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OUR HIGH ISLAND HOME

Place-based resources for Pacific Island schools

DEDICATION

For students, teachers and communities living in tropical Pacific island environments.

TABLE OF CONTENTS

INTRODUCTION

There are low and high islands in the Pacific Ocean. All islands have some of the same **environments** (kinds of places such as coral reef, open ocean, and forest). Some islands have places not found on the other islands.

This book describes different environments on Pacific high islands. Pictures show these environments, and the plants and animals that live there.

These islands are in the Pacific Ocean near the equator. Because of this location, the islands have a warm **climate**. It is warm for the whole year. It is warm during the day and during the night. The ocean is warm all year.

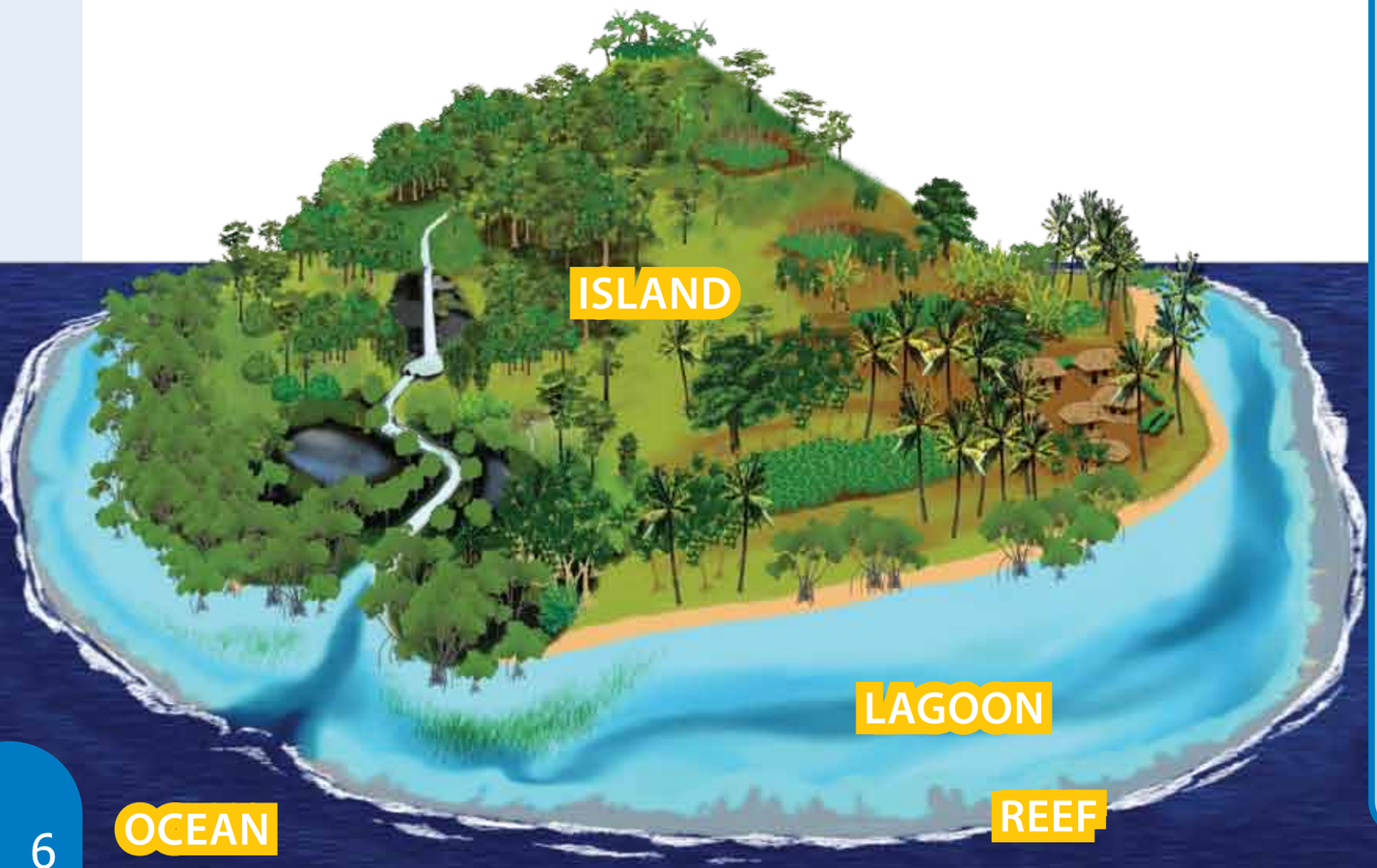
Many of the plants and animals live in this warm climate. They are different from the plants and animals that live in colder parts of the planet.

The words that are in blue might be new words for you to know. Check out the Glossary near the back of the book. You can learn what each of these words mean. We write these words in blue the first time they are in the book.

This book has pictures of plants and animals that live on high islands. Which ones do you know? Talk with your friends, family and teachers to find out what they know about the environments, plants and animals on your island home.

WHO LIVES WHERE ON OUR ISLAND?

People live on our island. Plants and animals do, too. They live where there is food and water. Plants grow and produce new plants there. Animals raise their young there. Different plants and animals live in different places on our island. Coconut palms live near the shore. Fish live in the ocean. People live in villages.



We call a home for a plant or animal a **habitat**. In this book, we explore different habitats on high islands. We learn about the plants and animals that live there.

WHERE DO PEOPLE LIVE?

