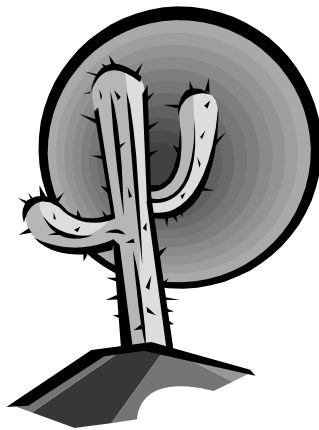


Grade 4

**Arizona Habitats
Desert Adaptations
Your Wild Backyard Exhibit**



Arizona Habitat Types

Almost all of the major biomes can actually be found in Arizona. The following habitat types are highlighted at the Phoenix Zoo:

Desert/grassland

Exhibit animals: desert box turtle, burrowing owl, coyote, collared peccary, pronghorn

Description of habitat: limited water, wide array of grasses and shrubs.

Animal adaptations: ability to retain/store water, light coloration, nocturnal habits

Woodlands

Exhibit animals: mountain lion, Mexican gray wolf, thick billed parrots, bobcat

Description of habitat: cone bearing trees, rocky hillsides, taller trees and bushes, less shrubs and grasses.

Animal adaptations: padded/protected feet, thicker pelt, darker coloration

Riparian

Exhibit animals: Coatimundi, Bald eagle, Desert pupfish

Description of habitat: Riparian habitats refer to the zones along the banks of rivers or other slow or non-flowing waters such as marshes or lakes. Every biome has riparian areas. In Arizona they are considered the most fragile and important habitat type because of their association with water.

Animal adaptations: 80% of wildlife in Arizona relies on riparian habitats in some way.

Adaptations associated with riparian habitats are aquatic adaptations, feeding on fish or aquatic insects, nesting close to water.

Arizona Animal Adaptations

Defense

Obvious defensive adaptations are sharp teeth in the Collared peccary (javelina) and Mountain lion and horns on the Pronghorn.

Feeding

Thick-billed parrots have strong beaks to break open seeds and pinecones for food; Mountain lions, Bobcat, and Great Horned owls have large claws for killing prey; Coyotes have strong jaws for eating a variety of foods

Camouflage

All of the animals on exhibit on the Arizona Trail have acquired coloration that allows them to blend into their environments. Camouflage is particularly obvious in Coyote, Prairie dog, Javelina, Mountain lion, the desert snakes and Burrowing owl. All of them have lighter coloration to help them blend in with the desert environment and handle the hot sun.

Time of activity

Most Arizona animals are mostly active during the cooler parts of the day which is usually evening. A lot of Arizona animals practice some kind of hibernation during the winter, some during the summer.

Water consumption and conservation

Some animals retain water by burrowing into moist soil during the dry daylight hours (all desert toads). Some predatory and scavenging animals can obtain their entire moisture needs from the food they eat (e.g., Turkey Vulture) but still may drink when water is available. Reptiles and birds excrete metabolic wastes in the form of uric acid, an insoluble white compound; wasting very little water in the process (this is why you often see white crystals around the nostrils of reptiles). Mammals, however, excrete urea, a soluble compound that accounts for considerable water loss.

Desert creatures derive water directly from plants, particularly succulent ones, such as cactus. Many species of insects thrive in the deserts this way. Some insects tap plant fluids such as nectar or sap from stems, while others extract water from the plant parts they eat, such as leaves and fruit. The abundance of insect life permits insectivorous birds, bats and lizards to thrive in the desert.

Desert Plant Adaptations

Growth

Leaves serve the function of producing food for plants. The Palo Verde has adapted to produce food in its bark so it doesn't need large leaves. This is why the tree's bark is green.

Small leaves

Tiny leaves, like those found on the Palo Verde, provide less surface area for evaporation and sun damage, allowing the plant to maintain more moisture.

Thick, waxy skin

Thick, waxy skin, very obvious on cactus, allows the plant to maintain moisture for long periods of time. The saguaro cactus has accordion like folds in its skin as well so that it can hold more moisture. During drought times when the saguaro has used up a lot of its water stores, these folds will not be as prominent.

Spines

Spines on desert plants not only prevent animals from eating them but also provide shade to the plant from the hot desert sun.

Growing under other plants

Many plants will begin their growth under the shelter of another plant in order to have maximum protection from the elements. Saguaro cacti will do this. We call the plants that they use for shelter "nurse plants".

Your Wild Back Yard

This exhibit demonstrates the idea of urban sprawl and development and how it affects wildlife species. Below are the details of the exhibit to help you interpret it.

Bedroom

The first window is a bearded dragon displayed in a child's bedroom. Some animals do make good pets, however, before getting a pet a person should do research to know how to take care of the animal and to ensure that the animal was bred in captivity and not removed from the wild (thus depleting wild populations)

Backyard habitat

As you move past the child's bedroom you will see a window displaying various native amphibians in a backyard setting. While at this window speak with the students about sharing their backyard with wildlife. Humans have moved into many wild areas to build homes and we are causing there to be less space for the wild animals. By making your backyard friendly to native wildlife we make it possible for us to coexist. There is a catch, however, in areas where top predators (mainly mountain lions) and large herbivores (javelina, deer) live one needs to be careful about what kind of wildlife they are attracting. A dangerous situation for both the animals and the people could result. It's best to do some research before working with your family on your backyard. Other things like keeping cats indoors and watching dogs while they are outside can help native wildlife to survive.

Disturbed desert

The next window depicts a slightly damaged wild area that is at the edge of a city or neighborhood. There are a lot of these in Arizona. Many animals have learned to exist in these areas and most of them face many more daily threats than those living in untouched areas. These are areas where one can find a lot of dead and injured animals. Resources for these animals are often limited. These are also the areas where humans are most likely to have negative interactions with wildlife because they move into backyards looking for food and water.

Pristine habitat

The last two windows depict animals that have difficulty living in areas where humans live. They need the untouched habitat in order to survive because they cannot adapt well to changes in the environment. Managing our resources will help us to leave more of these areas intact.

Life Cycle of the Saguaro Cactus

1. The saguaro seeds are housed in a fleshy, juicy fruit. As it ripens it splits open and many animals eat the seeds and the fruit.
2. The seeds are then dispersed through wind and the droppings of those animals.
3. The saguaro begins to grow under the protection of a “nurse plant”.
4. As the saguaro grows it stores water inside its waxy skin. Jackrabbits and other small mammals eat this for moisture.
5. After about 60 years the saguaro grows its first arms and flowers begin to bloom off the tips of the cactus. These flowers provide food for bats, insects, and birds that in turn pollinate the flowers.
6. The flowers then turn into fruits which start the growth cycle again.
7. Along with all of this, insects will burrow into the cactus and the woodpeckers will bore into the cactus looking for the insects.
8. When the woodpecker drills into the cactus the plant forms a scar which animals are able to live inside of. Some birds lay their eggs in these holes. Other birds build their nests on top of the cactus.
9. After 150 – 175 years the cactus dies and becomes a home to lizards and insects that live on the ground.