



Crooked Creek

Environmental Learning Center

Volume 3

Issue 9

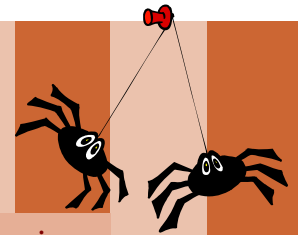
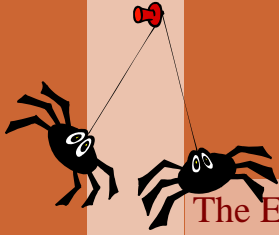
Webs and their Weavers

Among nature's beautiful designs, few can surpass the intricate beauty of a spider's web glistening with dew drops in the early morning sun. And few are so immediately and obviously functional. To watch a fly's unsuccessful twisting and turnings in the sticky strands of a web is to observe what an effective device a web can be for trapping food for its maker.

To many, the spider is far less worthy of admiration than its web, but in fact they are marvelous creatures. Although some people may think so, spiders are NOT insects. They are related in that they are both arthropods., and thus share jointed legs as well as external skeletons, but much of the similarity ends there. Spiders have eight legs, insects six: spiders lack both antennae and wings, both of which most insects possess: spiders have two body parts (cephalothorax and abdomen) and insects three (head, thorax abdomen)

Spiders belong to the class Arachnida, as do mites and daddy longlegs (harvestmen). The scientific name is derived from the Greek word for spider, arachne, which commemorates the name of the legendary Greek maiden who challenged the Goddess Athena's spinning ability, and was turned into a spider.

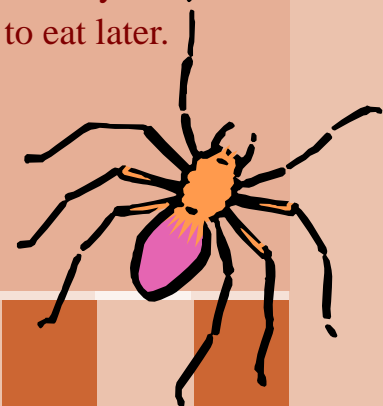


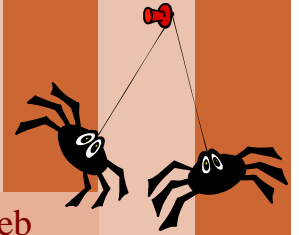
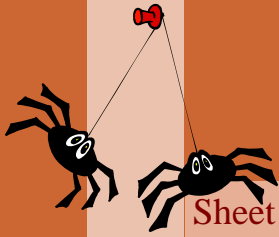


The English word spider is a corruption of “spinder”, one who spins. Almost all spiders can spin silk, and are able to do so from birth. The spinning organs are fingerlike projections called spinnerets that can be extended, withdrawn, compressed and to some extent, aimed. They are located near the end of the abdomen on the undersurface. These spinnerets are tipped with many tiny tubes as well as with “spigots” from which liquid silk comes. The silk, at least seven different kinds, is produced from glands within the abdomen. As soon as the fluid leaves the spider’s body, it hardens quickly to form the familiar silken thread.

Spider silk has considerable strength and elasticity. A rope of spider’s silk one inch thick would be stronger than a steel cable. Some of the threads will stretch one-half of the length before they break. The thinnest lines are only one-millionth of an inch wide and thus invisible to humans, but other lines are much heavier.

Not all spiders spin webs, but those that do, do so in order to catch insects. When an insect is caught in a web, the spider (often hiding off to the side) feels the struggles to escape. A spider can determine from the strength of the vibration whether prey has been caught or a predator is approaching. If an insect is caught, the spider then rushes toward the prey, injects it with a poison that paralyzes it, and eventually ingests it. Spiders have small mouths and cannot eat solid food. They must either inject digestive fluids into the insect’s body or secrete these fluids over it to dissolve the tissues, which they then suck in. Some spiders wrap the insect in silk and save it to eat later.





Sheet webs are easily recognizable. The principal part of the web consists of a more or less closely woven sheet in a single, usually horizontal plane.