People live in a village.
Where is the village on the island to the left?

Where do plants and animals live?
Turn the page to find out.

TREE GARDEN

Many people brought breadfruit, coconut, taro, and pandanus plants to the islands. Today, these trees and plants grow in gardens in our villages. Tree gardens are habitats for plants. They give us fruit, **root crops** and other vegetables to eat. Tree gardens are also home to insects, lizards, wild birds, chickens and pigs.

THE TREE GARDEN IS OUR HOME


SWEET POTATO


SKINK


BANANA


HONEYEATER


COCONUT


CHICKEN


BREADFRUIT


WATER BUFFALO

FOREST

Forests on high islands have wild trees, bushes, and **herbs**. A forest habitat has many different trees and other plants. They have insects, lizards, birds, and bats, too. Some plants and animals live only in high island habitats. These special plants and animals do not live anywhere else in the world. Scientists say that they are **endemic** to our islands.

THE FOREST IS OUR HOME


MOSS


CENTIPEDE


FERN


FLYCATCHER


BANYAN

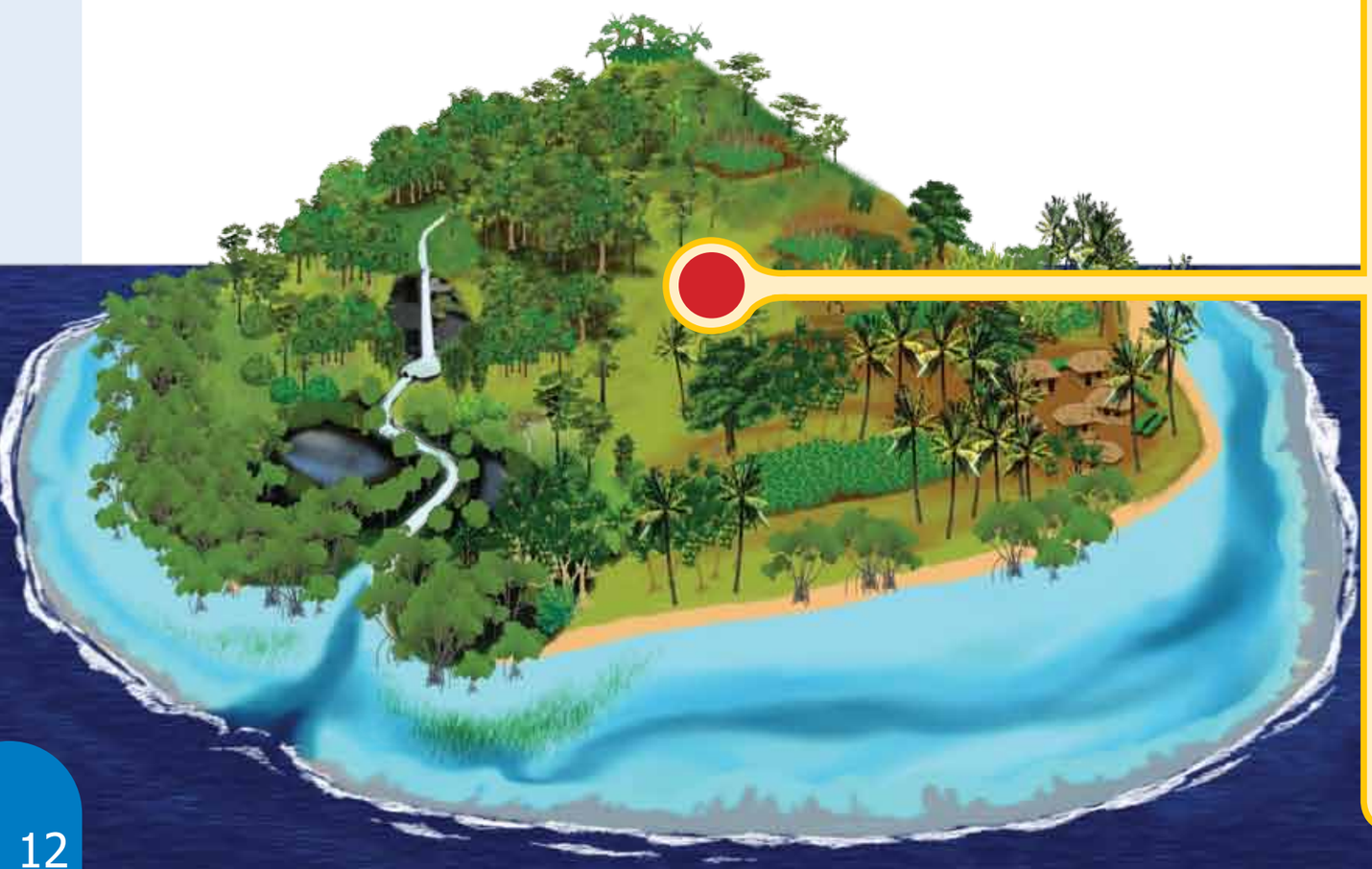

WHITEYE


TERMINALIA


BAT

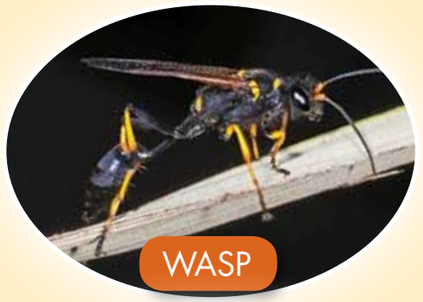
GRASSLAND

Some parts of our islands are covered with grass and other small plants. These grasslands are open with lots of sunlight. Sun-loving plants such as grasses, ferns, bushes, and flowers grow there. Hiding in the grass are many kinds of insects, spiders, lizards, and birds.



