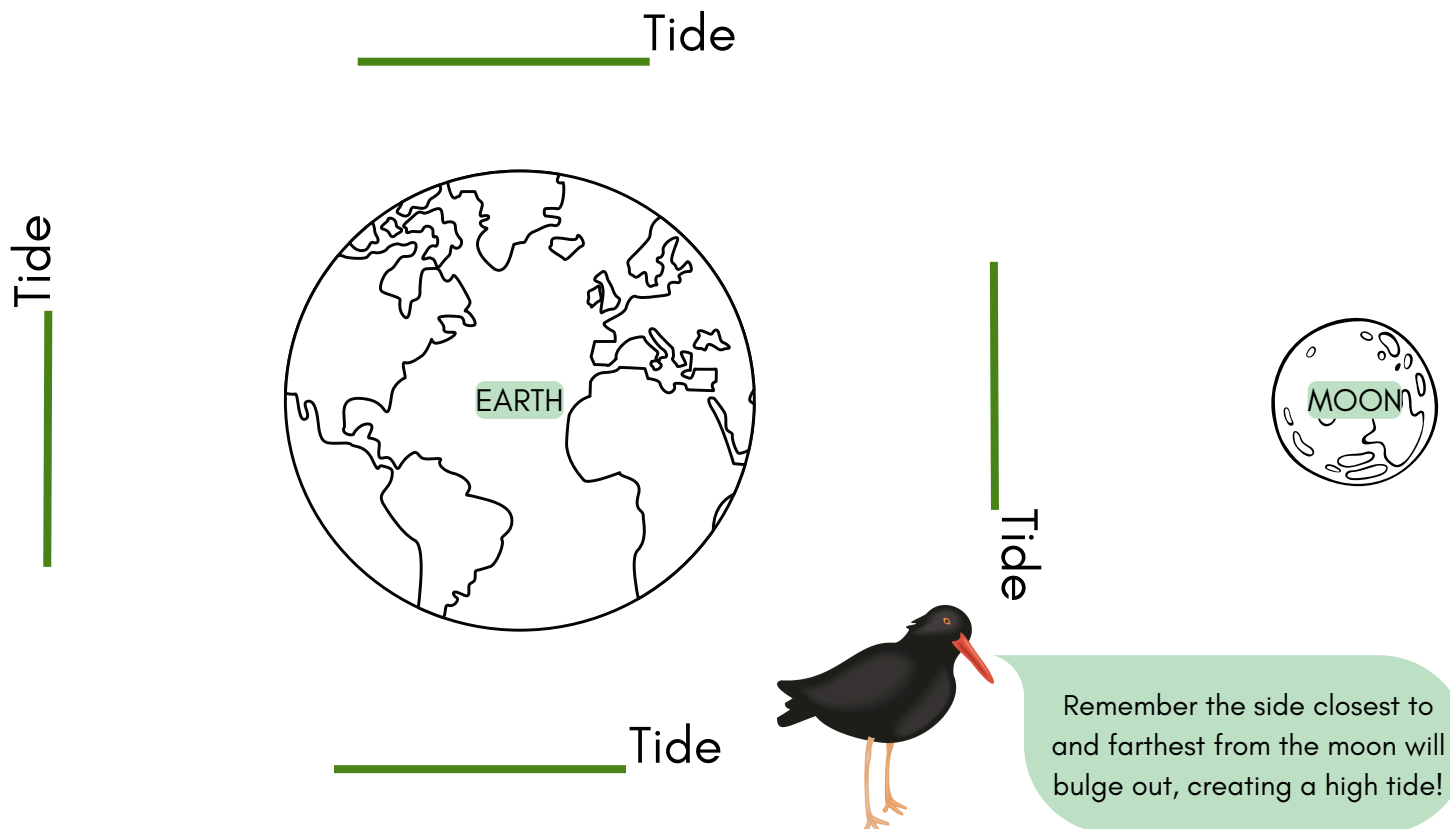
Tides



Why do we have high and low tides at Fitzgerald?

High and low tides are caused by the **moon**. The moon's gravity generates something called tidal force. Tidal force causes Earth – and its water – **to bulge out on the side closest to the moon and the side farthest from the moon**. These bulges of water are high tides. As the Earth rotates each day, different places experience a high tide. We have two high tides and two low tides each day at FMR.

