

Can You Find My Home?

Objective:

To prove that all animals depend on their surrounding environmental factors and that removing the animals from natural habitat will have a negative effect on the animals and the environment.

Materials: 20 laminated cards with drawings of the animals (each one will have a clue to locate each animal's home, see examples). Map of the beach, clipboard, pencils and worksheets.

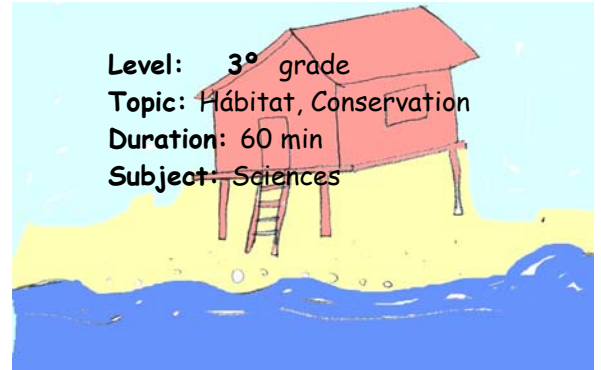
The animals are: 1 hermit crabs; 2 fiddler crabs; 3 tube worms (rocks); 4 polychaete tube worms (sand); 5 limpets; 6 olives; 7 Nerites sp.; 8 chitins; 9 slugs; 10 barnacles; 11 goose-neck barnacles; 12 Chinese hats; 13 blue polychaete worms. Use only the animal cards that they might see during their visit (depends on time of year). With 7-10 of these animals we can complete the 20 cards by repeating them 2-3 times.

Information Base:

Every living thing has a home somewhere in the world. The place or space that an organism or group of organisms use to make a home is called a **Habitat**. A habitat includes everything that exists in that space, both living and non-living. Every organism is connected in a fine balance with the living and non-living environment. For example, water is necessary for marine organisms which are used in turn for food. It is important to understand the balance that exists between the elements that form a habitat and their inhabitants. If an organism or an element is removed from a habitat, or modifications are made to that habitat, the resulting change may place that species in danger. The following are some of the animals we will try to find in their habitat: the rocky shore the sandy beach of Punta Culebra.

Hermit Crab:

This group has a great number of species all of which make their homes in of discarded sea shells. On the Crab Beach at Punta Culebra a large group may be found around the upper sandy beach area where they scavenge whatever the high tide washes up. The abdomens of hermit crabs are very soft so it is imperative that they find an empty shell to serve as protection for their



soft bodies. Luckily, the Crab Beach has a constant supply of shells from the abundant *Nerites* sp. snail found on the rocky shore. During times of intense heat, hermit crabs look for shade beneath rocks, logs and other debris on the beach.

Fiddler Crab:

This crab from the genus *Uca* has a large population on the Crab Beach. They are found in groups in the middle of the sandy littoral zone. During low tides and only during the day, these crabs emerge to feed on the microscopic algae (diatoms) that are deposited on the beach by the receding tide. Every day they must dig out their holes which provide them with protection from predators and desiccation during low tide. During high tides, they remain enclosed in these holes. They are small and white. The male is differentiated from the female by the presence of a disproportionately enlarged claw.

Polychaete Tube Worm:

We can observe this worm during low tide at the edge of the water. It makes a home in a u-shaped tube that can be seen sticking out of the sand. They feed on plankton (small organisms that float in the water) when the tide is high. The water flows in one direction through this tube and with the use of its cilia (small hairs) it can select or filter out its food and maintain a flow of water.

Barnacles:

Barnacles are abundant on the rocky littoral zone. They live permanently attached to rocks, boats or other animals like whales. Their body is surrounded by a strong hard conical shell with a hole on the top. It is kept closed during low tides to maintain internal moisture. During high tides, they open the hole and extend tentacle-like membranous organs that are used as nets to capture small organisms floating in the water.

Limpets:

Limpets live on the rocky littoral zone. They have a soft body that is covered by a thick conical shell which provides protection from desiccation during low tides.

To avoid being swept away with the changing tides, they attach themselves to the rocks with a muscular foot. In its mouth it has a tooth-like structure called a radula which it uses to scrape the surface of the rocks for food, like algae. They move slowly and oftentimes, you can find other organisms like barnacles attached to their shells.

Olives:

This tiny snail lives in the sandy littoral zone of the Crab Beach. They live buried under the sand in the low-tide area of the beach and may be difficult to find, although you may observe their tracks in the sand. They are carnivorous, feeding on small clams and crustaceans buried in the sand.

