

## AQUADEMY LESSON 3: ANIMAL ADAPTATIONS

**ADAPTATIONS** are any characteristics that an animal uses to survive. They can be **PHYSICAL**, meaning the adaptation is a part of the animal's body, or they can be **BEHAVIORAL**, meaning it's something the animal does.

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### W.O.W

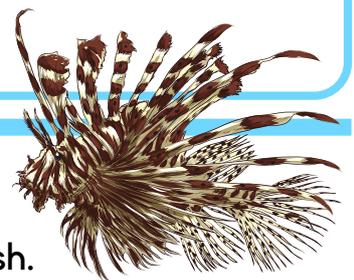
Look at the tank on the right (on the opposite side of the photobooth) in here you'll find a brightly colored fish called the parrot fish. This fish has an adaptation that is both Physical and Behavioral. The Parrot fish uses its specialized mouth-parts to eat coral. Its beak-like mouth is a \_\_\_\_\_ adaptation, while eating coral is a \_\_\_\_\_ adaptation. By eating coral, the parrot fish doesn't have to compete with other fish for food.

#### TASK:

Using the definition of an adaptation, fill in the blanks.

#### WORD BANK

Behavioral  
Adaptation  
Physical



## 2 SHIPWRECK

Here we can find a fearsome predator, the Lion Fish.

**TASK: Observe the Lion Fish, what do you think its adaptations are?**

If you guessed it's fins or spines you're correct! This slow moving fish relies on its large venom-filled spines to protect it. The same adaptations that make the Lion Fish a successful predator in its natural range, make it hard to control in areas outside its natural habitat. The Lion Fish is native to the Indo-Pacific but can now be found in the Atlantic Ocean and Gulf of Mexico, making the Lion Fish an **INVASIVE SPECIES**.

**Why is this a bad thing? [Hint: Read the signs in Shipwreck to find out!]**

### 3 THE DOME

From nose to tail alligators are specially adapted to live in their environment!

The alligator's powerful tail helps to propel it through the water, and can be a powerful weapon.

An alligator's eyes, ears, and nostrils are all positioned on top of their head. When they are in the water they want to be as stealthy as possible, this positioning makes it easier to breathe, see, and hear while keeping their body submerged.



Alligator skin is extremely tough. It is covered with large plates called osteoderms that work like armor to protect the alligator. While the color of their skin helps them to camouflage very well with their environment.

**TASK:**  
Observe the alligators, what adaptations are they using?

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### SHORELINE



This next animal also uses camouflage as an adaptation. In fact, he's so well camouflaged a lot of people don't even know he's there!

**TASK: Can you find the Sand Dab in the Observation Tank?**  
Ask the Educator for help if you get stumped.  
**Is this camouflage a PHYSICAL adaptation, a BEHAVIORAL adaptation, or BOTH?**  
(Circle your answer)

### 5 THE CAVE

**Task: Find and observe the Moray Eels.**  
**Are they FAST or SLOW swimmers?**

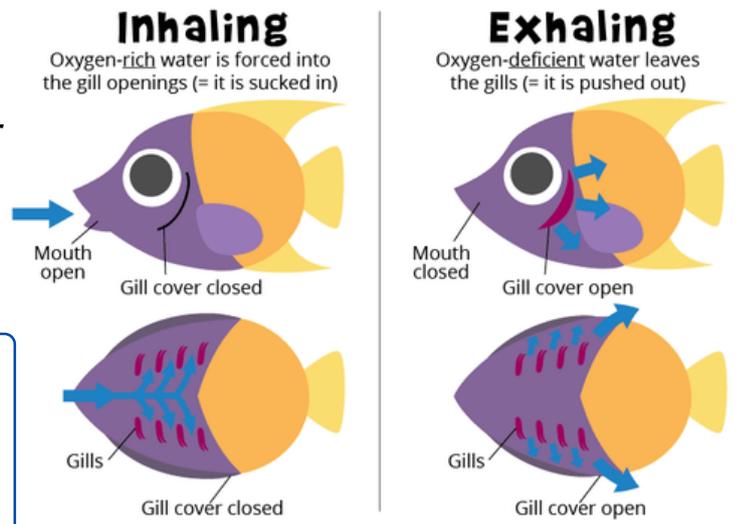
The Moray eel isn't a very fast swimmer so he uses the coral around him to hide and sneak up on his prey. In a short burst of energy he'll quickly move forward and grab his food, making him an **AMBUSH PREDATOR**. Is this a **PHYSICAL** or **BEHAVIORAL ADAPTATION**? (Circle your answer)



## 6 THE TUNNEL

An important adaptation that helps fish live underwater are their **GILLS**. In order to breathe, our lungs help us take oxygen out of the air, and gills help fish take oxygen out of the water.

**TASK:** Take a moment to watch a fish breathe, then watch a shark breathe. What differences do you notice?



**DID YOU KNOW** that not all sharks have to swim in order to breathe? Only some do, like the Grey Reef Sharks, the water flows through their mouth and over their gills as they swim, this is called **RAM VENTILATION**. The White Tip Reef Shark and the Zebra Shark can still breathe even when laying down because they can pump the water over their gills by opening and closing their mouth, this is called **BUCCAL PUMPING**.

## 7 CONTACT COVE



**TASK:** Can you spot any other animals in this tank that might have special adaptations?

**HINT:** Look at the fish at the bottom of the tank, how do you think they build their shelters?

There is a tank on your left hand side as you exit the Shark Tunnel. In here you'll find some fish from a famous Disney movie! These famous fish belong to a group called Surgeon fish because they have sharp spines at the base of their tail, similar to a surgeon's scalpel, they use for defense.



## 8 SUBMARINE

In the first port hole on your right are some seahorses. The seahorse life-cycle is one of the most fascinating nature has to offer! A female seahorse lays dozens, sometimes hundreds, of eggs in a pouch on the male seahorse's abdomen. Called a **BROOD POUCH**, it's a bit like the pouch of a kangaroo, used for carrying young. Depending on the seahorse species, the eggs remain in the brood pouch for up to 45 days, until the eggs are ready to hatch.



**TASK:** Take a moment to think about the kinds of things your grown ups do to keep you safe.

# Final Test!

Take this mini quiz to test your knowledge!

## What is an adaptation?

- A. A specialized body part
- B. A characteristic that animals use to survive
- C. A specialized behavior
- D. All of the above

## \_\_\_\_\_ is an example of a behavioral adaption.

- A. Having gills to breathe underwater
- B. Hiding on the seafloor
- C. Camouflage

## What do gills help fish do?

- A. See
- B. Breathe
- C. Hide

## How does the position of an alligator's ears, nose, and eyes help it survive?

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## Which of the following animals we learned about today is an ambush predator?

- A. The Moray Eel
- B. The Lion Fish
- C. The Stingrays

## \_\_\_\_\_ is an example of a physical adaption.

- A. Camouflage
- B. Hunting at night
- C. Being an ambush predator

## What is an invasive species?

- A. An animal that causes problems with people
- B. An animal found outside it's natural range
- C. An animal that causes problems with other animals

## What adaptation do Surgeon fish get their name from?

- A. Their Colors
- B. Their Spines
- C. Their Diet

**You have completed Lesson 3: Animal Adaptations! Bring this packet to the gift shop to check your answers.**