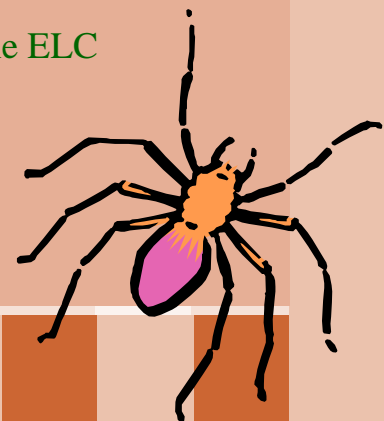
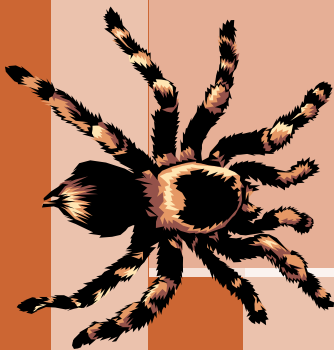
A funnel web is similar to a sheet web, the difference being that the funnel descends from it to the spider's hiding place. The large conspicuous webs often seen on tall grass or suspended between dead tree branches during the summer are ORB webs. They resemble a large wheel, sometimes with a zigzag band of silk running through the middle, which is thought to serve as a lure for flying insects. The characteristic design of this kind of web includes a number of supporting spokes made with dry and inelastic silk on which has been spun a sticky spiral elastic thread. The spider does not become entangled in its web because it steps on only the dry spokes and not on the sticky lines. One of the most familiar orb weavers is the black and yellow garden spider. Some species of orb spiders such as this one remain at the center of the web. Others hide in a nearby retreat where they can feel the vibrations of the struggling prey along a so-called trap line that is stretched tightly from the center of the web to the den. The sensitivity of the spider to these vibrations and its ability to interpret them, is remarkable.

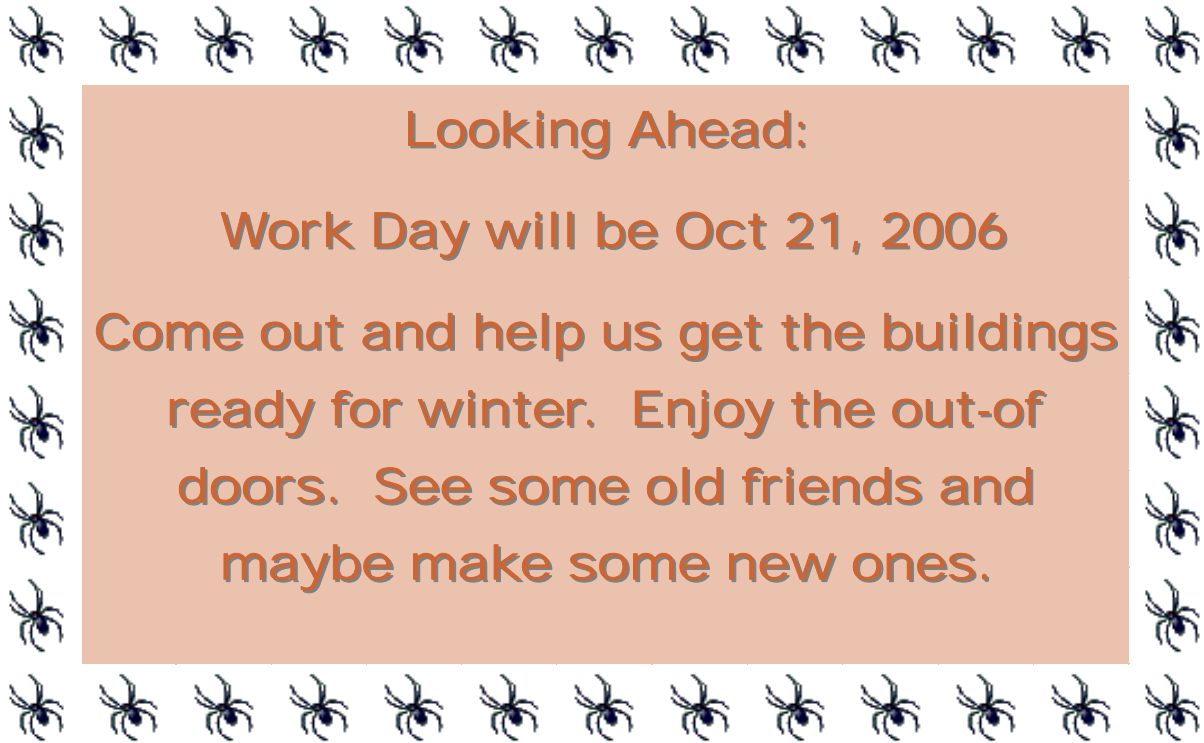
Taken from Hand-On Nature by Jenepher Linglebach

To read more about spiders and their webs, check out some of the new books in our library located in the ELC annex building.

For more information call Dennis at the ELC

724-763-6316





Looking Ahead:

Work Day will be Oct 21, 2006

Come out and help us get the buildings ready for winter. Enjoy the out-of doors. See some old friends and maybe make some new ones.

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More than just two buildings set on 31 acres of park, meadow, and forest, the Crooked Creek Environmental Learning Center (ELC) is an organization dedicated to promoting environmental and resource conservation education in Armstrong County.

Created by Donna Livengood, Americorps member