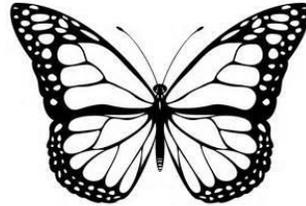


**IDENTIFYING PLANT AND ANIMAL ADAPTATIONS****ANSWER KEY****Instructions:**

Review the provided photos on the iPad. Try to identify as many adaptations for each plant or animal and determine how each adaptation would help it survive. Each photo is numbered. Write down your answers below at the corresponding number. Use complete sentences.

(Docent Note: There can be more answers than provided below.)

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**#1 - Dead Leaf Butterfly**

**Adaptation:** The wings are dull, brown and full of veins -- just like a dead leaf.

**Why does it help?**

This allows the butterfly to hide among the dead leaves on the forest floor.

**#2 - Jaguar**

**Adaptation:** The jaguar is a night stalker.

**Why does it help?**

This allows the jaguar to ambush his pray without being noticed. They would rather not chase their prey if they do not have to.

**Adaptation:** The jaguar has large jaw muscles and sharp teeth.

**Why does it help?**

This allows the jaguar to pierce the skull of its prey. They are the only cats who kill their prey this way. Other cats grab the neck of their prey. Jaguars are known as the animal that can kill in a single bound.

**Adaptation:** Jaguars are exceptional swimmers.

**Why does it help?**

This allows the jaguar to adapt to their environment which includes rainforests and flooded swamps. It also allows the jaguar to cool off.

### #3 - Common Bat

**Adaptation:** Bats have a variety of skeletal adaptations. Like birds, they have reduced and shortened bones, so that they're light enough to take to the air. As mammals, their distant ancestors would have been flightless. Bats' wing membranes are supported by long bones, which actually are highly elongated fingers, which evolved over a long period of time.

**Why does it help?**

This adaptation allows bats to fly.

**Adaptation:** Bats emit pulses of an extremely high-pitched sound -- too high for the human ear to detect -- and wait to listen back for the echoes the sound produces when it bounces off nearby objects.

**Why does it help?**

This allows them to navigate in the caves and at night and also to locate their food.

**Adaptation:** Bats are nocturnal creatures, which mean they're active at night.

**Why does it help?**

This is a useful adaptation for them, as flight requires a lot of energy and could be too tiring for them during the day. Their thin, black wing membranes may cause excessive heat absorption in daylight hours, which could lead to dehydration. In addition, fewer predators are around to threaten bats at night and, for those bats that eat insects, a much larger amount of prey to catch.

### #4 - Kangaroo

**Adaptation:** Kangaroos are able to go for long periods of time without water. They can do this because their digestive tract is able to reabsorb every drop of water from the foods they eat.

**Why does it help?**

This allows them to survive in their hot, dry habitat.

**Adaptation:** Kangaroos are marsupials, meaning they carry their "joeys" in their pouch.

**Why does it help?**

This helps the baby "joeys" survive in the hot, arid and open climate of Australia.

**Adaptation:** The large feet and long tail of the kangaroo is a useful adaptation.

**Why does it help?**

This allows the kangaroos to jump up to 30 feet. The long tail acts as a counter balance.

### #5 - Leaf Tailed Gecko

**Adaptation:** The Leaf Tailed Gecko has bark like skin, large eyes that can be yellow or a brown color, very flat, and his most special trait the leaf like tail.

**Why does it help?**

The skin on the animal is very rough looking and camouflages the gecko into the bark of a tree very well. The gecko sleeps all day and it accomplishes sleeping out of harm's way, by blending into to a tree. The skin pattern on the jaw of the gecko helps to break up the patterns and look more like the bark of a tree.

**Adaptation:** The Leaf Tailed Geckos have special feet. Their feet have two parts to attachment. First they have little claws at the tops of the toes to dig into the surface, as well as having adhesive structures bottom of the feet.

**Why does it help?**

This adaptation allows the geckos to walk on all types of vertical surfaces.

**Adaptation:** The Leaf -Tailed gecko has a unique attachment to its body compared to the rest of the geckos. His tail is large and flat.

**Why does it help?**

The gecko can use the tail to hold himself up on the branch of a tree, by wrapping the tail around the branch. This could be helpful to the animal when attacking a prey or reaching items of use to them. Or they can use it to just hang around and relax.