Nerites:

This common snail can be found on rocky littoral shores throughout the Pacific. It is abundant at the Crab Beach. Their shells are very thick and dark in color. During low tide they can be found hiding in the cracks of the rocks to avoid desiccation. They also deposit their eggs in these areas and in the small tide-pools that form during low tide. They feed on algae and when they die their shells are used by hermit crabs.

Chiton:

These are known as "sea roaches" and belong to the same group as the snails. Their shell is formed by eight plates held together by a surrounding band. They live in the rocky littoral zone, adhering strongly to the underside and cracks of rocks in the low tide area that remain wet and shaded. They feed predominately on algae found on the rocks.

Sea Slugs:

Sea slugs are related to snails but they do not have shells. They are easy to observe in tide pools during low tide. They are known as "sea hares" because of their voracious appetite for algae on which they graze found on the bottom of tide pools. Their bodies blend with the bottom of the tide pools and secrete a substance that is disagreeable to predators.

Vocabulary: Habitat, rocky shore, sandy beach, tide pools.

Procedure:

1. Docents will welcome the group and introduce themselves. Introduce the theme by going on an imaginary journey to our natural satellite (the moon). Once there (imaginatively) make a list of things you will need to live that are not found on the moon. Examples: oxygen, water, food, home, clothes, friends, etc. Define habitat with the group.
2. After the introduction invite them to take a journey to the Crab Beach (this time not imaginary). Explain how we will go to the beach to find animals. Make groups of 2-3 students. Give each group a card, blank form, clipboard and pencil. Explain the rules of the beach before beginning: do

- not walk on the homes of the crabs, no running, remain in your group, walk carefully on the rocks, don't touch any object that may hurt you, etc.
3. We will try to hand out an equal number of animals for the rocky shore as for the sandy beach. In this way there will be a docent to help the students in either environment.
 4. After finding their animal they should fill out their form while they can still observe their area.
 5. Proceed to the classroom and sit the students around the tables. Place the drawing of the map of Culebra on the table. Ask them to locate the areas where they saw animals. Select a few of the animals and ask who found one: "What is their habitat like? Is it close to the shore-line? What happens to their home when the tide comes up? What do you think they eat?" (Help with each explanation). We can describe the habitat of some or all of the animals that were found on the beach, time permitting.
 6. Now we can ask: "What happens if we move them from where they were found?"
 7. Have students change the location of a couple animals (i.e. from the beach to the rocks and visa versa). Ask them what would happen to these animals.
 8. In conclusion review the meaning of "Habitat" and form a definition with the help of the group.
 9. Ask them to speak of any incidences where they took an animal home from another location. "What happened to him? What did you have to do for this animal to survive? Do you think its right to take an animal out of its habitat?"
 10. Take the group to the aquariums and show them the many homes that are found in the ocean. Without discussing coral reefs, have them observe and talk about the differences between this habitat and the one they observed on the beach.

Suggestion for the Docent:

Time permitting, walk out through the dry forest and have the children compare this habitat to the beach, the aquariums and the rocky shore. Do not make any stops just make comparisons.

Suggestion for the Classroom:

Create a mural with the animals that belong in each habitat (i.e. under the sea, beach, rocky shore, rain forest, etc.)

Evaluation:

The proper definition of the word "Habitat" by the group shall be our evaluation.

References:

Martin, Cindy. 1993. Docent training Guide Books. 2-3 grade level.

Can You Find My Home?

Group Participants: _____

The name of our animal is: _____

- I live in the sun
- I look for the shade

My house is made of:

- Sand
- Rocks
- Water

My house and the edge of the water are:

- Close
- Far away

My habitat is: _____

Clues for Finding the Animals

1. I'm slippery and crawl slowly. I always have water, even at low tide.
Answer: Sea slug
2. I live attached so waves cannot drag me away.
Answer: Barnacle
3. I live attached and hidden away so the sun won't dry me up.
Answer: Chiton
4. My house gets destroyed every time the tide comes up.
Answer: Fiddler and Ghost Crabs
5. I live attached so waves cannot drag me away.
Answer: Nerites sp.
6. I leave footprints that look like bicycle tracks.
Answer: Hermit crab
7. I crawl underneath the sand. You will only find my twisted tracks.
Answer: Olive
8. I live attached so waves cannot drag me away.
Answer: Limpet
9. We live partially buried in a group or "neighborhood".
Answer: Polychaete tube worm
10. We live attached and underneath heavy objects. We always have water even during low tide.
Answer: Spaghetti tube worm
11. I crawl.
Answer: Blue polychaete worm
12. I live attached and always have water even at low tide.
Answer: Chinese hat