



Salt Water - Fresh Water

Students observe the difference between salt and fresh water and discuss how plants and animals live in one or the other.

Talk about salt water and fresh water. Fresh water is water without salt in it, not necessarily *clean* water.

Let your students observe tap water. They can look at it, smell it, taste it. Then let them make salt water by adding 1 teaspoon of salt to 1 cup of fresh water (the approximate amount in ocean water). If the salt is dissolved, the two should look and smell the same.

Place a small amount of salt water (maybe collected from a nearby beach) in a shallow dish. Let the water evaporate and observe the salt crystals left behind. Even though we can't see dissolved salt, we know it's there!

Make two lists on the board: one of plants and animals that your students think might live in fresh water and one of plants and animals that might live in salt water. Can they think of any that live in both? Most plants and animals are specially adapted to live in either salt water or fresh water, seldom both.

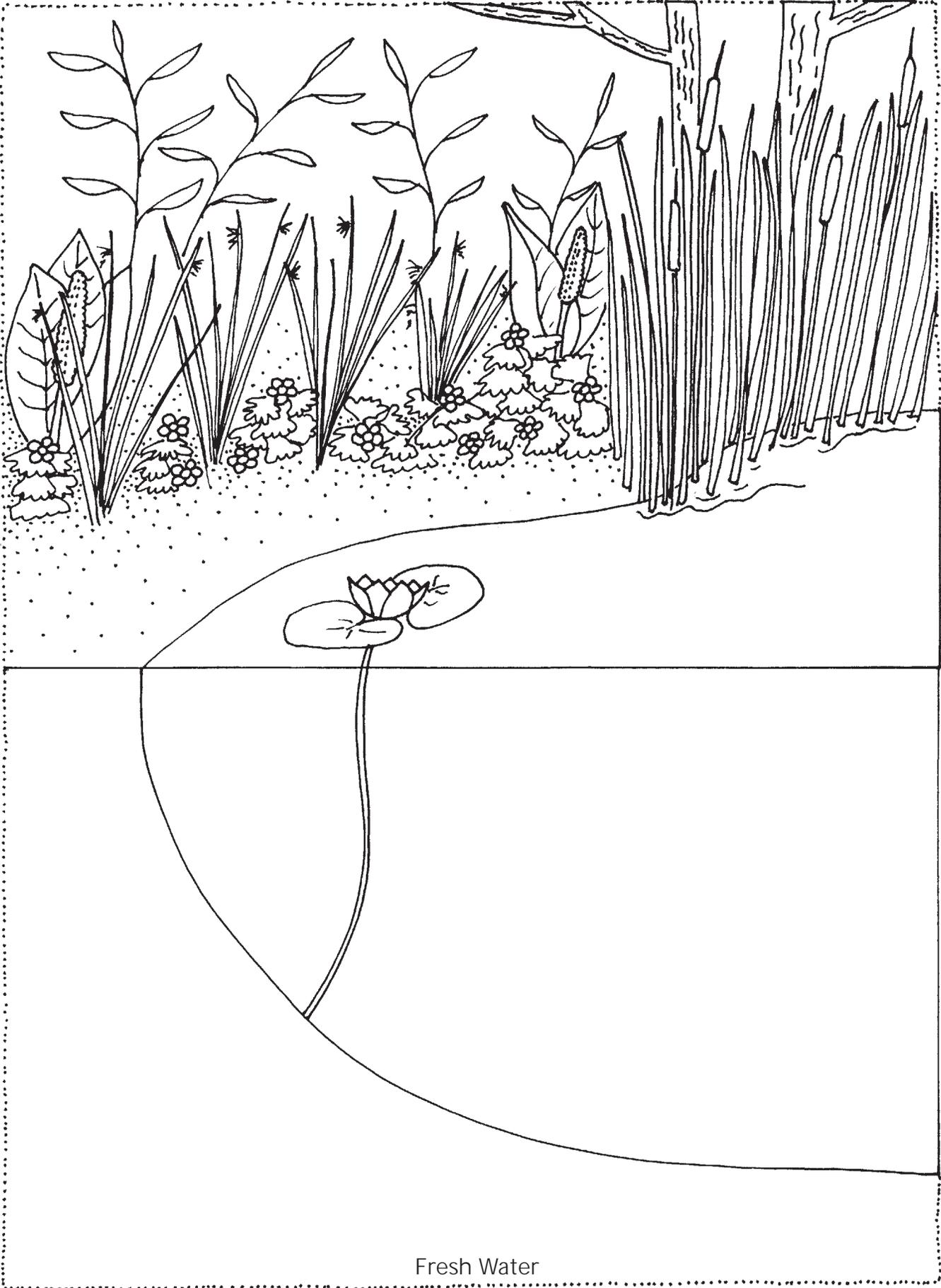
Copy the two wetland habitat pictures and let your students draw and color in animals in their appropriate home. Here's a list to get them started:

