Philippines Connections: A WEB OF LIFE

ACTIVITY GUIDE
SUGGESTED FOR GRADES 3-5

JOHN G. SHEDD AQUARIUM
Philippines Connections: A WEB OF LIFE

From the ocean surrounding the Philippines to Lake Michigan, we’re all connected by water. In *Philippines Connections: A Web of Life Activity Guide*, explore the unusual biology of seahorses, navigate the maze-like mangrove forest and spend the day with a child from a Filipino fishing village. Along the way, discover how animals, habitats and people are all connected, both in the Philippines and—even if you’re an ocean away—where you live.

This activity guide accompanies the Philippines Connections: A Web of Life poster and is an engaging activity to use before or after a visit to the Wild Reef—Sharks at Shedd exhibit or on it's own.
SEAHORSES

MATERIALS
One copy of pages 2 and 3 per child

ACTIVITY
Read the text and study the diagram. Read aloud "Once Upon a Seahorse" and then write your own creation myth.

ILLINOIS STANDARDS
Language arts 1, 3, 5
Science 12

VOCABULARY
Predator, species, camouflage, reproduction, zooplankton, habitat, ecosystem

REFERENCE
www.projectseahorse.org
Coral Reefs (3-5) Activity Guide, John G. Shedd Aquarium
Fishes (K-8) Activity Guide, John G. Shedd Aquarium
Oceans (3-5) Activity Guide, John G. Shedd Aquarium
What is a Fish? by Barbara R. Stratton

STRANGELY SHAPED SYNGNATHIDS
(Say it three times fast!)
Despite their unusual shape, seahorses are fish. There are seven species of seahorses found in the waters of the Philippines. All seahorses are classified in the family Syngnathidae (sing-NATH-ih-dee). A seahorse's body and behavior are well adapted to living in the ocean shallows of lagoons, seagrass beds and coral reefs.

MOUTHS FOR SLURPING
With no teeth, a seahorse's fused jaws work like a vacuum cleaner to suck in hundreds of tiny aquatic animals (zooplankton) throughout the day.

FROM ARMOR TO FINS, I'M ALL FISH!
Instead of scales, seahorses have protective bony plates under their skin. A seahorse rapidly fans the fin on its back to swim forward and uses fins on either side of its head for steering.

CREATIVE CAMOUFLAGE
Seahorses swim slowly, so they cannot easily flee from danger. One way seahorses protect themselves from predators is through camouflage, which also helps them ambush prey.

PREGNANT MALES?
The female seahorse produces eggs and deposits them in her mate's pouch. The male fertilizes the eggs, then carries the developing young. At birth, the young burst forth from the pouch and do not return.

SEAHORSES: WILL THEY SURVIVE?
Millions of seahorses are caught each year for traditional Asian medicine, the aquarium trade and tourist curiosities. Fishing practices using dynamite, cyanide and trawlers destroy seahorse habitat. Seahorses can't reproduce quickly enough to replace those that are lost. People are causing problems for seahorses. But if we find creative solutions, seahorses will be swimming the shallow seas for years to come.

WORKING TOGETHER
John G. Shedd Aquarium and Project Seahorse are in partnership for marine conservation. The Project Seahorse team consists of scientists and social scientists working together in eight countries to find solutions to various problems faced by marine ecosystems. Project Seahorse works with fishers to develop management plans for seahorses and their habitats, which helps local communities learn how to manage all of their marine resources, saving the homes of many animals and plants.
FROM FISH TO FISH

A seahorse may look like a horse, but from its fins to its bony armor, it's all fish!

Compare these two fishes. What do they have in common?

ONCE UPON A SEAHORSE

Seahorses have been the subject of mythology and legends because of their unusual shape and swimming behavior. Here's a Filipino legend that tells how seahorses came to be...

One day, a long, long time ago, men with vicious dogs were chasing two beautiful horses owned by the sea lord, Amanikable. When they were trapped on a sandy shore, the horses pleased with Amanikable to protect them. With a great flourish, Amanikable sent waves from the ocean to sweep the horses into the sea. The men and their vicious dogs were left stranded on the beach as the horses transformed into beautiful seahorses.

Go to Shedd’s Web site at www.sheddaquarium.org to search for pictures of fascinating and cool animals and to learn interesting facts about them. Pick an aquatic animal from Shedd’s collection. Write a creation story about how it came to be and illustrate your story.
LEARN MORE
There are many types of camouflage. Seahorses use the form called cryptic coloration to blend into their surroundings. Next time you are at an aquarium, try to spot animals hiding with cryptic camouflage.

Can you find the seahorse hidden in the coral?

MATERIALS
One copy of pages 4 and 5 per child
Coloring crayons, colored pencils, markers, scissors

ACTIVITY
Create underwater scenes incorporating cryptic camouflage techniques.