THE GRASSLAND IS OUR HOME


CLUBMOSS


WASP


MANA FERN


SPIDER


SWORDGRASS


SKINK


WILDCANE


YELLOW BITTERN

WETLAND

Some low-lying island areas are covered with water most of the time. These wetland habitats have a lot of water. Various grasses, reeds, and trees grow well in wetlands. Hiding in **shallow** water ponds are freshwater fish, shrimp, crabs, and many water insects. Birds that feed on these animals also live in wetland habitats. People grow taro in the wetlands.

THE WETLAND IS OUR HOME


SEDGE


LAND CRAB


REED


TOAD


PARA GRASS

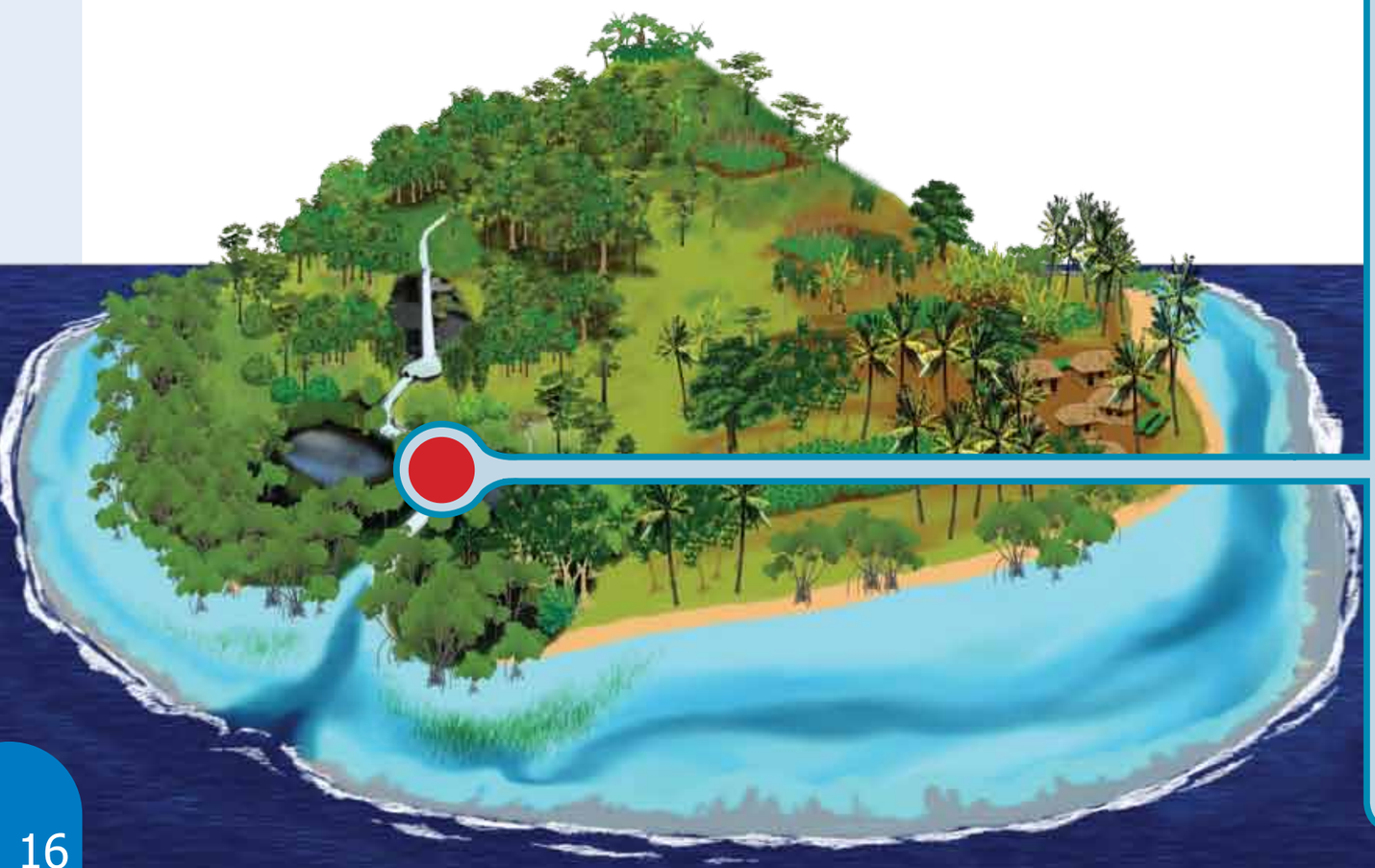

MOORHEN


TARO


EGRET

RIVER

When it rains, water runs downhill across the land. This water joins to make streams. Streams come together and form larger streams called rivers. Plants that like lots of water grow along the rivers. Snails, shrimp, and fish live in these freshwater rivers. Some animals live only in fresh water. Some also live in water that is salty.