Freshwater wetland

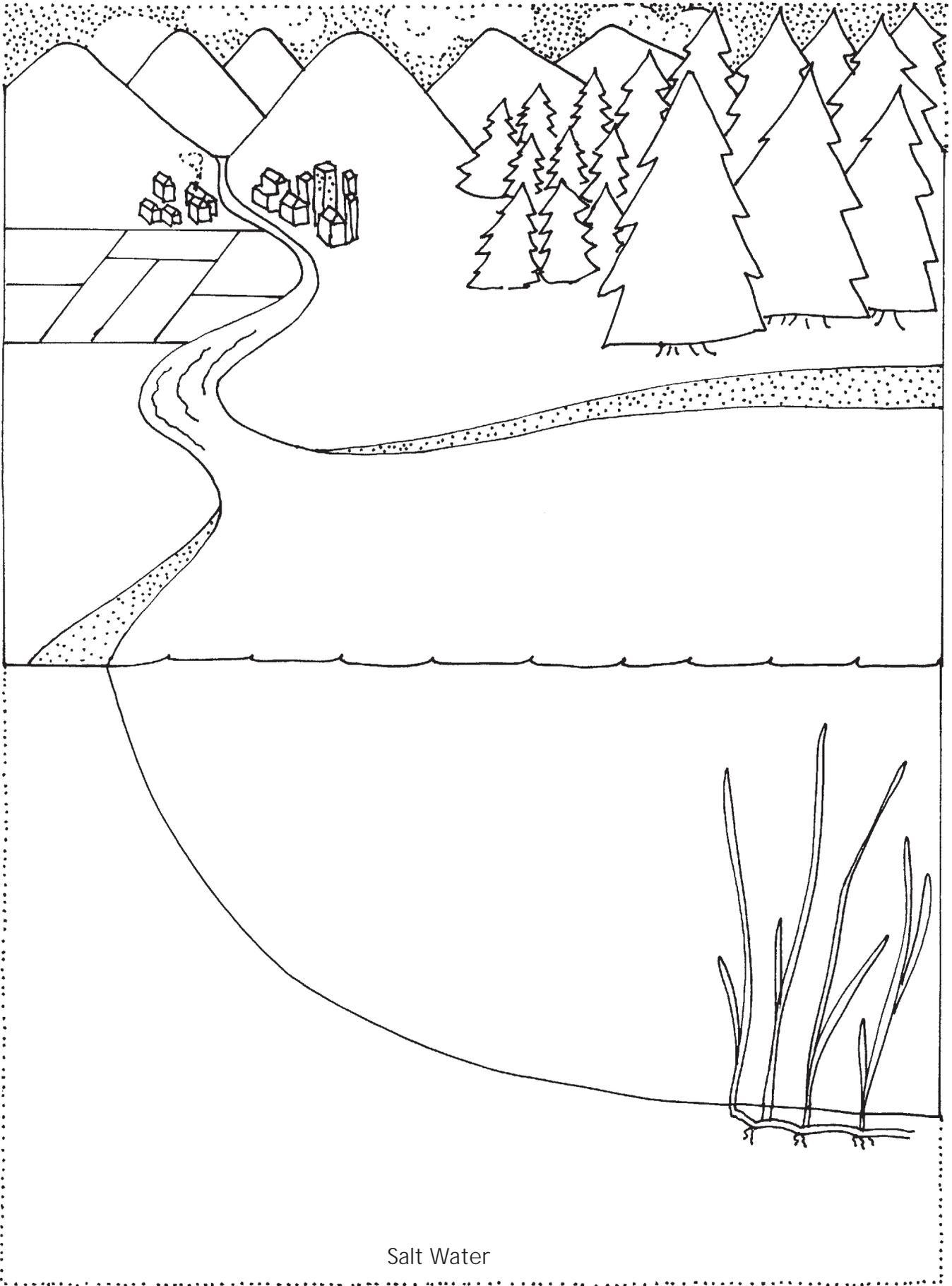
cattails
duckweed
frog (and tadpoles)
skunk cabbage
water lily
fish
salamander
turtle
snake
dragonfly
crayfish
snail
great blue heron
salmon eggs

Saltwater wetland (estuary)

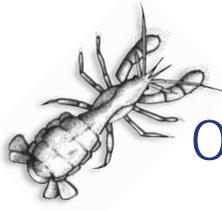
algae
eelgrass
saltgrass
crab
snail
worm
clam
shrimp
fish
seastar
hermit crab
great blue heron
salmon smolt



Fresh Water



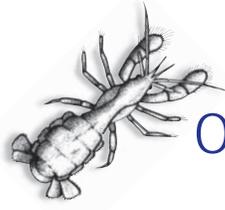
Salt Water



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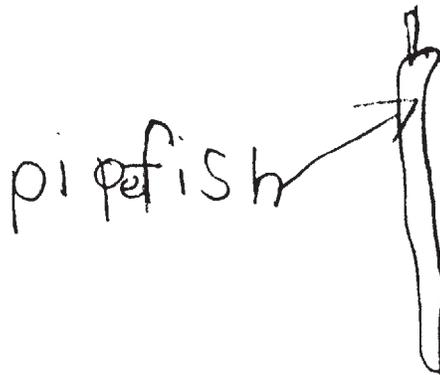


On Site

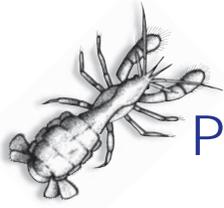
We will welcome your class at the Interpretive Center entrance. A presentation in the theater will introduce the world of the estuary through stories, creative dramatics and film. Your group will then tour the interpretive exhibits. The main exhibit room presents the Padilla Bay estuary through interactive displays, maps, larger-than-life illustrations, models, and more. The Hands On Room offers games, puzzles, books, puppets, and estuary treasures for touching. The Aquarium Room contains saltwater aquaria with live animals and plants from the Bay.