**#6 - Orca Whale**

**Adaptation:** Orca whales are very fast swimmers, up to 30 miles per hour, one of the fastest in the ocean.

**Why does it help?**

This helps the whales catch their prey.

**Adaptation:** Orca Whales have a large amount of blubber.

**Why does it help?**

This keeps them warm especially in the frigid Artic waters.

**Adaptation:** The Orca whale uses echolocation...series of chirps and whistles.

**Why does it help?**

This allows the whales to communicate with one another as well as locate its prey. Orca whales hunt together in groups and communicate with one another while hunting.

**#7 - Orchid Mantises**

**Adaptation:** It looks just like a flowering orchid found in the rainforest.

**Why does it help?**

Instead of chasing prey, it sits very still on the bloom of the orchid and waits for prey to come to it. When an insect lands on the flower to collect nectar, the mantis grabs it with lightning speed and quickly eats it. This same stillness and camouflage hides the orchid mantis from predators.

**Adaptation:** The mantis has large bulbous eyes set on the side of its head.

**Why does it help?**

This adaptation allows for maximum vision to see prey and predators.

**Adaptation:** The mantis has large and long front legs.

**Why does it help?**

This adaptation helps it to grasp it's pray.

**#8 - Pitcher Plant**

**Adaptation:** The pitcher plant is a carnivorous plant. It has nectar glands inside its cup with secrete a sugary type of liquid.

**Why does it help?**

Not only do the nectar glands create a sugary liquid which attracts insects. The insects go to drink the liquid and fall into the liquid, unable to get out. These glands also produce enzymes which allow the plant to digest the insects.

**#9 - Platypus**

**Adaptation:** The Platypus has flat tail which stores fat.

**Why does it help?**

The storage of fat helps keep the Platypus warm. The flat broad tail is good for swimming.

**Adaptation:** The male Platypus has a venomous spur on each back foot.

**Why does it help?**

This adaptation protector the Platypus from predators and is also used in competitive squabbles with other male platypuses.

**Adaptation:** The Platypus has dense fur.

**Why does it help?**

The dense waterproof fur provides insulation from the cold.

**Adaptation:** The Platypus has webbed feet like a duck.

**Why does it help?**

The webbing on its feet helps it to swim. The webbing also folds in when walking on land.

## #10 - Skunks

**Adaptation:** Skunks have glands underneath their tails where they can spray a very toxic musk.

**Why does it help?**

This physical adaptation protects the skunk from predators. The spray is so strong that it can cause pain and temporary blindness if it gets in the eyes. It also sticks to whatever it hits and the strong smell can linger on its target for months. When threatened, a skunk will turn its back, lift its tail and spray their toxin.

**Adaptation:** Skunks have distinctive bold markings.

**Why does it help?**

This physical adaptation acts as a warning signal to predators that have been previously sprayed. Once they see the markings they will stay away.

## #11 - Polar Bear

**Adaptation:** The polar bear has a thick layer of blubber and dense fur.

**Why does it help?**

A polar bear's blubber can be up to 4 inches (11 cm) thick. The combination of blubber and dense fur provides warmth from the extreme cold arctic weather.

**Adaptation:** Polar bears front paws and hind legs make it an excellent swimmer.

**Why does it help?**

Polar bears are very strong swimmers. Their large front paws allow them to propel through the water while the hind legs act as rudders. They have been known to swim for hours at a time looking for food. They have been tracked swimming continually for up to 62 miles (100 km).

**Adaptation:** Polar bears hibernate in the winter.

**Why does it help?**

Hibernating allows the polar bears to survive when food is scarce and the weather conditions are severe.

## #12 – Sloth

**Adaptation:** The sloth has very slow movements.

**Why does it help?**

Sloths a very limited food source, so they have evolved in a very special matter. Sloths have evolved to waste as little energy as possible. First of all they have a really slow reaction time and movements which make them waste a lot less energy than if they were fast.

**Adaptation:** Sloth's sleep 15-16 hours a day.

**Why does it help?**

Sleeping allows the sloth to use up less energy.

**Adaptation:** Sloths have evolved relaxed muscles and sharp claws.

**Why does it help?**

This helps the sloth to hang on to tree branches and sleep away from the dangers of the forest floor.

**Adaptation:** Sloths have an evolved relationship with the Cynobacteria that lives in its fur.

**Why does it help?**

The Cynobacteria provides camouflage from predators during the wet season.