

Seahorse Similes

Topics

Seahorses, Adaptations

Grades

K-5

Site

Indoors

Duration

30 minutes

Materials

For each student or student pair

- Various fish and seahorse photos
- Blank **Seahorse Poster Template** or seahorse drawing
- **"Like" and "Because" Simile Cards**
- Notebook or language frame, pencils
- Nonfiction resources about seahorses

Vocabulary

adaptations, camouflage, coronet, habitat, simile

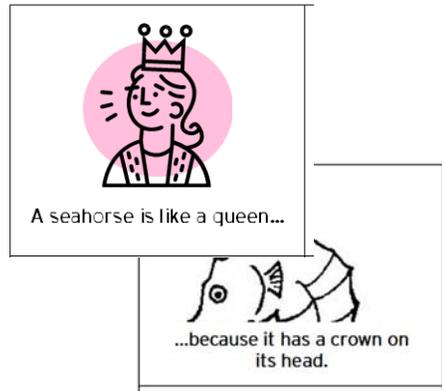
National Science Education Standards

Science as Inquiry (K-4)
Ability to do scientific inquiry
Understanding of scientific inquiry

Life Science (K-4)
The characteristics of organisms
Organisms and their environments

Science as Inquiry (5-8)
Ability to do scientific inquiry
Understanding of scientific inquiry

Life Science (5-8)
Structure and function in living systems
Diversity and adaptations of organisms



Overview

How is a seahorse like a knight? What does a seahorse have in common with a kangaroo? In this activity, students use simile cards to discover the answers to these questions and understand what makes a seahorse a unique fish.

Objectives

Students will be able to:

- Identify two seahorse adaptations.
- Infer how seahorse adaptations help a seahorse to survive.
- Use similes to describe seahorse adaptations.

Background

A seahorse is a fish. Why? Like other fish, seahorses have fins and gills. A seahorse has a dorsal fin on its back which it moves 35 to 40 times per second. This is too fast for humans to see! Seahorses also have two small pectoral fins. There is one on each side of its head which it uses for steering. Like other fishes, a seahorse extracts oxygen from the water with its gills. A seahorse's gills are found in clumps, like bunches of grapes, on either side of its head. Other fishes gills are in comb-like rows.

Seahorses also possess other characteristics that make them unique fish. Their distinct appearance includes a horse-like head with a **coronet** and long snout. The coronet, or crown-shaped piece of skin on top of its head, is the unique "thumbprint" of each individual seahorse. The toothless snout of a seahorse is used to slurp up food that it spots with its special eyes. Like chameleons and many other fish, a seahorse is able to move each eye independently. This is an **adaptation** that helps them locate prey such as krill, other crustaceans and fish larvae. Unlike most fish, seahorses don't have scales but instead have tough skin stretched over a bony skeleton. They also have a distinctive set of bony plates arranged in rings that extend down their body. These give them a stiff, almost armor-like appearance.

Many species of seahorses are also able to **camouflage** and change their body color to blend in with their surroundings. Other animals that can do this include octopuses and some lizards. Seahorses are found in tropical and temperate waters. Their **habitats** include coral reefs, sea grass beds and mangroves. They use their prehensile, or grasping monkey-like tails to cling to corals, grasses or roots. Seahorses are most vulnerable to predators, such as other fish, when they are juveniles.

Seahorses are known for very interesting reproductive behaviors. These fish will find a mate and remain with that partner during an entire breeding season. Only a few other species are known to do this, like some penguins. (Many male penguins also help care for babies.) Courtship behaviors can take place over several days. This may include daily greetings where the pair may swim together, change color and even intertwine their tails. Finally, the females place their eggs into the male's belly pouch where they are fertilized. The babies grow and are born from the male's pouch! (For more information, see Monterey Bay Aquarium's activity, "Father Knows Best.")

There are 45 identified species of seahorses. Unfortunately, 33 of those species are considered threatened by the International Union for Conservation of Nature (IUCN). Harmful fishing and tourism practices as well as runoff pollution threaten these animals. How can you help? Use Monterey Bay Aquarium's Seafood Watch pocket guide to choose seafood caught by sustainable methods. Some fishing methods, like large nets dragged across the seafloor, are harmful and can destroy seahorse habitat and/or catch seahorses unintentionally as bycatch. Also, refusing to buy dried seahorses as souvenirs will preserve seahorse populations. In addition, using nontoxic fertilizers and other chemicals at your home will help to prevent harmful chemicals from leaching into the watershed and damaging seahorse habitats. Last but not least, you can educate others about "why" and "how" you are helping seahorses.