Many teachers choose to follow up the Padilla Bay visit with a trip to the beach at Bay View State Park. On pages 34-38, we have included some suggestions and resources that may be useful to you.

Please be sure to share the appropriate Parents' Pages with adult volunteers. They will be in charge of their group during the exhibit tour. We believe that students benefit more from this field trip when leaders have guidelines and suggestions for focusing the group's attention.



by Brandi Carlson



Parent Page

Thank you for joining us today. This program could not happen without you. We especially need your help when the children are touring the interpretive exhibits.

You will be in charge of a group of students. Please keep them together and focused. If your group needs help staying focused, ask questions like those below. The more you get involved, the more your group will follow suit.

Aquarium Room

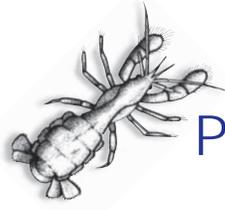
1. Many fish are CAMOUFLAGED. Look for a fish that resembles eelgrass (pipefish) and one that looks like the sand (flounder).
2. Other animals HIDE. Are any squeezed between rocks or buried under the sand?
3. How many animals can you find that have hard SHELLS on the outside of their bodies? How does this help them survive?
4. Name 3 differences between you and a fish.
5. What is your favorite animal in the aquaria and why?

Main Exhibit Room

1. Remind students to handle the exhibits gently.
2. Help your group read the exhibit panels to understand how the interactive elements work.
3. Look for the big yellow question marks and try to answer each question before checking the answer.

Hands-On Room

Though this room needs less direction, please supervise behavior and remind children to be gentle with the exhibits.



Parent Page

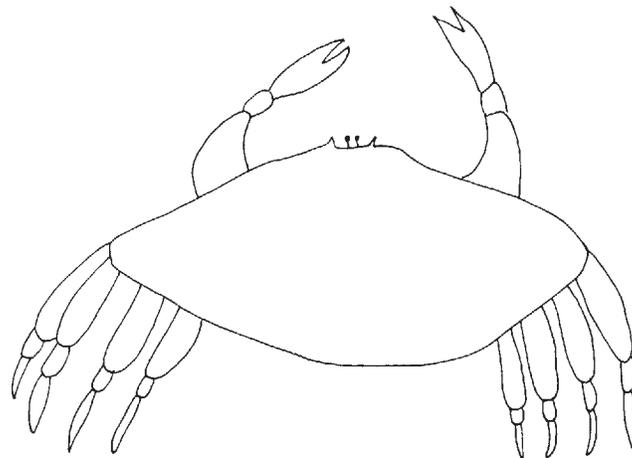
Exploring the Beach

You say you don't know the name of that crab? What in the world is that slimy green thing? You're not a marine biologist? Don't worry! Knowing everything at the beach is not what this trip is about. It's about sharing your enthusiasm, watching the excitement and curiosity of children, and exploring with them.

When your group brings something to you and asks, "What is this?" the name is not important. In fact, giving the name may just turn off attention. Rather than answering children's questions, you'll find it much more interesting to return a question. "Where did you find it? What do you think those feathery things are? Do you think it's alive? Which is the front? Does it have a head? Shall we give it a name?" Open-ended, stimulating questions involve the children and encourage discovery.

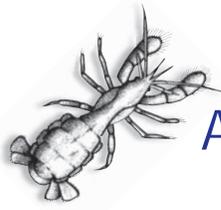
Ouch! Ouch! Be the voice of the plants and animals when students, in their eagerness, get careless. Try to impart an ethic of care and responsibility. Be sure that students return everything they find at the beach. Help by picking up any garbage you may find. Your example is very important!

Please help us keep the State Park facilities clean by checking restrooms and picnic shelter for litter.



Crab
(Yum)

by
Stephanie



At the Beach

Be prepared! Warm clothing (hats and gloves), rain gear, snug boots or old shoes that tie, a change of clothing, and a hearty lunch will help ensure that your class enjoys the day in spite of cool or rainy weather. Check the school's lost and found for items you could borrow for the day.

Study the map of Bay View State Park and, if possible, visit the site ahead of time. Notice rest rooms, telephone, and faucets for cleanup.



We find the following equipment useful when exploring the mud flat (one set for 5-8 people):

shovel (if tide is lower than +4')

tray (plastic dissecting trays or styrofoam meat trays—please don't leave these behind!)