Activity: Using what you learned above, fill out the diagram below. Based on the location of the moon below, mark with an “X” the two sides of the Earth that are experiencing high tides. Then label which tides are high and low.



Intertidal Zones

The **intertidal zone** is the strip of land between the high and low tide. When the tide goes out, small pools of water are left behind in the rocks, creating a place for organisms to survive until the tide returns with more water, oxygen and food. Each organism type prefers to live in a specific Tide Zone.

Activity: Use the clues below to determine which zone each organism lives in. Then draw a line to the correct zone. Color the animals at home!

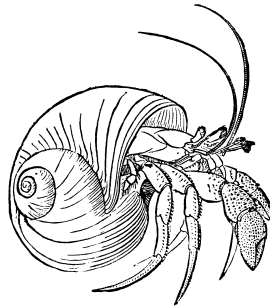
Splash Zone: The high tide rarely reaches this zone. It may only be underwater a few hours each month.

High Tide Zone: This zone is covered during the two daily high tides but is dry for the long stretches in between.

Mid Tide Zone: This zone is where the tides rise and fall over the entire day.

Low Tide Zone: This zone is covered by water all the time, except during the lowest tides.

Hermit Crab



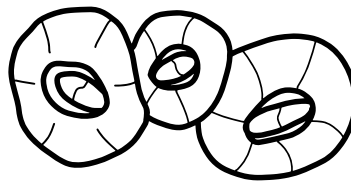
Able to move between tidepools, but often relies on Black Turban Snails, which live in the high tide zone.

Opalescent Nudibranch

This soft-bodied sea slug must stay moist at all times.



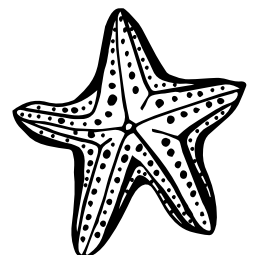
Acorn Barnacle



Can close its shell to trap water, only opening its shell a few hours each month.

Ochre Star

Its soft body requires moisture, but can survive out of water for around 8 hours.



Tidepool Animals

Activity: Fill out the lines below with the correct letter to answer the joke. If you visit the tidepools, put an x in the box of every species you saw! You can color this page at home!

Brown Pelican
My bill's pouch can hold 3 gallons of water

Acorn Barnacle
I trap water inside my hard shell when the tide goes out.

Mossy Chiton
If someone tries to eat me, I can roll into a ball to protect myself.

Ochre Star
I can regrow a missing arm!

Sculpin
I have big fins to help me dart around the tidepools.

Hermit Crab
I have great vision and my antennae help me feel, smell, and taste.

Purple Sea Urchin
My spines prevent me from being eaten.

Limpet
I have a strong muscular foot to hold me tight to the rocks.

Giant Green Anemone
My tentacles stun prey and prevent me from being eaten.

What did the anemone say to the sea urchin?

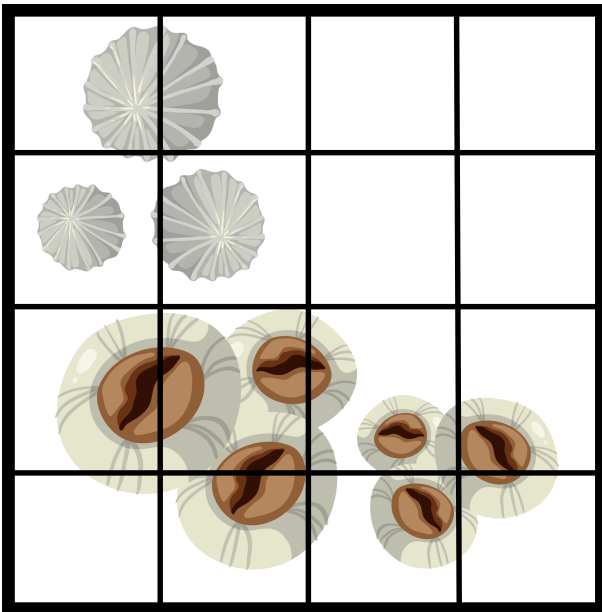
_____ !
 11 5 5 1 6 7 2 8 9 3 4 10

Tidepool Detective

How do Scientists Study Tide Pools?