ILLINOIS STANDARDS
Science 12

VOCABULARY
Camouflage

REFERENCES:
How to Hide an Octopus by Ruth Heller
Coral Reefs by Dwight Holing

HIDE AND SEE-HORSE!
Help these seahorses hide in their habitat.
1. Copy this page.
2. Color the first two seahorses on the left so they blend into their surroundings on the right. Cut out each seahorse and hide it in its habitat. Is your seahorse well hidden?
3. Color the patterned seahorse and cut it out.
4. Create a habitat scene in the blank box for it to hide in.
INSTRUCTIONS

1. Make a copy of the seahorse provided for each child and cut it out.

2. Find a “habitat” in your home or classroom to hide your seahorse in, such as wallpaper, vertical blinds, plants, or patterned carpet.

3. Color your seahorse to blend in with its new habitat.

CHALLENGE! Do this activity with classmates, family, or friends. Ask everyone to hide their seahorses and then take turns being the predator. Time each other to track how long it takes to find the hidden seahorses. How many did you find? Whose cryptic camouflage worked the best, and why?
MAKE THE CONNECTION!

USE THESE FLASH CARDS to see how in the Philippines, habitats, people and animals are all connected.
Make a copy of pages 6 and 7 for each child. Glue them back to back and cut out the cards.
TRY BINGO! Make bingo boards with the 12 pictures. Make sure each board has a different arrangement. What other games can you create with these flash cards? See page 11, “Every Picture Tells a Story”, for an additional activity.

<table>
<thead>
<tr>
<th>A coral reef system supports a variety of life, including sponges, sea stars and sharks. By protecting our reefs we are protecting everything that lives there.</th>
<th>Filipinos have fished these waters for centuries. Their livelihood continues to depend on the health of habitats such as the mangrove forests, seagrass beds and the coral reef system.</th>
<th>To travel the waters around the islands, Filipinos often use a traditional boat called a banca.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hand weaving, a tradition passed on from generation to generation, is a fish-friendly source of income for Filipinos.</td>
<td>The tangled roots of the mangrove provide a safe place for young animals to grow and help filter out silt from rivers and streams before it covers the reef. People also use the mangrove trees as a source of wood.</td>
<td>Sharks are an important part of the ecosystem. They eat animals at every level of the food web, which helps keep the sea’s populations strong and healthy.</td>
</tr>
<tr>
<td>Because of its shape, people often think a seahorse is not a fish. Seahorses are slow-moving fish that protect themselves from predators with camouflage and bony armor-like plates covered with skin.</td>
<td>By selling handmade crafts like these, Filipino fishing families don’t have to catch as many seahorses and other fishes to make a living.</td>
<td>Handumon, a village in the Philippines, exports its crafts to aquarium gift shops in other countries.</td>
</tr>
<tr>
<td>A marine biologist studies life in the ocean. Project Seahorse, a partner with Shedd Aquarium, is an organization that works in many parts of the world for marine conservation.</td>
<td>A community member guards a marine protected area—a safe place for the animals and plants living there.</td>
<td>Some seahorses are most active at night. Fishers tie lanterns to the fronts of their boats to see the seahorses in the water at night.</td>
</tr>
</tbody>
</table>
The Philippines has many habitats, including:

**CORAL REEFS:** Growing in shallow tropical seas, reefs are home to a wide variety of animals. Healthy reefs rely on the health of their surrounding habitats.

**LAGOONS:** In this habitat between the reef and shore, many reef animals lay their eggs in the seagrass beds of the lagoon's calm waters. Predators sometimes journey to lagoons in search of food.

**MANGROVE FOREST:** Land and sea meet at the mangroves' gnarled roots, which are anchored in deep mud. Mangrove branches reach high towards the hot tropical sun.

**MAPPING THE MANGROVES**

The tangled roots of the mangrove forest provide a safe place for juvenile fish to grow. Even young sharks find safety from larger predators in the mangroves.

Mangrove roots slow river runoff, filtering out silt before it covers the delicate coral polyps of the reef. The roots also help build and keep the shoreline secure.

The mangrove forest provides food and shelter to many animals, including birds and monkeys. A mudskipper, another unusual fish, relies on both the mangrove and sea for survival. Mudskippers use their fins to walk short distances over land or up mangrove roots, breathing through their skin or from air trapped in lung-like spaces in their bodies.

Filipinos use the mangroves for wood to fuel their cooking fires and for building material. Mangrove forests are also cut down to create space for farmland and aquaculture (underwater farms for aquatic plants and animals such as shrimp).

People recognize the importance of the mangrove forest and are replanting them in many areas of the Philippines.
MAPPING YOUR NEIGHBORHOOD

In the mangrove forest, everything is connected. Are things in your neighborhood connected?