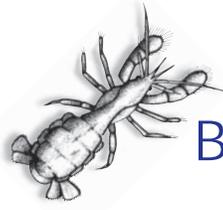
clear plastic jar or cup for keeping animals in water

plastic spoons for picking up small creatures—or use a clam shell

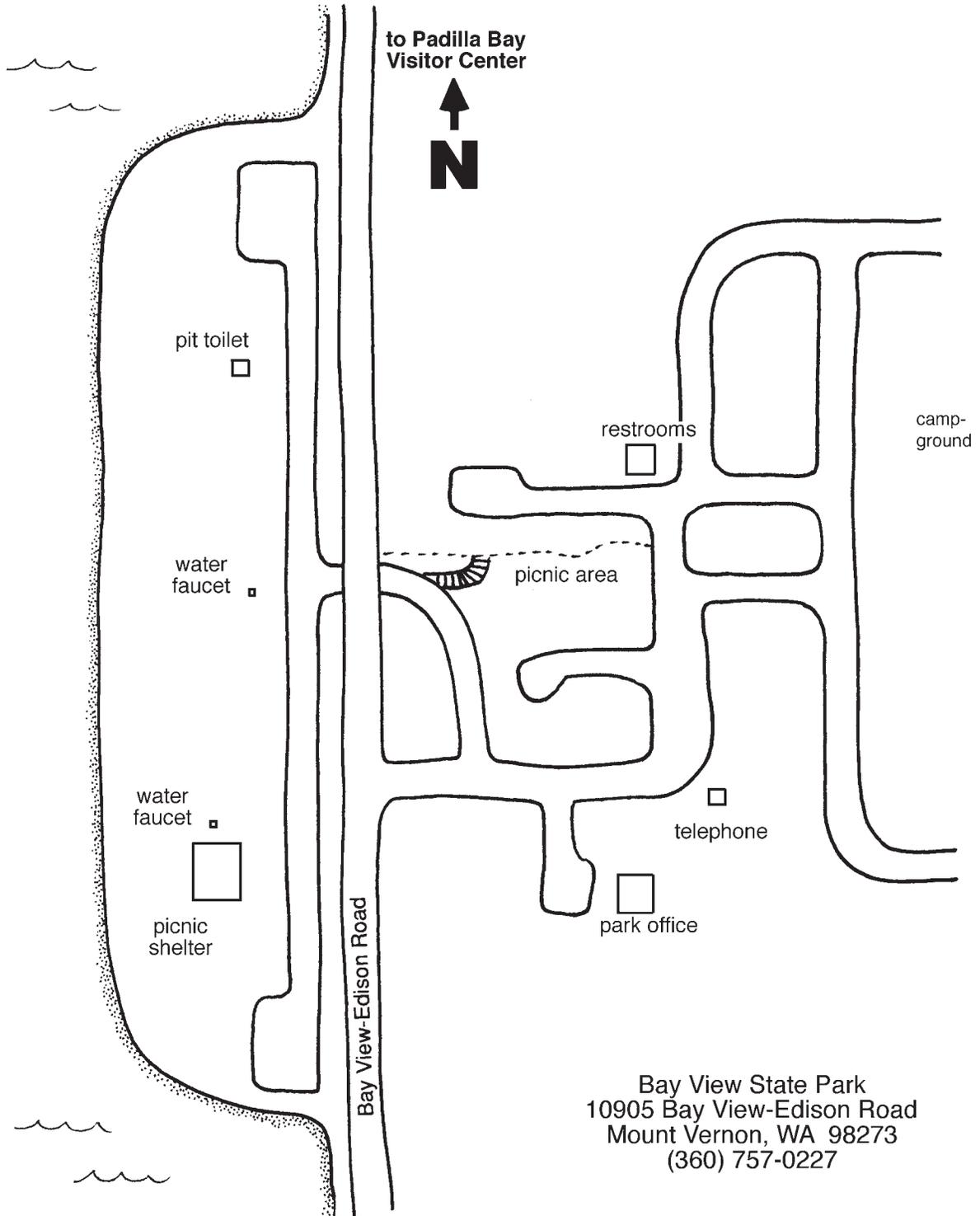
hose and/or dishpans for clean up

Though not absolutely necessary, we have found that giving the children equipment helps them observe organisms closely and carefully, and sets an atmosphere of study rather than play.

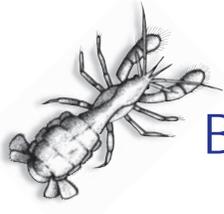
We have provided several Scavenger Hunts to help children focus their attention on observation. Choose one that fits your goals for the field trip, or create your own. Be sure to set physical boundaries for the exploration, and emphasize that *all creatures and shells must be returned to the beach.*



Bay View State Park



Bay View State Park
10905 Bay View-Edison Road
Mount Vernon, WA 98273
(360) 757-0227



Beach Etiquette

Rules

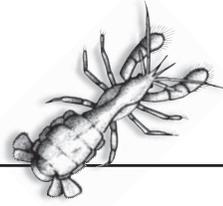
Estuaries are valuable habitats—homes for many organisms. Please discuss with your class the ways to be careful with this important resource.

A technique we use here at the Padilla Bay Interpretive Center is called the **Magic Bag**. Children reach into a bag for objects that remind us of ways to be careful and respectful. A rock with a barnacle shell attached reminds us to return rocks to their original position. A toy shovel reminds us to fill in holes. A limpet shell sparks a discussion on adaptations to avoid drying out and reminds us to leave limpets safely attached to their rocks. We also include a hat (dress properly), a boot (walk only where the mud is firm), and litter (please pick up garbage if you find any). You may want to add different items for your rules.

Cleanup

High tide cleanup is as simple as wiping off loose sand and perhaps changing wet shoes. Low tide in Padilla Bay is another story. Setting clear expectations is important. Each teacher has his or her own "tolerance level" for how much mess is allowed. Be sure your students know what you expect. You should expect muddy shoes—not necessarily muddy or wet clothing. Students should *explore* the mud, not *play* in it.