Quadrats are square frames placed on the tide pools that are used to determine what is living in the intertidal zone. It can give us information on species diversity, population size, and ecosystem health.

Quadrat 1



In Quadrat 1:

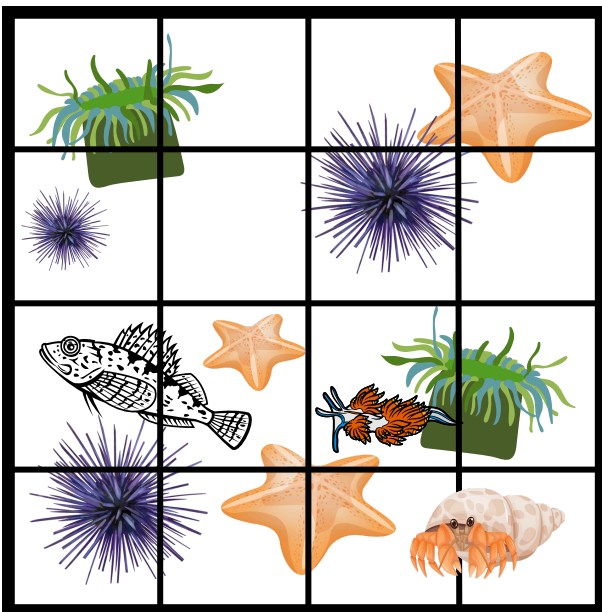
1) How many organisms are present? _____

2) How many different species are present? _____

List the species below:

3) Which Intertidal Zone is this quadrat placed in?

Quadrat 2



In Quadrat 2:

4) How many organisms are present? _____

5) How many different species are present? _____

List them below:

6) Which Intertidal Zone is this quadrat placed in?

7) Which quadrat shows more diversity? Why do you think this is? _____

Bingo

Go for a walk along the Bluff Trail and see if you can find some of the species below. To get a bingo, mark off 4 horizontal, vertical, or diagonal squares in a row.



Brown Pelican



Algae on trees



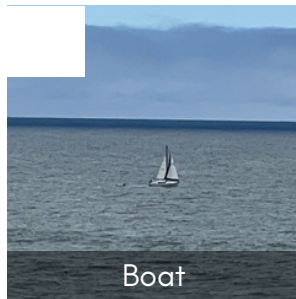
Harbor Seal



Beach Strawberry



Arroyo Willow



Boat



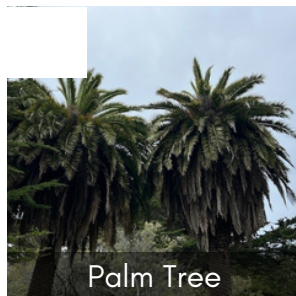
Fern



Gull



WWII Flag Support



Palm Tree



Seed Pods



Nasturtium



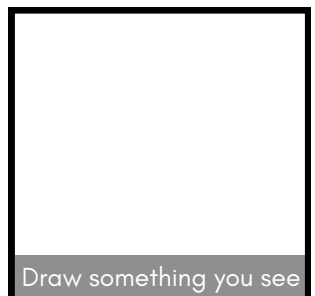
Lace Lichen



Horsetail





Blackberry



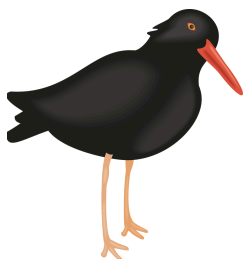
Draw something you see

Mindfulness

Find a place in the park you enjoy and take a seat. In this box, draw or write about your spot. Use four of your senses (sight, touch, hearing, smell).

 <p>I hear...</p>	 <p>I feel...</p>
 <p>I see...</p>	 <p>I smell...</p>

Parks can help us feel calm, happy, and healthy! One way to experience this is through **mindfulness**. This means paying attention to our surroundings & how we are feeling. Write how being in the park made you feel.