Teacher Preparation

1. Make a seahorse poster using the **Seahorse Poster Template** or draw a large seahorse on a white board.
2. Copy and cut out the sets of **"Like" and "Because" Simile Cards** for each student. Half of the class should have "Like" cards and the other half should have the corresponding "Because" cards. It may be helpful to put matching numbers on each "Like" and "Because" card pair, so students can confirm they have the correct partner.
3. Gather various photographs of different kinds of fish, including seahorses, from magazines, outdated calendars and the internet. Photos of sharks, eels, bat rays, tuna and various other fish will help to illustrate fish diversity.



VOCABULARY

Adaptations: body parts and behaviors that help an animal survive

Coronet: a crown-shaped piece of skin on a seahorse's head

Camouflage: to blend in or match the surroundings

Habitat: a home for plants and animals that provides food and protection

Simile: a figure of speech in which two unlike things are compared, often by using the words "like" or "as"



TEACHER TIP

To make a seahorse poster, photocopy the **Seahorse Poster Template** onto a transparency sheet. Use an overhead projector to project the image on to a whiteboard or poster paper. Trace the seahorse template outline.



ELL TIPS

Similes may be challenging for English language learners because it is using new vocabulary in a symbolic way.

Practice similes with more familiar themes prior to this activity—such as, a cup is like a bathtub because both hold water.



CONSERVATION TIPS

Seahorses and other nearshore animals are vulnerable to pollution in the form of runoff from streets.

Reduce runoff pollution by choosing non-toxic products for use in your yard or when washing your car on the street.

Procedure

(For emergent readers, you may choose to do the entire activity whole group.)

1. EXPLORE WHAT ALL FISH HAVE IN COMMON.

As a class, brainstorm different types of fish. Make a list on a whiteboard. Show students various images of fish to illustrate there is great diversity in fish appearances. Ask students what all fish have in common. (*fins and gills*)

2. INTRODUCE THE IDEA OF A SEAHORSE AS A FISH.

Tape up a seahorse poster or have one drawn on the white board using the **Seahorse Poster Template**. Ask students if a seahorse is a fish. Why or why not? Tell them they are going to use seahorse similes to discover the answer.

3. STUDENTS USE CARDS TO COMPLETE A SEAHORSE SIMILE.

Pass out **“Like” Simile Cards** to half of the class and **“Because” Simile Cards** to the other half. Each student with a **“Like” Simile Card** must find their partner with the corresponding **“Because” Simile Card**.

4. STUDENT PAIRS EXAMINE THEIR SEAHORSE CHARACTERISTIC.

In notebooks or the **Language Frame**, have students write their completed simile and how that characteristic might help a seahorse to survive. A sample notebook prompt for older students is “A seahorse is like a _____ because it has _____. This adaptation would help a seahorse to survive because _____.”

5. STUDENT PAIRS SHARE THEIR SEAHORSE SIMILES.

Each pair should come up to the seahorse poster or drawing, color in or draw an arrow to their seahorse characteristic and then label it. The rest of the class may do the same on the **Language Frame**. (For some of the characteristics, they may draw a representation to the side of the seahorse.) Have students propose their idea of why that characteristic helps a seahorse to survive.

6. IDENTIFY WHAT MAKES A SEAHORSE A FISH.

After all the characteristics are added to the poster, return to the question of whether a seahorse is a fish. (*Yes, because it has fins and gills.*) Discuss unique characteristics or adaptations a seahorse has to help it survive (*grasping tail, bony plates, father gives birth and so on*). Help students understand that while different fish may share certain adaptations, each fish is also specially suited to its particular habitat and life style.

7. DISCUSS WAYS HUMANS CAN PROTECT SEAHORSES.

Use the panda **“Like” and “Because” Simile Cards** to discuss how humans can affect seahorse homes both positively (*protection, education*) and negatively (*pollution, habitat destruction*). Brainstorm ways humans can protect seahorses and other fishes.

