

# Nature Thing of the Month - Wicked Webs



Wherever you are, there is likely to be a spider within a few feet of you. Spiders are the most successful predators on earth! Spiders have been weaving their wicked webs for some 400 million years!

## **Spider Silk**

Spider silk is amazingly strong and tough. One strand is only one-millionth of an inch in diameter, but several strands of spider silk woven into a thread may be five times stronger than steel! Some spider silk can be stretched to more than two times its original length without breaking.

Wicked webs are made from spider silk, but spiders can use their silk in many other ways. Spiders can produce different types of silk, from up to six different silk glands. There is the all-purpose sticky silk; super-sticky catching silk; silk for attaching threads; silk for wrapping prey; dragline silk for recovering from a fall; silk to protect egg-sacs; and "gossamer" silk for ballooning tiny spiders thousands of feet up into the sky. Each type of silk is a protein, made up of chains of amino acids, produced by special glands in the spider's abdomen.

A web-spinning spider uses only the tips of its legs when creating a web, to make sure its body doesn't touch the web and get stuck. While it's weaving, the spider uses a middle claw and the bristles on its leg tips to hang onto a single thread to keep its balance.

## **Web World**

Orb webs are the most common type of spider web. The orb web looks a bit like a wheel with spokes. First, the spider makes a tight bridge line by releasing a sticky thread that blows with the wind until it sticks to something solid. Next, the spider attaches a loop to the bridge line, pulls down the center of the loop, and spins another thread to form a tight and strong "Y". After making anchor lines along the bottom and sides of the "Y" the spider is ready to make the spoke lines. The spoke lines all meet in the center of the web. Finally, the spider uses its stickiest silk to make the spiral threads, starting at the center of the web and swirling around to the outside. The spokes are stiff, so the spider can feel the vibrations when an insect lands in the web and becomes tangled in the sticky and stretchy spiral threads. The colorful garden spider is known to weave one of the most wicked orb webs!

Sheet webs are flat sheets of silk between blades of grass, twigs of shrubs, or branches of trees. Spiders that create sheet webs also spin a net of crisscrossed threads above the sheet. When a flying insect hits the net, it bounces into the sheet web. The spider,

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which hangs out beneath the web, scrambles to the insect and pulls it through the webbing. Sheet webs last longer than other webs since the spider can easily make repairs to any damaged parts.

Tangled webs look like a shapeless jumble of threads attached to a support such as the corner of a ceiling. Cobwebs are tangled webs that have collected dust and dirt. Cellar spiders, such as the black widow spider and common house spider are known to create this type of web.

Triangle webs are named for their shape. The triangle web is built like the orb web, with spokes and spirals. The spider waits at one end of the web for an insect to land. When it does, the spider shakes the web so the insect is caught and cannot escape. Is that wicked or what?!

## Spider Spotting

If you are brave enough to hike at night, you can have some wicked good fun! Try this with your parents at home, or during your camping trip at an Ohio State Park this fall: Before it gets dark, walk down your favorite trail in the woods, or make a path through your backyard garden or a spot with lots of shrubs or plants. Keep an eye out for spider webs. After dark, walk the area again with a flashlight. Hold the handle of the flashlight alongside your nose, with the light pointing down. Look along either side of the trail, or look toward the plants. Do you see pairs of glowing green dots? Those are spider eyes!

## More Web Wisdom

They may look creepy, but spiders help control many household and garden pests. Strands of spider webs have been used as crosshairs for telescopes and microscopes. Some fisherman in the Indo-pacific ocean use spider webs to catch fish. Spider webs have been used to cover wounds and were believed to have germ-fighting properties.

Many spiders build new webs every day, and eat the old webs which are full of protein. Yum!