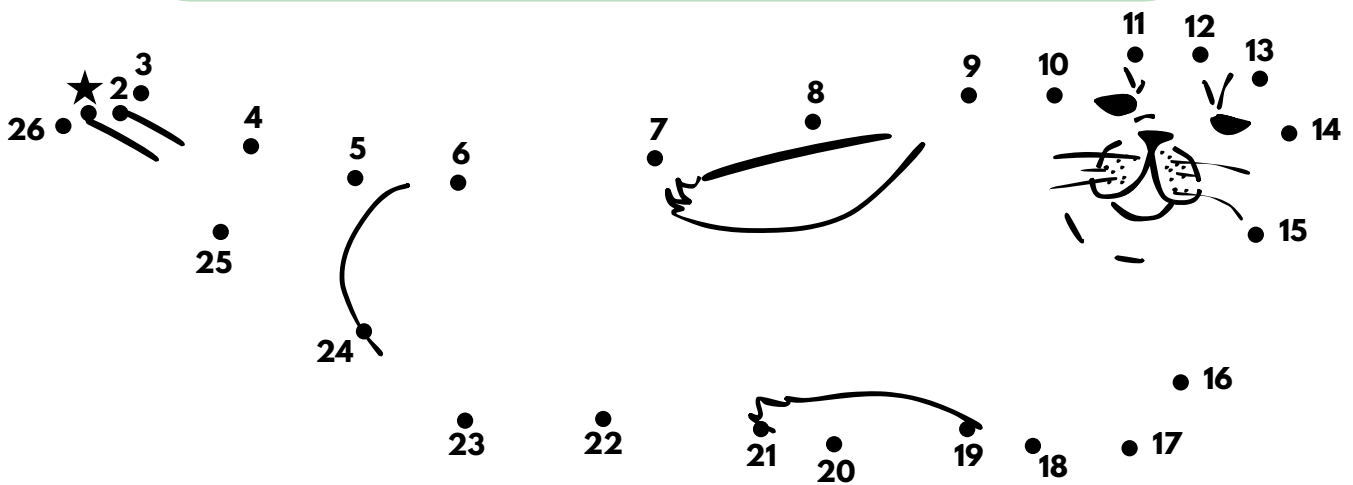
This morning I was feeling _____

After visiting the park, I feel _____

Harbor Seals

A favorite spot for harbor seals is FMR! These adorable seals haul out on the rocks and beaches to rest and escape from predators. During spring, mothers give birth & raise their pups here. Always observe harbor seals from a distance.

Activity 1: Connect the dots to complete the harbor seal picture.
Begin and end at the ★



Activity 2: Draw a line to connect the correct seal body part to its purpose.

Whiskers

keeps the seal warm in cold water

Hindflippers

help the seal navigate and sense its prey

Claws

help the seal grab its prey (fish & squid)

Blubber

allow the seal to swim very fast

Did you know that every harbor seal has a different pattern of **spots** on its fur? Scientists use these patterns to identify different seals. Add in your own spots to the harbor seal's body!



Whales

Whales are common visitors to the coast as they **migrate** each year to find food and give birth. **Migrations** are seasonal movements of animals from one region to another.

Activity: Read the facts about the three whales below. Then, draw the migration route of each whale on the map to the left. Be sure to use a different color or pattern for each line. Label them, too.

Gray Whale

Size: 42-49 feet

Weight: up to 90,000 lbs

Lifespan: 30-70 years

Predators: Orcas

Migration: Spends summers feeding off the coast of Northern Alaska, and travels south to give birth off the coast of Baja California.



What it eats: bottom-dwelling crustaceans

Humpback Whale

Size: 49-52 feet

Weight: 50,000 - 80,000 lbs

Lifespan: 45-50 years

What it eats: Krill & Small Fish

Predators: Orcas

Migration: Spends summers feeding off the coast of Northern U.S., then travels south to Baja California for the winter.



Blue Whale

Size: 80-100 feet

Weight: 290,000 - 330,000 lbs

Lifespan: 80-90 years

What it eats: Krill

Predators: Orcas

Migration: Spends summers in the Gulf of Alaska, then travels south to Mexico and the Gulf of California to raise calves.