Extensions

For each completed seahorse simile, fold a piece of paper in half and die cut a seahorse shape. Place a transparency sheet in between the cut paper so the clear sheet is visible inside the seahorse shape. Students can draw their seahorse characteristic on the transparency and write the simile on the paper around the die cut. Put all the die cut pages together to make your own seahorse simile see-through book.

Resources

Websites

Monterey Bay Aquarium. www.montereybayaquarium.org

Find seahorse information on the Monterey Bay Aquarium's website.

Birch Aquarium. www.aquarium.ucsd.edu/Education/Learning_Resources/Secrets_of_the_Seahorse

Explore a seahorse online interactive from Birch Aquarium.

Project Seahorse. <http://seahorse.fisheries.ubc.ca/>
Research seahorse information and conservation with Project Seahorse.

Books

Seahorses. Melvin and Gilda Berger. Scholastic Inc. 2003.

Seahorses. Sylvia M. James. MONDO Publishing. 2002.

Sea Horses. Lola M. Schaefer. Heinemann Library. 2002. Pebble Books. 1999.

Sea Horses. Sally M. Walker. Carolrhoda Nature Watch Book. 1999.

Sea Horses. Sally M. Walker. Early Bird Nature Book. 2004.

Standards

Ocean Literacy Principles

Principle 5: The ocean supports a great diversity of life and ecosystems.

Principle 6: The ocean and humans are inextricably interconnected.

California Science Standards

Grade K: 1a; 2a, c; 4b

Grade 1: 2a; 4b

Grade 2: 2c; 4c

Grade 3: 3a

Grade 4: 3b; 6a

Grade 5: 6g

California English-Language Arts Standards

Reading

Writing

**OUR SEAFOOD CHOICES
HAVE AN IMPACT ON SEA-
HORSE POPULATIONS.
USE OUR SEAFOOD
WATCH CARD TO MAKE
CONSUMER CHOICES THAT
SUPPORT THE HEALTH
OF OUR OCEANS.**



**THE MISSION OF THE
MONTEREY BAY
AQUARIUM
IS TO INSPIRE
CONSERVATION OF THE
OCEANS.**

“Like” Simile Cards

Set 1



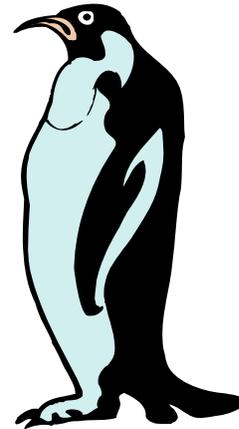
A seahorse is like a queen...



A seahorse is like a person...



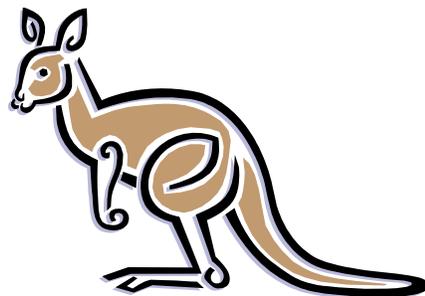
A seahorse is like a chameleon...



A seahorse is like some penguins...



A seahorse is like a dolphin...



A seahorse is like a kangaroo...

“Like” Simile Cards
Set 2



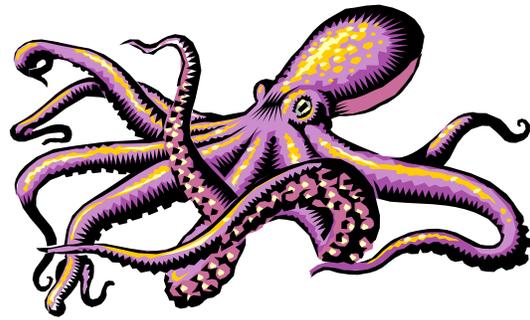
A seahorse is like a monkey...



A seahorse is like a knight...



A seahorse is like a straw...



A seahorse is like an octopus...

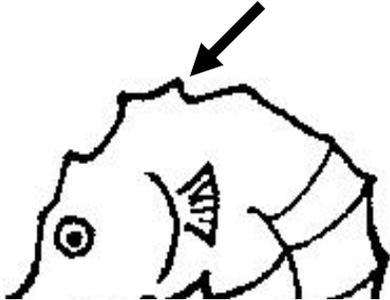


A seahorse is like a scuba
diver...