Several dishpans of water and a hose help reduce congestion at the faucet. Please wash up at the faucet at the beach, not in the campground rest rooms. Check for litter before you leave. Your help in keeping the picnic area and rest rooms clean will insure that we continue to have access to this fine facility and the State Park staff will appreciate your efforts.

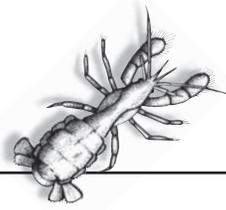


Padilla Bay's Scavenger Hunt



- A clam shell the size of your thumb & another as big as your elbow
- A bird feather
- Something mushy
- Something smooth
- A piece of wood that looks like an animal
- A crab shell with hair on it
- A crab shell with freckles
- Something pink or purple
- Something shiny
- A piece of garbage

Please return all critters to their homes when you're done.



Padilla Bay's Scavenger Hunt



Clam shells: with ridges without ridges

4 different kinds of birds: 1 _____

2 _____

3 _____

4 _____

2 kinds of eelgrass:

2 kinds of algae:

An animal track

Something that changes _____

Something slimy _____

2 kinds of crabs:

3 unique smells:

2 different mud dwellers:

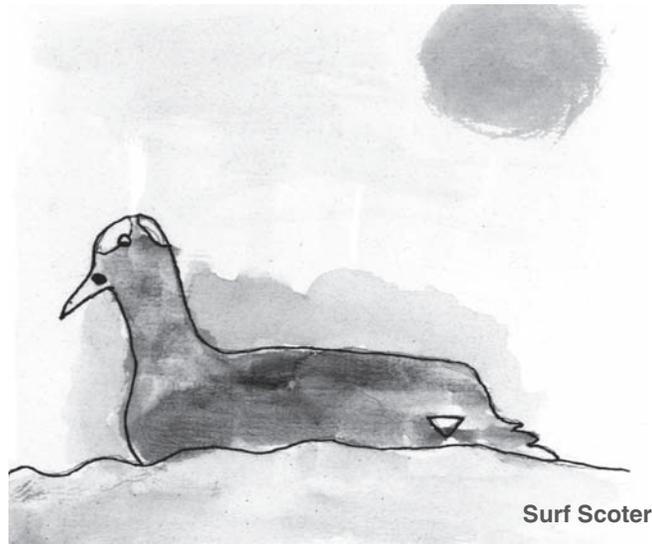
Signs of human influence: garbage

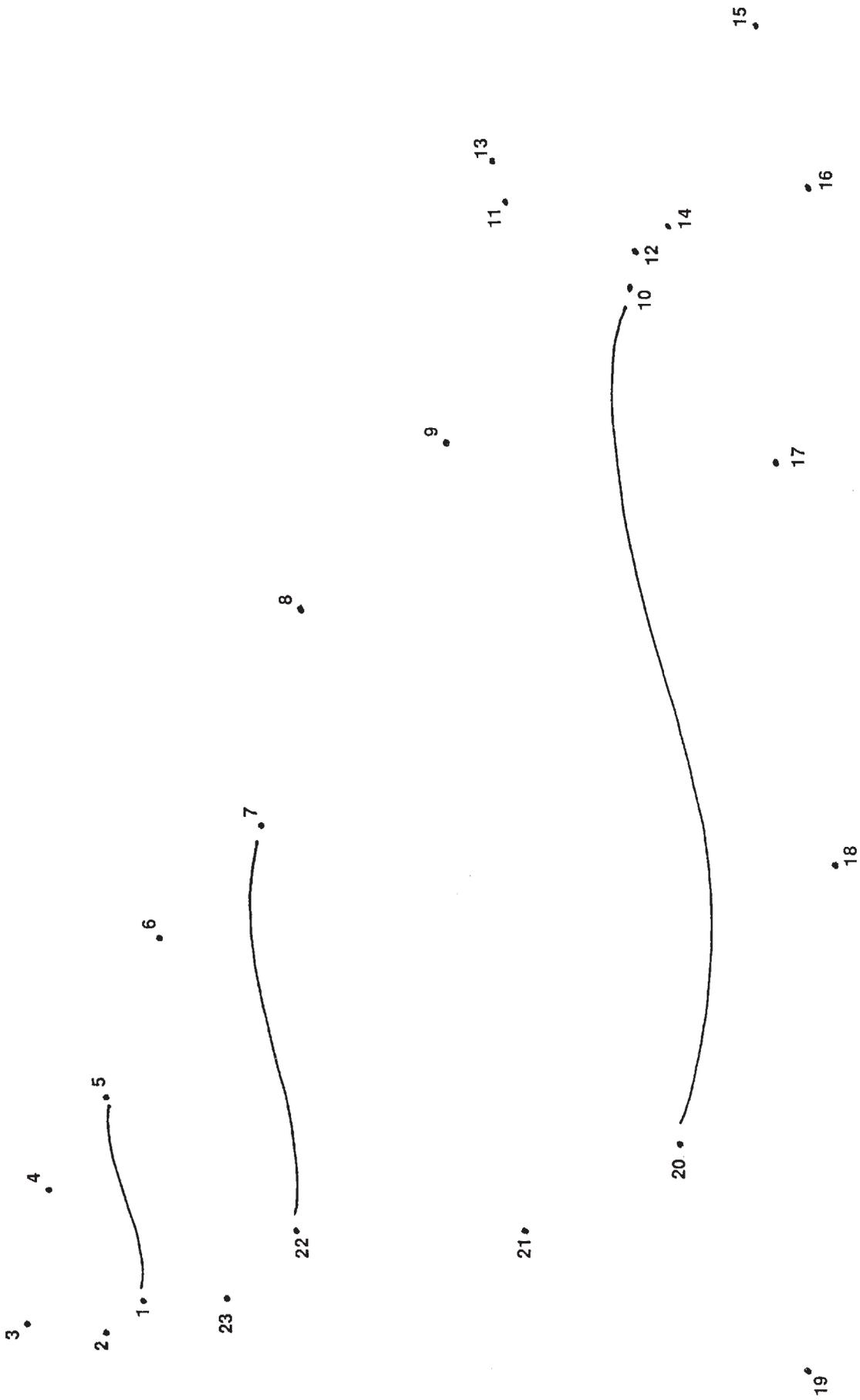
Please return all critters to their homes when you're done, replace rocks, and fill in holes.