THE RIVER IS OUR HOME


WILD HIBISCUS


SHRIMP


POWDER-PUFF TREE


FLAGTAIL


BAMBOO

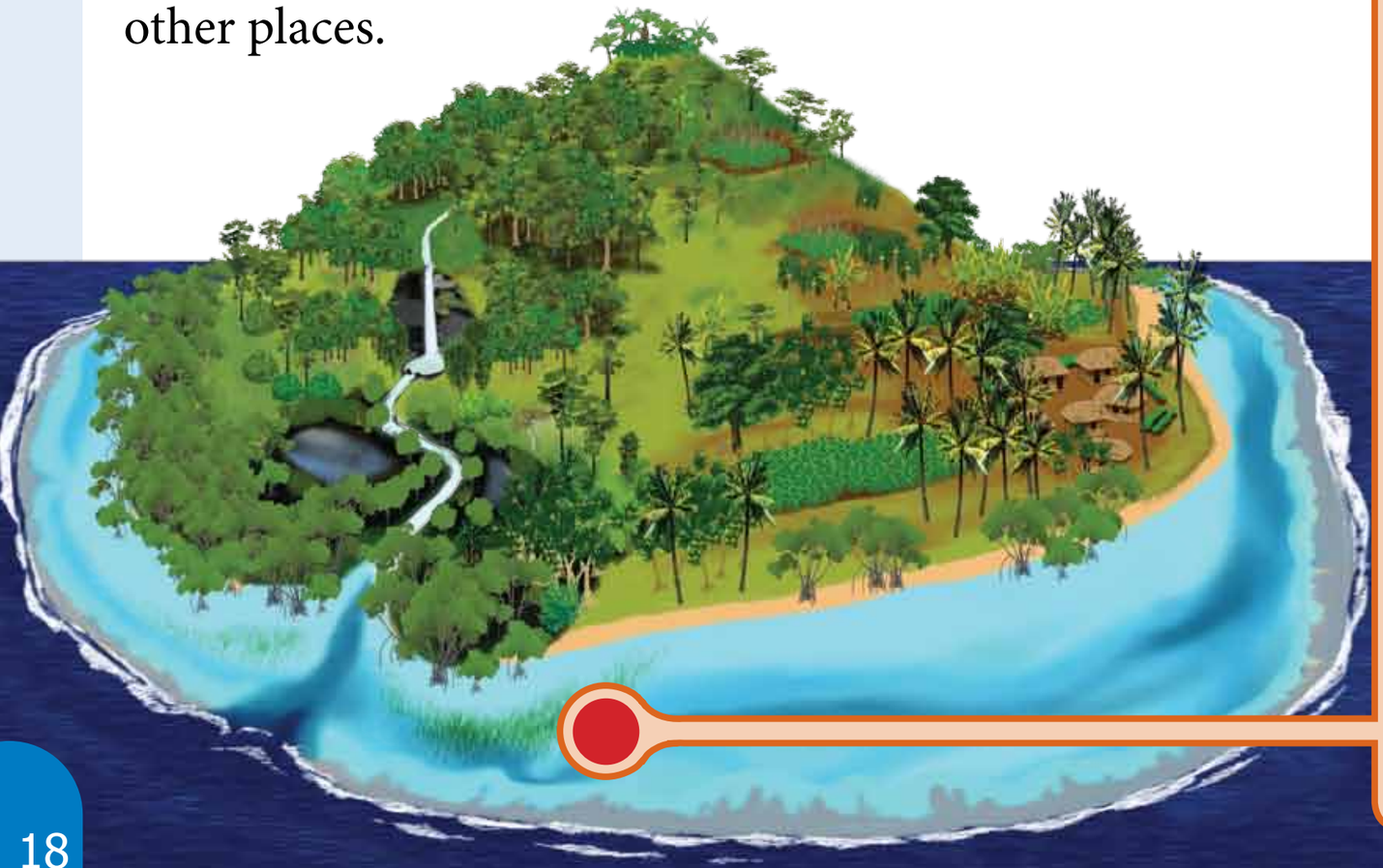

GOBY


FRESHWATER SNAIL


EELS

SEAGRASS BED

Seagrasses are kinds of grass that grow in seawater. They cover shallow parts of the reef and lagoon. Seagrass beds look like underwater grasslands. Worms, clams, snails, sea cucumbers, and fish have habitats in seagrass beds. Some kinds of young fish grow up in seagrass. They hide to escape the bigger fish that eat them. When these young fish get bigger, they move to other places.



SEAGRASS BED IS OUR HOME


GREEN ALGAE


EMERALD SNAIL


SMALL SEAGRASS


SEA CUCUMBER


TAPE SEAGRASS


PIPEFISH


NARROWLEAF SEAGRASS


PUFFERFISH

MANGROVE SWAMP

Mangroves are special trees that grow where fresh water and ocean water mix. They form flooded forests or swamps between the land and the ocean. Mangrove roots are very strong. Mangroves protect the land from waves and storms. The mangrove swamp habitat is home to crabs, fish, birds, and many other animals.

MANGROVE SWAMP IS OUR HOME


MANGROVE FERN


MANGROVE SNAIL


WHITE MANGROVE


FIDDLER CRAB


RED MANGROVE


MUDSKIPPER


NYPA


MULLET

REEF

Reefs are large structures in shallow waters. They are built mostly by corals but also by some kinds of **algae**. Reefs are home to lots of sea life: sponges, sea anemones, worms, clams, snails, sea urchins, sea stars, sea cucumbers, shrimp, crabs, and many kinds of fish. Coral reefs are very important. They have more kinds of animals living there than in any other place in the ocean.