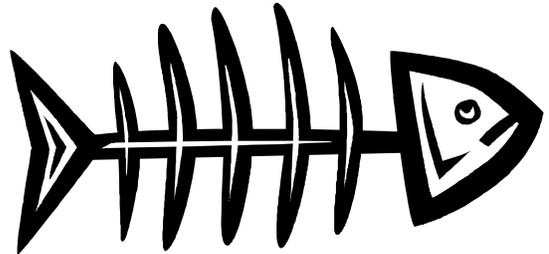


A seahorse is like a panda...

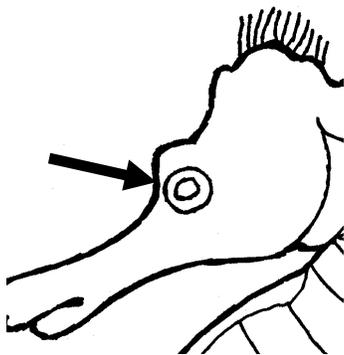
“Because” Simile Cards
Set 1



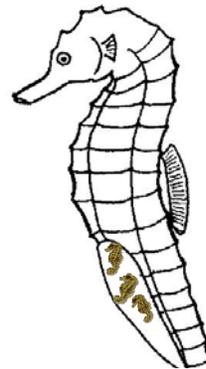
...because it has a crown on its head.



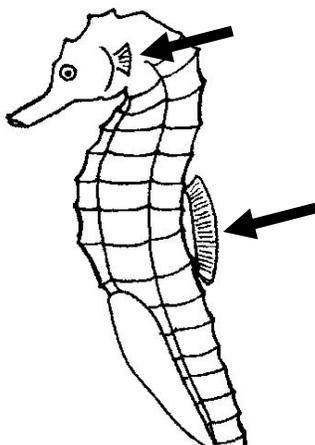
...because it has a bony skeleton inside.



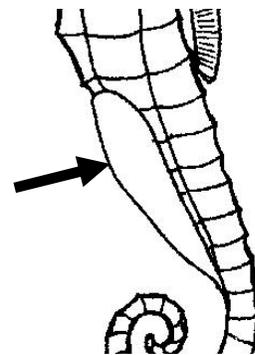
...because it can move each eye independently.



...because the fathers help care for the babies.



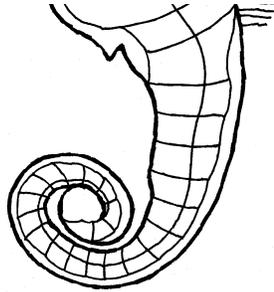
...because it has fins to help it to swim.



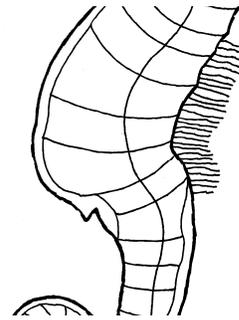
...because it has a pouch to hold its babies.

“Because” Simile Cards

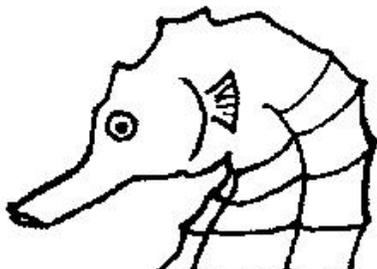
Set 2



...because it has a grasping tail.



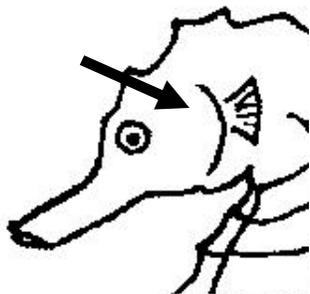
...because it has bony plates all over its body, like armor.



...because it sucks its food through its long snout.



...because it can change the color of its skin to hide.