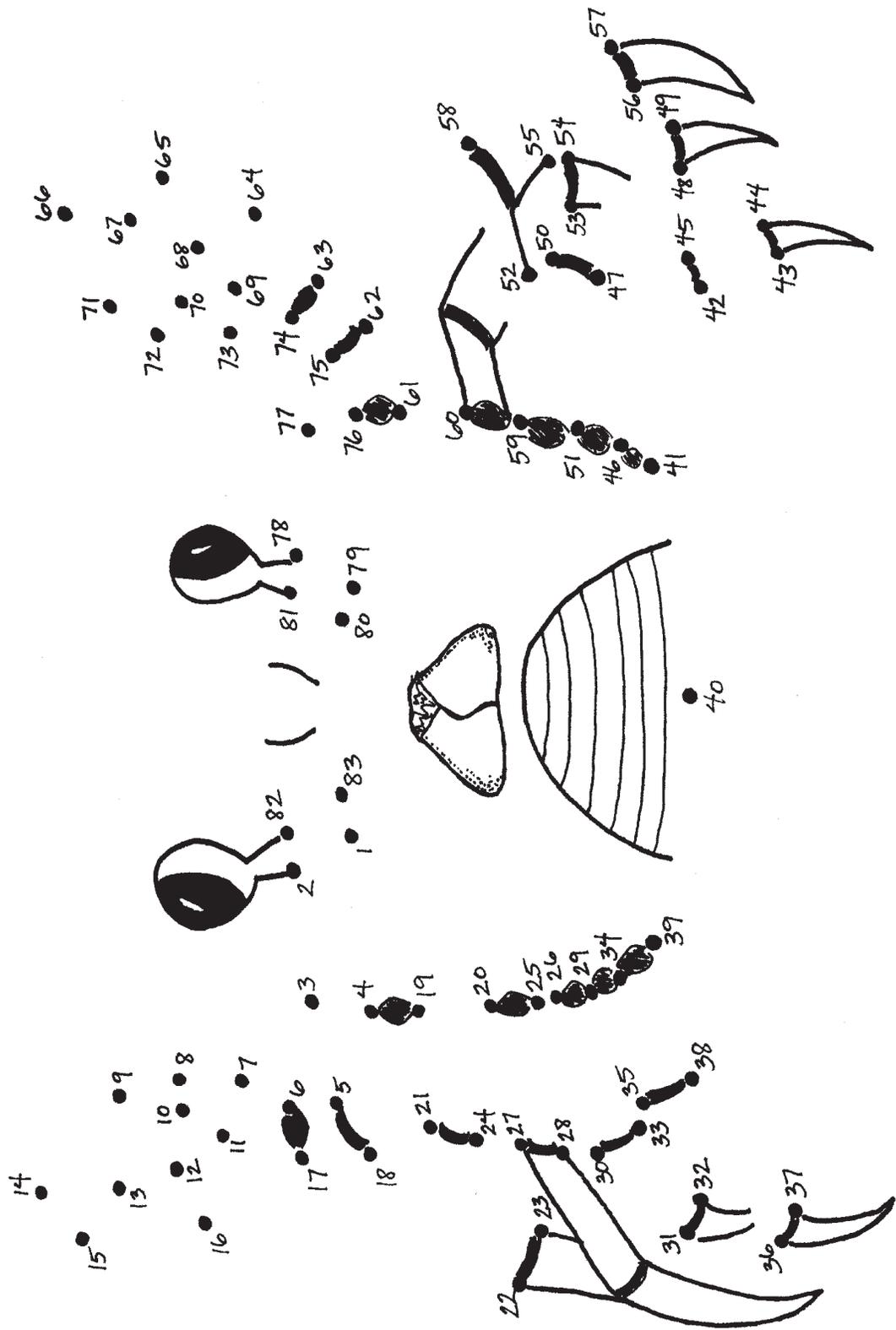
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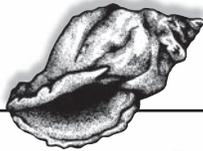




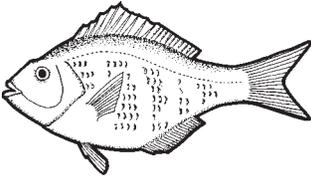
Connect the numbers to see who is creeping on the mudflats!