THE REEF IS OUR HOME


FIRE CORAL


LOBSTER


STAGHORN CORAL


SEA URCHIN


BRAIN CORAL

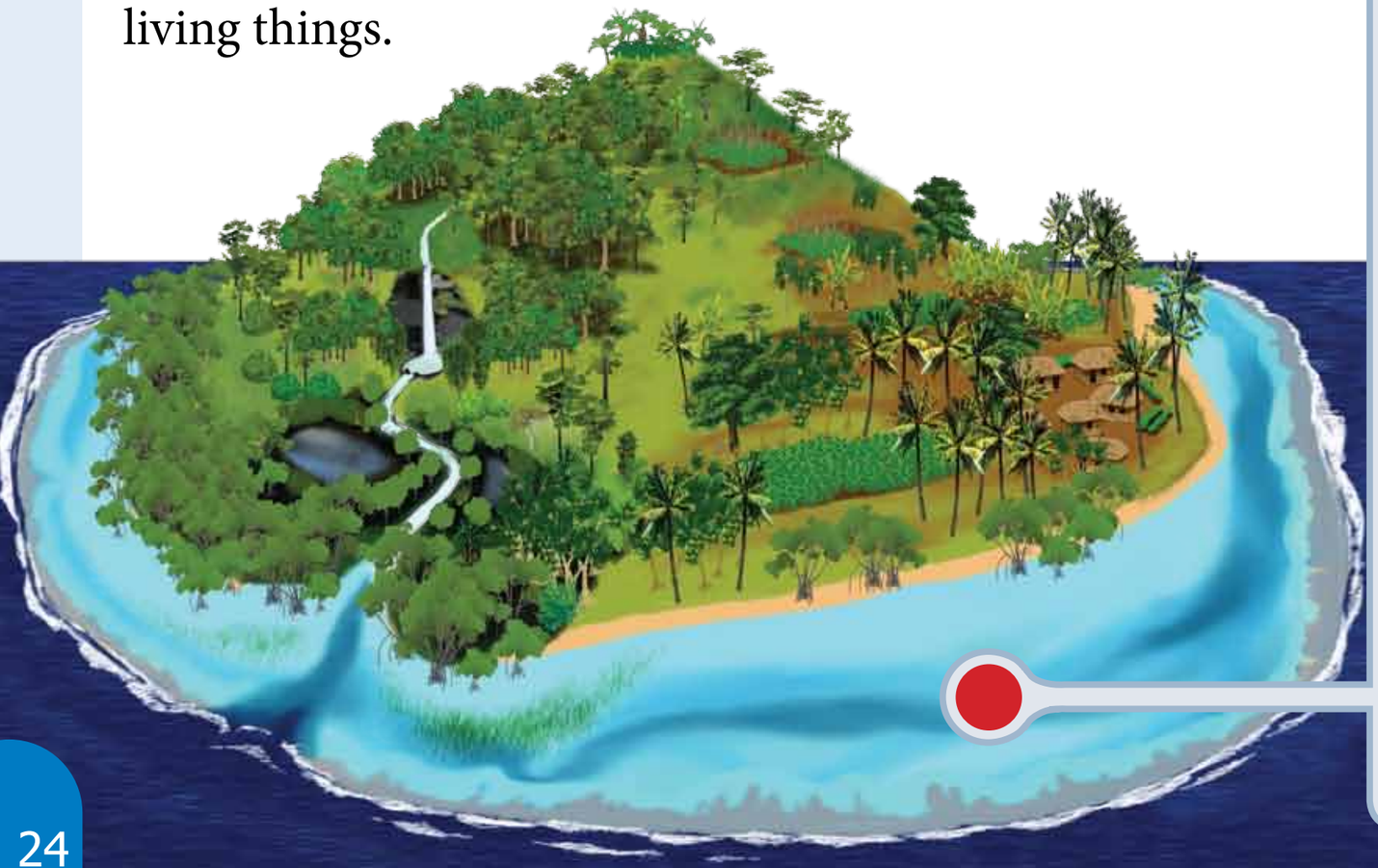

DAMSELFISH


COWRY


LIONFISH

LAGOON

Coral reefs and islands surround a lagoon. They protect it from the open ocean. The lagoon has many different types of habitats: muddy areas, sandy areas, seagrass, and coral. It is home to sea plants and animals: algae, sponges, corals, sea anemones, jellyfish, worms, clams, snails, sea urchins, sea stars, sea cucumbers, shrimp, crabs, and many kinds of fish. The lagoon has many living things.



THE LAGOON IS OUR HOME


SPONGE


BOX CRAB


WORMS


SEA STAR


GIANT CLAM


PARROTFISH


CONCH SNAIL


MORAY EEL

GLOSSARY

Algae – plants that live in water and do not have roots. Some algae have shells and help build very strong reefs.

Climate – the kind of weather that a place usually has at different times of the year.

Endemic – a plant or animal that lives only in one place and nowhere else on our planet.

Environment – a kind of place and its land, air and water.

Habitat – a natural home for a plant or animal.

Herb – a small plant that is used to give flavor to food or used as a medicine.

Root crop – a kind of plant that people grow because the root is a good vegetable to eat.

Shallow – not deep.

TEACHING TIPS

PLANT OBSERVATIONS

Try the following observation activities with students.