1. Like the example below, create a map of your neighborhood.

2. Include people, places, plants, animals and things you would find there.

3. Make a key that explains the items you put in your map.

KEY:

MATERIALS
One copy of page 9 per child
Coloring crayons, colored pencils, markers

ACTIVITY
Complete the map and make connections between things found in your neighborhood.

ILLINOIS STANDARDS
Social Science 17

VOCABULARY
Mangrove forest, mudskippers, aquaculture

REFERENCE
Sharks (3–5) Activity Guide, John G. Shedd Aquarium

How is your neighborhood a habitat for animals and people? Draw a line that connects all the related parts of your map. An example connects all the following: bird—bird feeder—tree—house—people. How many connections can you make?
MY ISLAND DAY

LEARN MORE
Eighty million people, called Filipinos, live on the 7,000 islands that make up the Philippines. A large number of Filipinos live in major cities, including the capital city Manila. Other island residents live in fishing villages along Philippine coasts. Fishing the waters of the South Pacific Ocean for centuries, Filipinos’ livelihoods continue to depend on a healthy reef and its neighboring habitats.

MATERIALS
One copy of pages 6, 7 and 1C per child
Paper, colored pencils, scissors

ACTIVITY
Read about the life of a child living in the Philippines and create your own “My Island Day” story.

ILLINOIS STANDARDS
Language Arts 1, 2, 3
Social Science 17, 18

VOCABULARY
Filipino, sanctuary, banca

REFERENCES
Amazon Connections (3–5) Activity Guide,
John G. Shedd Aquarium

MY ISLAND DAY

Welcome to my fishing village. My name is Dadong and I am 10 years old. I wake up early in the morning to get ready for school and help with the chores. I roll up my sleeping mat and get dressed in my T-shirt and shorts. I hear my mother making breakfast. She has cooked rice, and hopefully fish, if my father caught some yesterday.

After breakfast, I walk to school. I am in the fourth grade. We are studying many things. I like learning about different places. School starts at 7:30 a.m. when the teacher rings a school bell.

After school I rush home to see if my father has returned from fishing. My grandfather was a fisher and my father is a fisher. Sometimes my father is out fishing all day. The fish my father catches are used for our food and he also sells them for money. Fishing is hard work for my family and neighbors. The fish seem like they are disappearing. Sometimes my father stays out all day and comes home with nothing.

When the village fishers noticed that there were fewer fishes in the reef, they went to see the village captain. The captain makes sure the people follow all the laws and helps manage our village. The fishers explained that they were traveling farther and farther to catch fish. They knew this was not a good sign. If fish are not able to live near our island, where will we get our fish?

Our village is beginning to work to protect the reef. First our village set up a sanctuary. The sanctuary is an area where no one is allowed to fish. Hopefully, this protected area will fill with fish and the reefs will become healthy again.

I sort out the nets from the day’s fishing after school. If I finish early, I go swimming in the ocean with my friends. We don’t go too far out in the water because there are stinging jellyfish and my father sometimes sees sharks. Later on, we eat dinner, tell stories and laugh, and then it’s time to do my homework. It’s been a long day. I pull out my sleeping mat.

As I lie on my mat I think about the reef and its fishes. I have not decided if I will be a fisher. Fishing is hard work. My father has to be a strong swimmer, and he sometimes cuts himself on fishes’ sharp fins or his fingers get pinched by crabs and bitten by fishes. My older sister used to study marine biology to study life on the reef. Maybe, one day, I will be a scientist too.
EVERY PICTURE TELLS A STORY

Write your own “My Island Day” story.

1. Select six flash cards from pages 6 and 7.
2. Lay out the cards.
3. Write sentences that lead the story from one picture to the next.

On a sunny day in the Philippines, two children hopped in a banca...

...to see fish living in the coral reef...

...when suddenly they saw a beautiful shark...

...so they rushed home to tell their mother...

...then while returning to the reef they got lost at the edge of the mangrove...

...and when they finally found their way out they returned to their fishing village.
THE JOHN G. SHEDD AQUARIUM  The John G. Shedd Aquarium’s exhibit, Wild Reef—Sharks at Shedd, immerses guests in a Philippines coral reef system to explore the connections among animals, habitats and humans. Wild Reef features one of the most diverse collections of sharks in North America, the largest public display of live corals in the Midwest and 500 species of beautiful reef fishes. The exhibit’s 26 interconnected habitats contain more than 500,000 gallons of water, all housed in a new underground wing.

Shedd Aquarium promotes the enjoyment, appreciation and conservation of aquatic life and environments through education, exhibits and research. It develops and provides educational opportunities that afford a strong understanding of the aquatic world, promote public stewardship of the natural world and enrich the quality of life in our community.