



Animal Adaptations

In this Adventure, Cub Scouts examine how some animals adapt to the environment and try out some of their techniques like camouflage, keeping warm, and artificial bigness.

PREPARATION:

- This adventure is designed to be done during an outing or camp where Cub Scouts can interact with nature and take their clues from what they see in their environment.
- Print the adaptations poster for your meeting. Depending on the number of Cubs, you might want to make multiple prints and put them around the meeting room on the walls.
- Add to the list of suggested materials. Having a variety of different materials will give Cubs the opportunity to make more decisions and it will also mean that you will have different outcomes at the end. So groups can learn more from observing each other's work.

THE ACTIVITIES:

- For **What Are Adaptations**: Use the poster of adaptations related to this card. The second page of the file explains each picture so you can keep that for your own information and to guide Cubs in figuring out how each of the animals has adapted to its environment.
- For **Disappear in Your Surrounding**: Add more materials to the list depending on the natural setting you will be doing the activity in. In addition to construction paper, you can also use paint and large pieces of white or light colored cloth.
- For **Keep Warm**: To build a sample blubber mitten, fill one plastic bag with shortening to coat all of the surface. Turn the second plastic bag inside out and insert it into the first bag and seal them. Use Duct tape to secure the seal and prevent water from entering the mitten. The fillings that are listed in the materials list are suggestions that can best simulate real life animal insulations. You can also use additional materials like wool, fleece, Styrofoam packing peanuts, etc.





REVIEW:

- Encourage Cubs to think about instances that we as humans have used the adaptation techniques used by animals (for example in the design of airplanes, submarines, swimming

and diving equipment, etc.) Can they think of new ideas we can get from nature to solve our problems?

BACKGROUND INFORMATION:

Adaptations are special features and/or behaviours that enable animals to survive and thrive in their wild habitat. These features are developed, over many generations and allow the animal survive in its habitat (for example adapt to the climate), make the animal better at finding food, and keep the animal safe from predators. All adaptations begin as a random mutation in a single individual that eventually propagates in a population because it increases the "fitness" (can thought of as 'survivability') of the organism. If the adaptation confers an advantage to an individual over another, then that individual will likely survive and be able to pass its genes (and thus its adaptation) onto the next generation, which is why we see organisms so highly adapted to their environment. Some examples are:

- Camouflage: this trait allows animals to hide in their environment from the eyes of predators

- Water retention: this trait allow animals who live in hot and dry environments to store large amounts of water in their bodies.
- Body fat, fur, and feathers: These body covers allow animals to survive in cold temperatures and swim in cold waters.
- Artificial bigness: Some animals can puff up or expand their body to look much bigger than they really are and scare predators.
- Migration: migration is used by a variety of different species. The most common reasons for migration are finding food and a good place to mate.
- Hibernation: hibernation is a way of surviving harsh conditions and scarce resources.



How have these animals adapted to their environment?



Photo by Ansgar Walk/ Wikimedia Commons



Photo by Bouette/ Wikimedia Commons



Photo by Hans Hillewaert/ Wikimedia Commons



Photo by Joydeep / Wikimedia Commons



Photo by CrunchySkies/ Wikimedia Commons



Photo From Wikimedia Commons

For each animal, some of the most notable adaptations are listed below:

Polar Bear:

- They have great insulation.
- Paws, feet and legs help the bear to swim for several hours at a time over long distances.
- They move slowly and rest often to avoid overheating.
- They have clear fur to help them blend with their surroundings.

Camels:

- Their long eyelashes keep sand out of their eyes.
- They store fat in their hump and therefore can last for several months without food.
- Their wide feet make it easier to walk on sand.

Giraffe:

- They can drink up to 12 gallons of water at one time and can last long periods of time without water.
- Long necks allow them to feed among treetops.
- An extra-large heart pumps blood all the way up their long necks.

Insect camouflage:

- Many species of insects have the body shape and colours to give them the ability to hide in their natural habitat and survive the predators.
- Some species of insects can change their colours to blend in with their surroundings.

Birds:

- The shape of a bird's wing makes its flight easier and more efficient.
- Many birds have hollow bone structures that allows for buoyant flight.
- Birds migrate to avoid extreme climates and find food.

Puffer fish:

- These fish can puff up to look larger and fend off predators.
- They also produce one of the most potent poisons among animals.