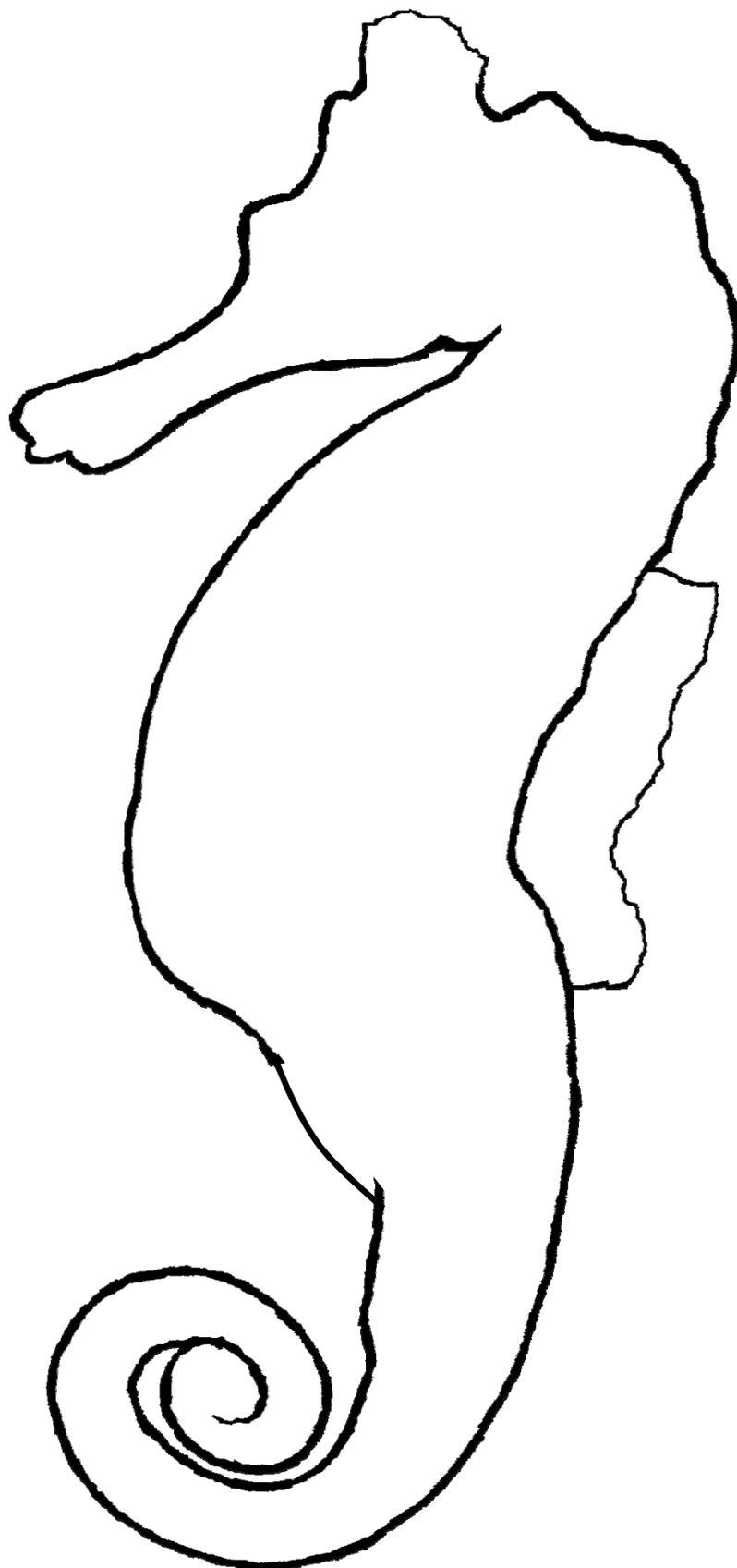


...because it breathes underwater.

