



WILD Kids



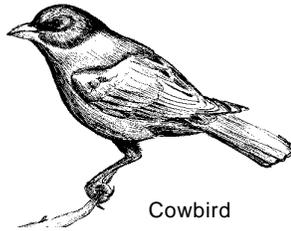
Good Buddies?

A good buddy is someone you share a special relationship with. Many animals and plants have special relationships called **symbiotic relationships**. A symbiotic relationship is a relationship between two organisms. The organisms can be animals or plants. In a symbiotic relationship at least one of the animals or plants receives something it needs, like food or shelter. There are three types of symbiotic relationships: **commensalism**, **mutualism** and **parasitism**. Let's take a closer look at each.

Can you determine who is a good buddy?

Commensalism

In commensalism, one of the organisms benefits - it receives something it needs. The other organism does not benefit, but neither is it harmed. An example of commensalism is the relationship between bison and cowbirds. Cowbirds are insectivores. They eat insects. As bison wander through the grasslands feeding, they stir up insects. Cowbirds follow the bison, eating insects that are stirred up. In this relationship, the cowbird benefits - it gets food. The bison does not benefit, but it is not harmed either by the cowbird eating insects. (Cowbirds were originally called buffalo birds by early trail herders and cowboys. Once bison were eliminated, cowbirds adapted to following herds of cattle, hence their name.)



Cowbird

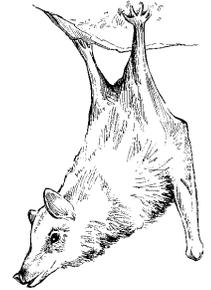
Another example of commensalism is the relationship between the cactus wren and cholla cacti. Cactus wrens often build their nests in cholla cacti. The spines of the cactus help protect the nest from predators. In this symbiotic relationship, the cactus wren receives something it needs - nest protection. The cholla cactus does not benefit and it is not harmed by the nesting cactus wrens.



Broomrape

Mutualism

In mutualism, both organisms benefit. They each get something they need. An example of mutualism is the relationship between plants and their pollinators. Saguaros are pollinated by many different animals such as butterflies, moths, bees and birds. But bats are one of the most important pollinators of saguaros.



Long-tongued Bat

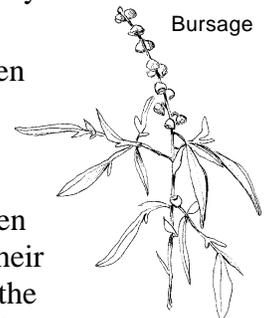
When a bat drinks nectar from a saguaro flower, it gets pollen all over its head, chest and shoulders. When it visits another saguaro for more nectar, some of the pollen falls off, pollinating the saguaro flower. In this relationship the bat benefits by receiving nectar, a high energy food. The saguaro also gets something it needs, it is pollinated.

Parasitism

In parasitism, one organism feeds off another. The parasite is the organism that gets fed. The host is the organism that is fed upon. The parasite benefits, but the host is harmed in this relationship.

Has your dog or cat ever had fleas? Fleas are parasites that feed on blood. A few fleas on a dog or cat will not hurt the animal. But when there are many fleas, the animal suffers. In this relationship the fleas benefit. They receive food. The dog or cat may be harmed by the fleas.

Another example of parasitism is seen in the relationship between two plants - bursage and broomrape. Broomrape is a brown plant that cannot make its own food (only green plants can photosynthesize - make their own food by using the energy from the sun). The broomrape is a root parasite on bursage. It gets its food, nutrients and water from the bursage. In this relationship, broomrape benefits, but the bursage may be harmed.



Bursage

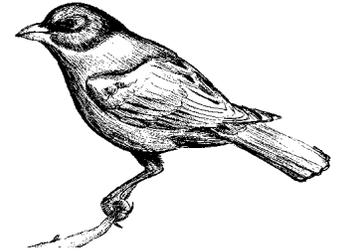
Activity I: Symbiotic Relationships

Below are short descriptions of symbiotic relationships. Draw a colored line between each pair, using red to indicate commensalism, blue for mutualism, or yellow for parasitism.

Orioles nest in trees such as mesquite, palo verde, cottonwoods and palm trees. When the male and female oriole are away from the nest, a female **cowbird** may come and lay one of her eggs in the unattended nest. Cowbird and oriole eggs are about the same size, so the returning orioles do not notice the extra egg. Cowbird chicks are larger and stronger than oriole chicks, so oriole parents will feed the cowbird chick more often than their own. Because the oriole chick does not get fed, it will eventually die.



Oriole



Cowbird



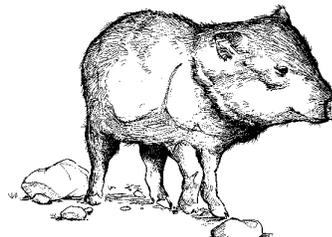
Gila Woodpecker



Owl

Gila woodpeckers use their bills to make a hole in a saguaro cactus to use as a nest. The saguaro develops a hard “scab” around the nest to prevent further water loss. A new nest is built every year, but not always in the same saguaro. The old nest is then used by many other creatures including **owls**, woodrats, scorpions, snakes, and purple martins.

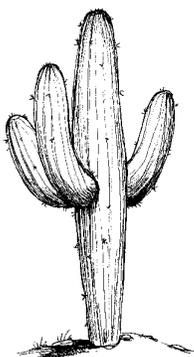
Javelina are herbivores, meaning they eat plants. Some of the plants javelina eat include saguaro fruit, prickly pear fruit and pads, grasses, mesquite beans and **palo verde** pods. Sometimes seeds pass through the javelina unharmed. The seeds are then able to sprout.



Javelina



Palo Verde



Activity II: Symbiotic Relationships II

Young **saguaros** cannot grow in the open sun. They need what is commonly referred to as a ‘nurse’ plant. The nurse plant shades the young saguaro from the hot sun. It also prevents the young saguaro from freezing in the winter. Nurse plants are not harmed by the growing saguaro. Nurse plants include shrubs and trees such as palo verde, ironwood, acacia and mesquite.

Can you show how the six organisms above are associated with the saguaro? Copy each of the drawings and cut them out. Tape them onto another sheet of paper, scattering them over the whole sheet. Then, using the same colors as in Activity I, draw lines between organisms that have symbiotic relationships.