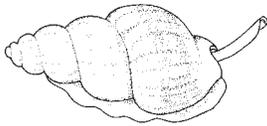
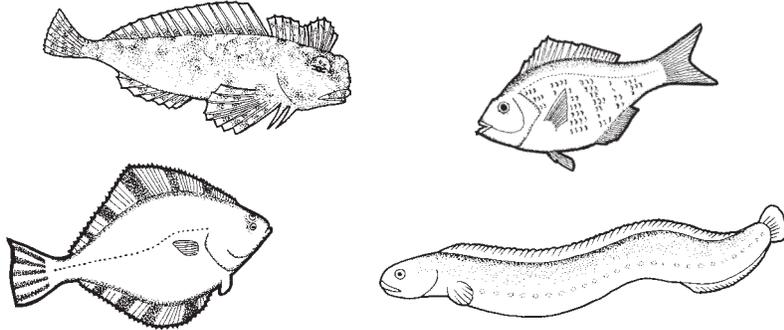
Here is something that lives in Padilla Bay. It is small enough to fit in the palm of your hand. Look for it under rocks.



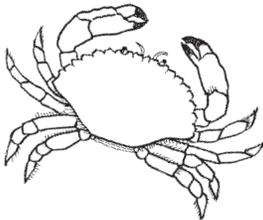
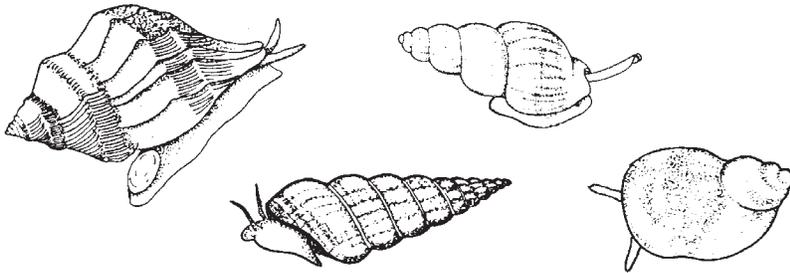
Match the Critters



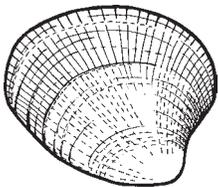
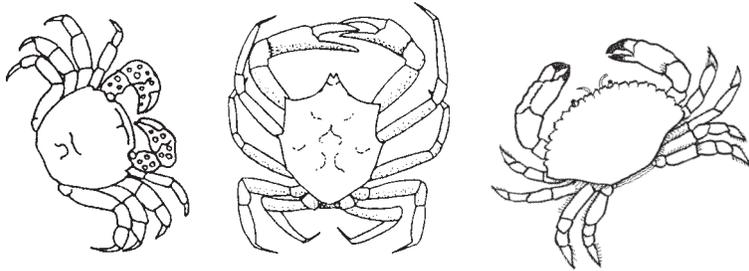
fish