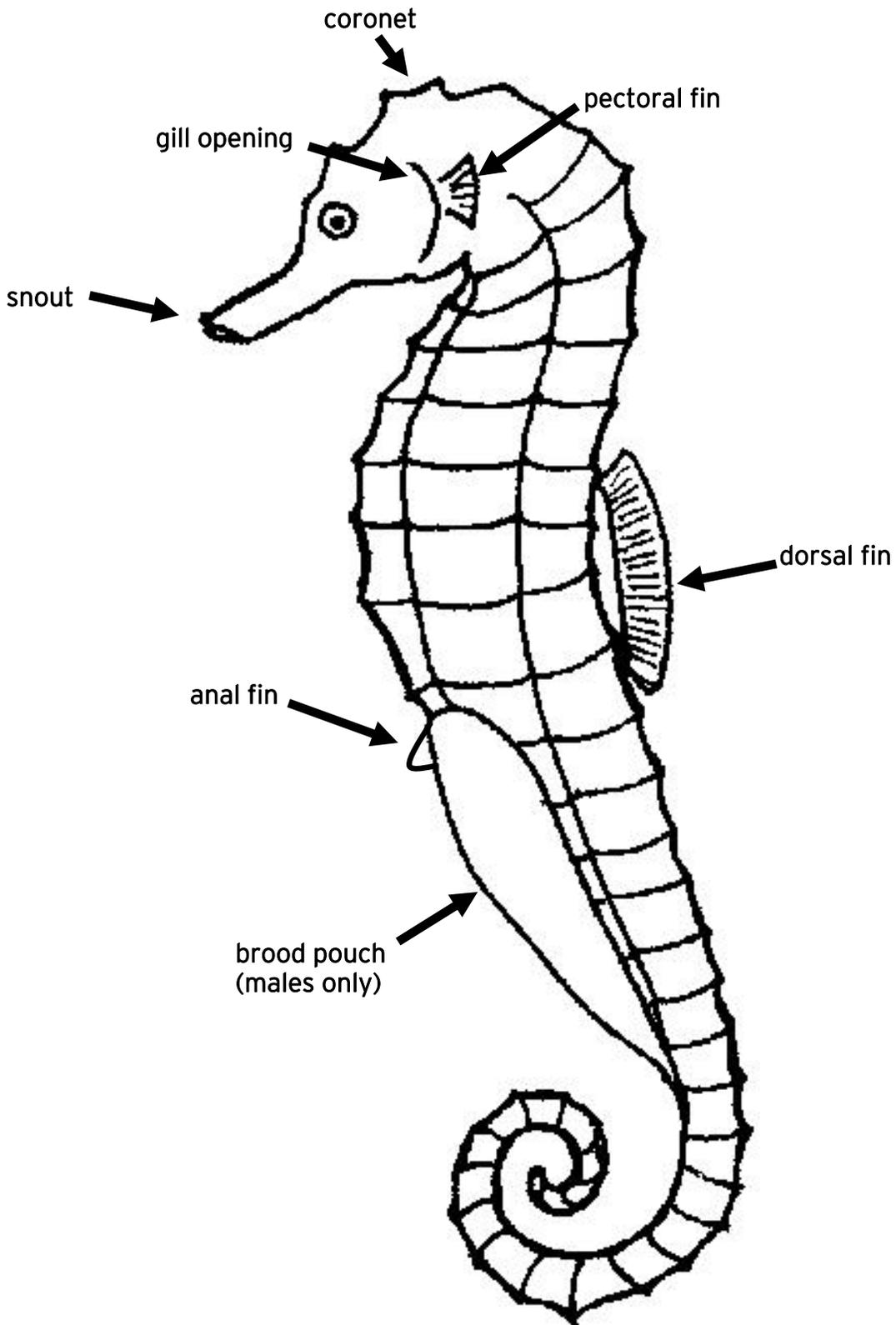


...because it is a threatened species.

**Seahorse Poster
Template**



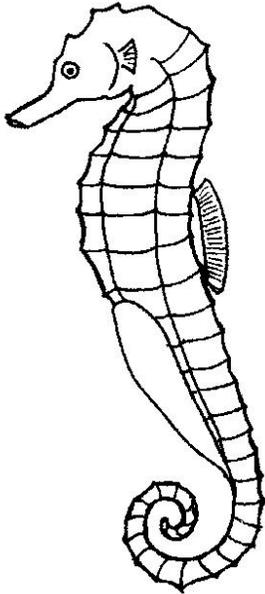
Seahorse Anatomy*



*See Project Seahorse's website (listed in "Resources") for a more detailed anatomy illustration.

**Seahorse Similes
Language Frame**

Name _____



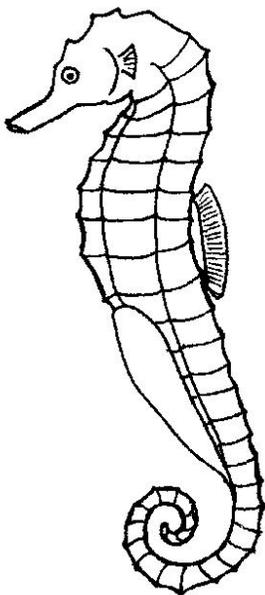
Seahorse Similes

A seahorse is like a _____

because it _____.

I think this would help a seahorse to survive because...

Name _____



Seahorse Similes

A seahorse is like a _____

because it _____.

I think this would help a seahorse to survive because...