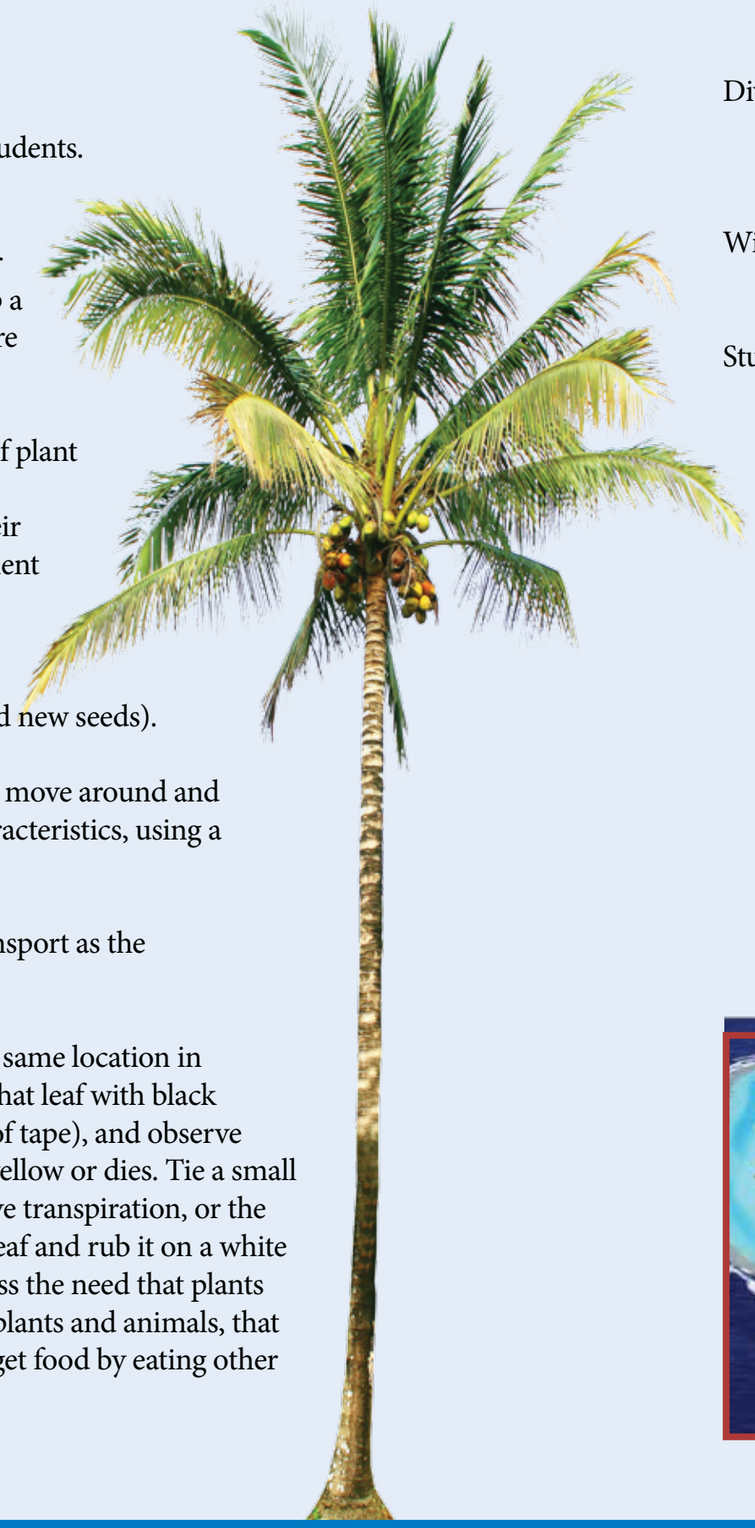
Collect a variety of seeds from different plants that grow on the island. Sort them by their characteristics (e.g., shape, size) and set up a small area in the school or classroom where students begin to grow groups of seeds.

Walk on school grounds to observe the types of plant life that surround the school. Identify the various parts of plants and their functions (e.g., roots for support and nutrient absorption, trunk/stem for support and transportation of materials, leaves for production of food, flower for reproduction and development of fruit and new seeds).

Set up stations in the classroom for students to move around and explore different plant parts and their characteristics, using a magnifying glass or microscope.

Put sea grasses in colored water to observe transport as the leaves turn colors.

Place a plant with leaves and maintain it in the same location in the classroom. For one leaf, cover part of that leaf with black construction paper (secured with a piece of tape), and observe over time how that part of the leaf grows yellow or dies. Tie a small plastic bag around another leaf and observe transpiration, or the release of water by the plant. Pick a third leaf and rub it on a white page to show the green chlorophyll. Discuss the need that plants have for light in order to grow. Compare plants and animals, that plants make their own food, and animals get food by eating other organisms.



