

Welcome/	Staff/Volunteer Names
Introduction:	Today's Topic-Plant Interactions Question: How do plants interact with other plants and animals?
Ice Breaker/ Game:	Good Buddies -A card game illustrating pairs of symbiotic organisms.
Background/ Exploration:	We are going to learn about how plants are affected by other plants, fungi, and insects. We will think about natural interactions, including symbiotic relationships. Predators and prey live in interdependence. Predators thin the prey species' population and make it a healthier group. The prey provides food for the predator. This is a balance of effects, but not a close relationship. Competition occurs frequently in nature between many combinations of species. Plants compete with other plants of the same and different species for air, soil, water, light, and space. This competition may be more or less intense depending on conditions. One competitor usually wins, one may die, or each adapts to the situation. Symbiosis means different organisms living together in close association. This relationship between two species may be helpful to both, neutral for one or both, or harmful to one. If it is helpful to both species, it is called mutualism . If it is neutral to one species, it is commensalism . If the association between species harms one of them, it is parasitism .
Activity:	Good Buddies cont': Let students match up with their "buddy". The student pairs share about their relationship. Ask the students to think of symbiotic relationships found in Iowa. Lichens (Mutualism) -A symbiotic association of a certain alga and a certain fungi. There are many different combinations which form many lichens. Mycorrhizae (Mutualism) -Many (all?) plants have fungal threads associated with their roots, which makes it easier to absorb nutrients due to the increased surface/volume ratio. The fungus absorbs the food made by the plants (starches, sugars) in return. Galls -Out of place bumps or swellings on plants are probably galls. They can be caused by injury, fungi, nematodes (round worms), mites, or insects. Galls are found on different parts of the plant: flowers, leaves, stems, bark, roots. Parasitic Plants -These plants have no chlorophyll, and must get their food from other plants/fungus. Indian Pipe is actually saprophytic, like fungi, not a parasite.
OUTDOOR EXPLORATION:	Hike through woods, prairie, etc. Look for evidence of plant interactions: shelf fungus, mushrooms, lichens, galls, predators, parasites, competition.
Activity:	Gall Hunt-look for different shaped galls on goldenrod, tree leaves, etc. 800/2000 kinds of American galls are found on oaks.

Game: **Fox & Rabbit**

Activity: **Fallen Log Hunt**-roll a decaying log over and look for fungus, lichens, etc.

Closing: Remember when you look at plants that they are connected to other species in many ways!

SEND OFF: Goodbye!

Next Month's topic-Resource Management

TAKE HOME:

Parent Outline
background
activities

Vocabulary

Symbiosis, gall, lichen, mutualism, commensalism, parasitism, carnivorous, competition, mycorrhizae

Background and Activity References for Naturalists and Parents

Insect Galls on Trees and Shrubs. 2004. Iowa State University Extension, Ames. (IC-417)
Extension Publication <http://www.extension.iastate.edu/>