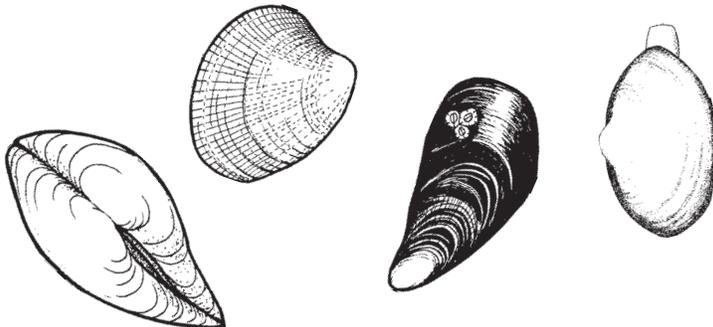
snail

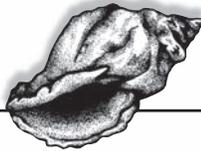


crab

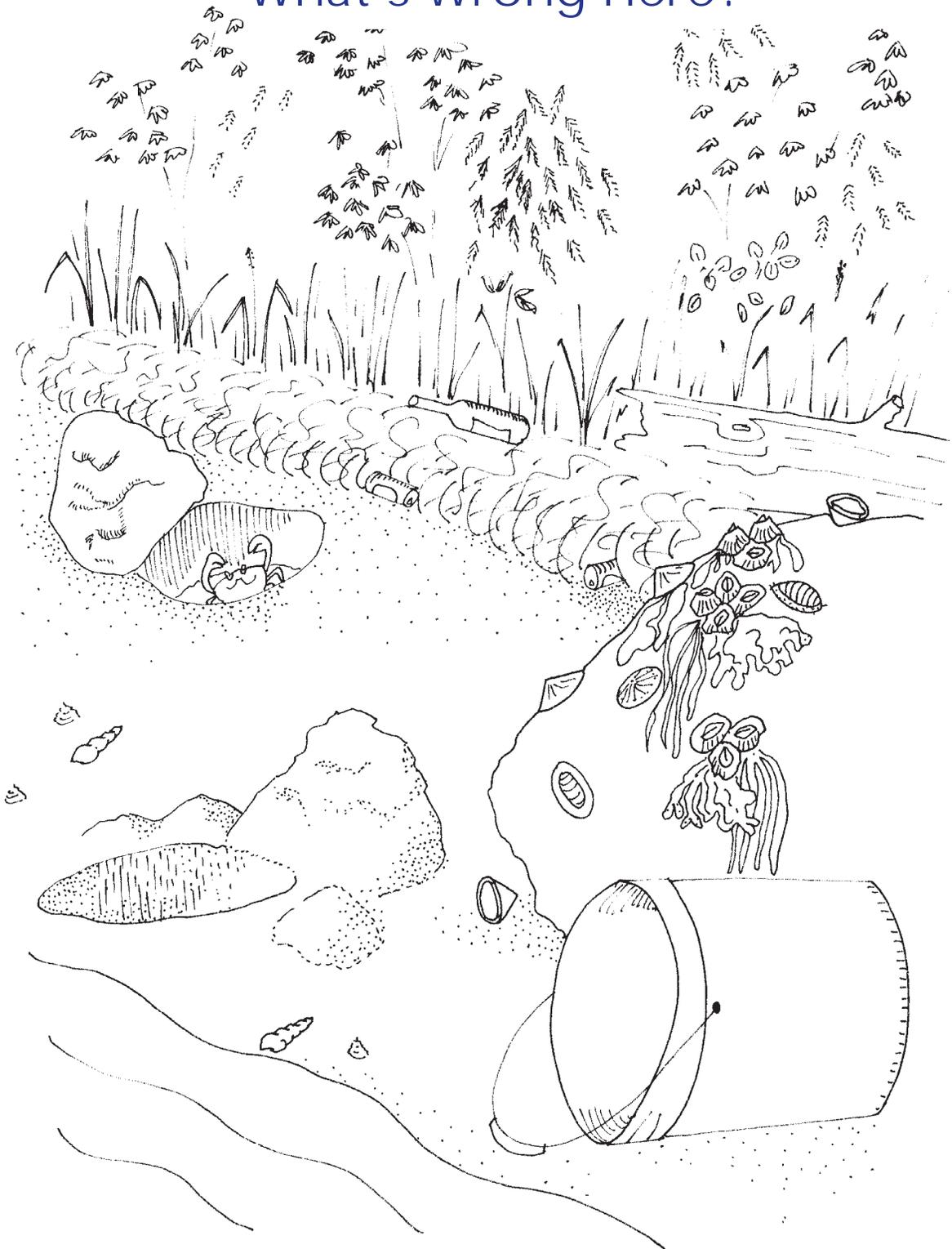


clam

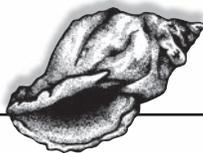




What's Wrong Here?

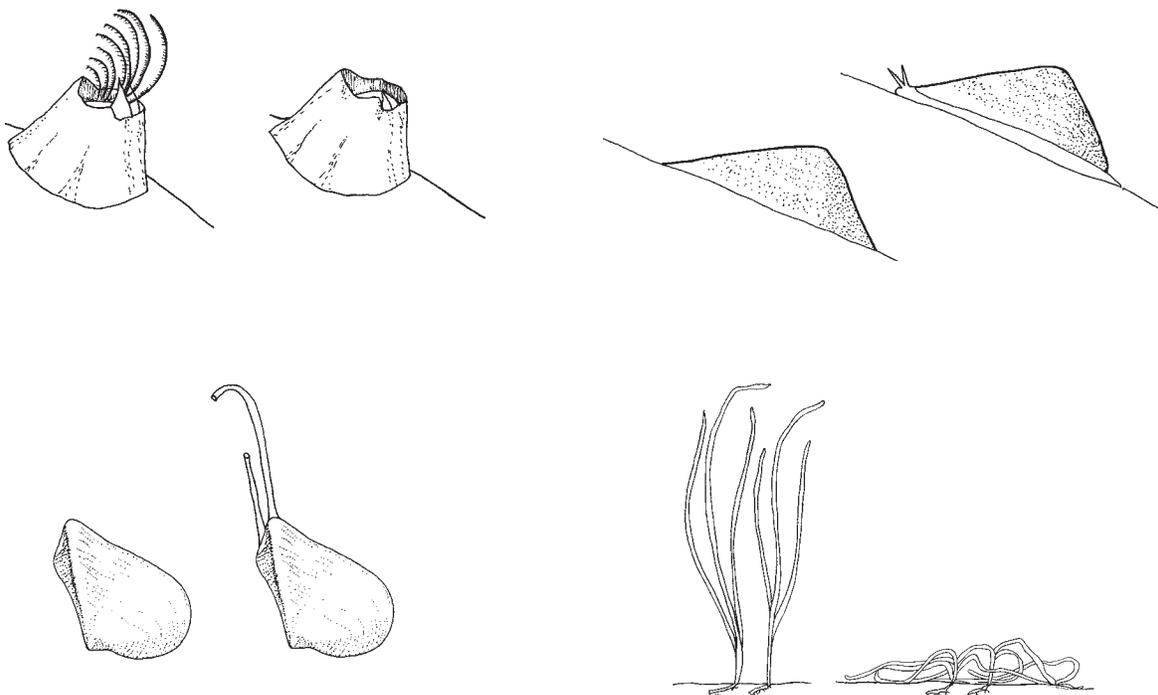


People have been to this beach. Circle the mistakes they made.



High Tide-Low Tide

Which is at high tide? Which is at low tide?



How can you tell?