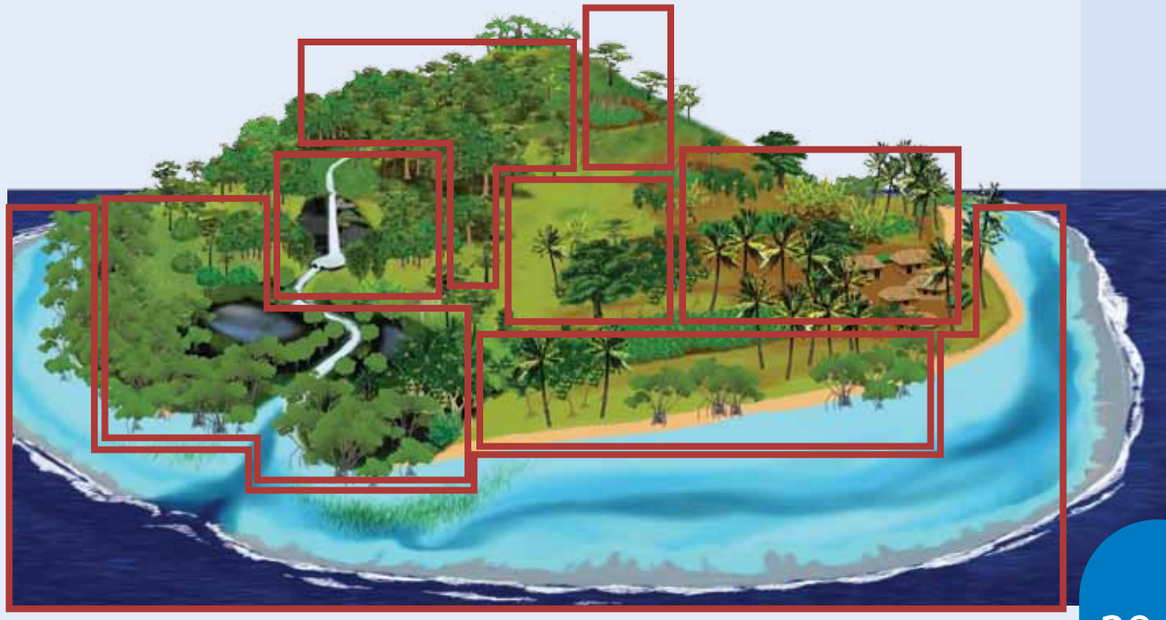
PUZZLING ADDRESSES: WHO LIVES HERE?

Brainstorm with students what they know about the various places and characteristics of habitats within the lagoon (or island).

Divide a large piece of chart paper into "puzzle pieces" and write each habitat from brainstorm activity onto one puzzle piece. Divide students into teams and assign each team with a habitat. Give the corresponding "puzzle piece" to team.

Within teams, students find information about the types of animals and plants that live in the assigned habitat, and the animals' and plants' needs to survive.

Students draw and label their habitat on the other side of the "puzzle piece", and list a description of the animals and plants in the habitat. When done, each team presents their habitat, and and the whole class puts puzzle pieces together to create the lagoon/island.



BE AN EXPLORER

Try the following explorer activity with students.
Students will need a journal/paper and a pencil or pen.

Review the high island habitats described in the book and identify a habitat near the school.

As a class, explore the habitat, creating a path walked together.

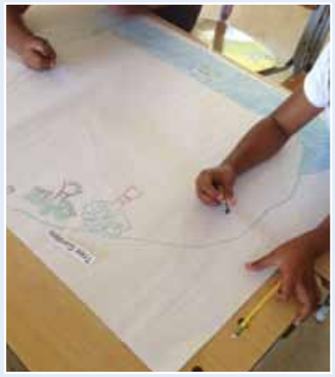
Observe the plants, animals, soil, water and other natural elements around the path.

Note in journals at least 5 natural elements observed using images and words (have students record information in the local language and then in English).

Note the weather and time.

Repeat on a different day at a different time.

Draw a class map of the habitat, noting the path to make it easy for other explorers to follow the footsteps of the class and adding images with descriptions of observations near the path.

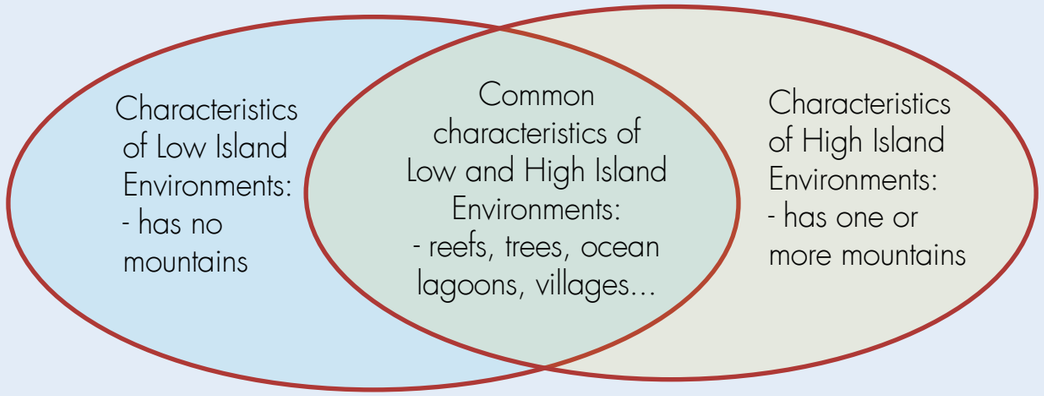


COMPARING ISLAND HABITATS AND ORGANISMS

This activity uses the pages titled "Where Is Our Home?" from both the High Island and the Low Island books.

A. Using illustrations from the pages, ask students to compare what they see in common and what they see is different about each of the islands. Organize ideas in a Venn diagram.

Venn Diagram Example:



Introduce/review key vocabulary and create word wall with students (see teaching tip in "Our Low Island Home" book).

Read aloud the text from each book once. Do a "think aloud" to share how you are making sense of the text and identifying different information.