Tidepool Research



Let's learn more about your favorite tidepool animal! Either **ask a volunteer** at the Visitor Center for help (if open) or **research your animal online!**

My favorite tidepool animal is: _____

My animal lives in the (circle the right answer):

Splash Zone High-tide Zone Mid-tide Zone Low-tide Zone

My animal eats: _____

Does your animal have any predators? What are they? _____

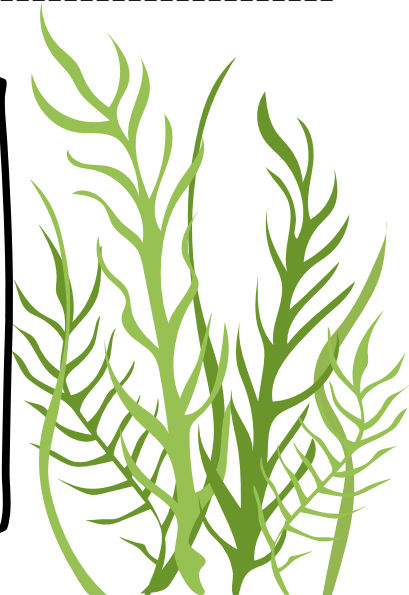
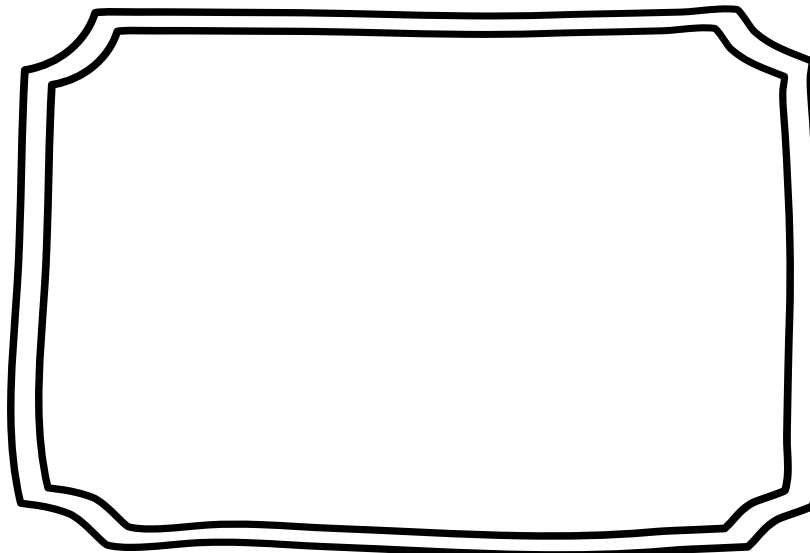
What are two adaptations your animal has for living in the tidepools?
(Hint: think about what it does during low tide and high tide to survive).

1) _____

2) _____

This is my favorite tidepool animal because: _____

Draw a picture or write a poem about your favorite tidepool animal.





Pledge



Congratulations!

You have completed the activities needed to be a Fitzgerald Marine Reserve Junior Ranger! Being a Junior Ranger is fun, but there are responsibilities. You now must take the Junior Ranger Pledge. Sign your name on the line, then recite this pledge to become a Junior Ranger! Turn in your finished booklet to the Visitor Center, or via email, to receive your prize!

"I, _____ promise to help take care of the parks! I will abide by the Leave No Trace principles and respect the plants and wildlife. I will continue to explore and learn more about nature and history and share my discoveries with others. I will encourage my family and friends to help protect the Fitzgerald Marine Reserve and all of its natural resources."

Come visit again soon!



JR. Ranger





Explore other County Parks and earn more pins at:

Complete all 5
Junior Ranger
booklets to earn a
special gold
badge!

This park is known for its
beautiful wildflowers!



Education Center Hours: Saturdays
and Sundays 9:30am-4pm,
Wednesdays 9:30am-12:30pm

Learn about our oldest County park
as you explore the redwoods!



Visitor Center Hours: Friday to
Sunday 10am-4pm,
Memorial Day to Labor Day

You are likely to see lots of wildlife
at this spectacular county park!



Visitor Center Hours: Saturdays
and Sundays 10am-4pm

If you like horses, you'll love
Wunderlich County Park!



Carriage Museum Hours: Saturdays
and Sundays 12-3pm

Visiting a park when the Visitor Center is closed?

Download and print a booklet from our website: www.smcgov.org/parks

Click on the 'Things to Do' tab.