Write the name of an organism (e.g., "coconut palms") and a home (e.g., "near the shore") from the text each on a 3x5 card. Have students work in pairs to search through texts to find names of other organisms and their homes (e.g., "fish"/"ocean" and "people"/"villages"). Write down the organisms, one on each card. Explain to students these cards will be used later. Connect "home" with "habitat".

Guide students to use the tables of contents and identify habitats common in both types of islands. Add them to the 'common bubble' chart (Tree garden, forest, lagoon, different parts of the reef). Identify which habitats are described for each type of island and add to the corresponding bubbles. Model how to use compare/contrast signal words (e.g., "both" for similarities; "but" for differences) to describe common and different characteristics of the two islands.

COMPARING ISLAND HABITATS AND ORGANISMS
(continued)

Model how to find information about the Tree Garden habitat: create "information cards"(using 3x5 cards) about each organism (e.g., what the organism eats) from texts, create a grid (see example), place organism cards found in the habitat under the correct column, and place corresponding information cards onto the grid.

Example grid organization for 3x5 cards and information cards for Tree Garden:

Type of Island: (high/ low) Island Habitat (where they live): Tree Garden		
PLANTS	**ANIMALS**	
Breadfruit		People brought it, grow it, and eat it.
	Chicken	People raise chickens for eggs and meat. Chickens eat worms, seeds, grass, and grains.

B. Divide students into groups and assign a habitat to each group. Just as modeled, students find information on living organisms and where they live on the assigned habitat pages for high and low island habitats. Monitor and assist as needed. Do a "gallery walk" and have students use compare/contrast signal words to describe similarities and differences between the habitats.

C. Have students identify an organism based on information about that organism. Provide cards (see examples below) to play a "Who Am I: Identify the Organism" game. More cards can be made getting information locally or from the computer. Tape a card onto each students' back. Have students get together in pairs and guess which organism they are.

Example cards for "Who Am I?" Activity (name of animal should be on other side of the card)

• I am a spiny and ball shaped body. • I eat algae from the reef and ocean floor. • Queen triggerfish eat me. • I live on the reef. **(sea urchin)**	• I am a plant. I make my own food with energy from the sun. • I have long leaves where young fish, shellfish hide. • Turtles eat me. **(sea grass)**	• I am a plant. • I can be tiny or larger. • I live in the water and use energy from sunlight to make food. • Snails, parrotfish, crabs, snails, and many other sea creatures eat me. **(algae)**
• I have fins, scales and backbone. • My mouth is like the beak of a bird. • I eat coral polyp that grows on dead coral. • Larger fish (barracuda) eat me. **(parrotfish)**	• I am one individual of many like me. I live with others in a colony. • I have tentacles to catch and eat tiny sea animals called zooplankton. • Parrotfish eat me. **(coral polyp)**	• I have a backbone, breathe air and live on land. • I eat fish, turtle eggs, squids, lobsters, and many other sea animals. • I like watching the sunrise and sunset. **(human being)**
• I have a hard outer shell and 10 limbs. • Two limbs are claws to catch and crush sea urchins and snails. • Humans catch me and eat me. **(crab)**	• I have a star-shaped body. I can be large, spiny and of many colors. • I can grow a new body arm if I loose one. • I eat algae and bits of dead plants and animals. • Crabs and lobsters eat me. **(sea star, also called starfish)**	• I have backbone, 4-flipper legs and a hard shell to protect me. • I breathe air, I eat sea grasses and sponges. • I can get caught in fishing nets. • Humans dig up my eggs to eat. • I am in danger of extinction. **(sea turtle)**

PHOTO CREDITS

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OTHER BOOKS IN THIS SERIES

This book is a part of the series, Pacific Islands Climate Education Partnership (PCEP), Place-based resources for Pacific Island schools. The series also includes the following titles published thus far.

Our Low Island Home is a book about natural island environments that Pacific children and their families will enjoy reading together. Highly visual images make familiar low island land- and seascapes come to life. Children living on low islands will recognize their everyday world and yet be amazed at the hidden treasures found within.

Pacific High Island Environments is a book for those wanting to learn more about the places, plants, and animals on tropical high islands in the Pacific. The reader learns how high islands are formed and the various environments that create habitats for many species of plants and animals. From agroforests to mangrove swamps and lagoons, the reader is connected to island life and how important these environments are for the communities that live there.

Pacific Low Island Environments is a book for those wanting to learn more about the places, plants, and animals on tropical low islands in the Pacific. The reader learns how low islands are formed and the various environments that create habitats for many species of plants and animals. From atoll forests to patch reefs and the open ocean, the reader is connected to island life and how important these environments are for the communities that live there.

Mangroves—Living on the Edge in a Changing Climate offers readers of all ages a fascinating journey through the inner worlds of the mangroves. Intricate adaptations and unexpected habitats emerge from the pages of the swamp, unsettling the reader into realizing the incredible value of this island ecosystem. Mangroves provide many resources for local communities, and help reduce global warming by storing more carbon in the soil and its trees than other comparable ecosystems. This book also explains climate change, and how communities can help protect mangroves from climate change impacts such as rising sea levels.

Adaptations—Finding a Fit in the Changing World is a book that children and their families will love. It is full of colorful pictures about how living things are adapted to meet their basic needs in the places they live. Children will be fascinated to learn that some plants have developed chemicals so that animals that share their environment will not eat them. Children will also learn that there are many different types of birds' beaks, all adapted to meet their need for getting food in different places. As children turn these pages, they quickly realize that all living things adapt to get what they need. It is this unique ability to adapt that help all living things survive.

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