

# Spooky Spiders

**So many spiders. They say you are never more than a few feet from a spider.**



Photo by Chuan-Chu Chou

Spiders are everywhere! There are over 45,000 different species of them - but only about 500 species call New Jersey home. Some people say that you are never more than 3' to 10' from a spider. Whether this is true or not, fortunately for arachnophobes (people who are afraid of spiders), spiders are rather shy.

Spiders are unusual in that they can spin silk threads that they use for many different purposes including making egg sacs and as a shield against predators. One key use is to spin webs to catch their food. Spiders use both sticky and non-sticky silk threads in their web designs. Spiders don't get caught in their own webs because they know to move on the non-sticky threads. They have claws on their legs to grasp the threads.

Spiders can be identified by the types of webs they create. The most common web type is orb.

# Orb Web



Photo by Chuan-Chu Chou

Orb weaver spiders are most common. Orb means circular – descriptive of the type of web they weave.

These spiders redo their webs daily and remember places where they previously built them. They hide most of the day. In the evening, they consume the day's web and rest for an hour before crafting a new one in the same or nearby area.

Notice the fine anchor lines that extend from the circular pattern silk threads. An orb weaver spider has to figure out what is nearby to anchor its web.

The spider also has to calculate how much silk it has available and how much is needed to craft this type of web in the space. The spider spins a silk frame around the anchor lines and then creates the spokes towards the center of the orb. Finally, the spider adds spiral lines with sticky silk thread around the spokes to capture its prey.

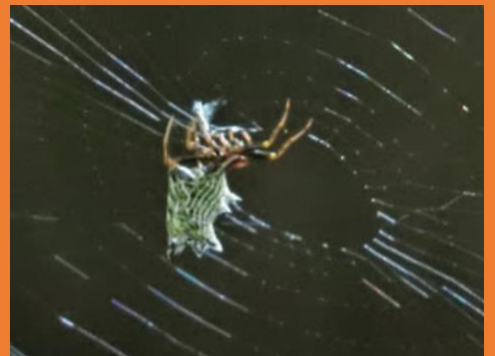


Photo by Chuan-Chu Chou



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### **Sheet Web**

You can find sheet webs strung across bushes or in grass. These webs can be flat or bowl shaped and some build doilies above.

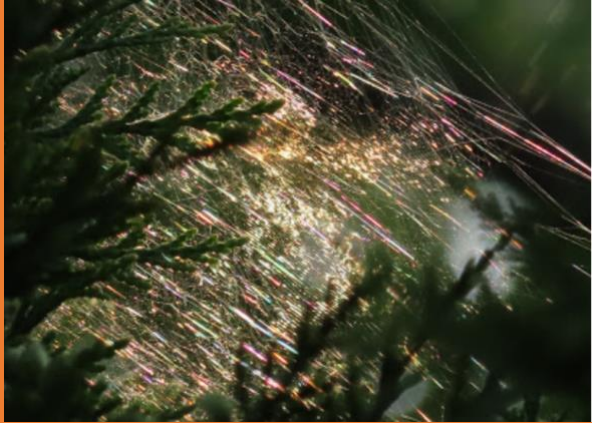
The web system relies upon trip threads above the sheet that knock flying insects down into the sticky mass of silk below.



Photo by Chuan-Chu Chou

### **Tangle Web**

Tangle or cob webs appear to be a messy mass of silk strands. Spiders build them on bushes or in buildings. The webs are secured above by non-sticky silk threads. Sticky silk strands reach down to the ground under tension waiting for unsuspecting prey. These strands are strong as steel but elastic like rubber. When a crawling insect touches the sticky silk, it breaks the tension of the thread. When this happens, the insect is drawn up into the web where the spider is hanging upside down lying in wait.



These spider webs take on a spooky glow in the moonlight!



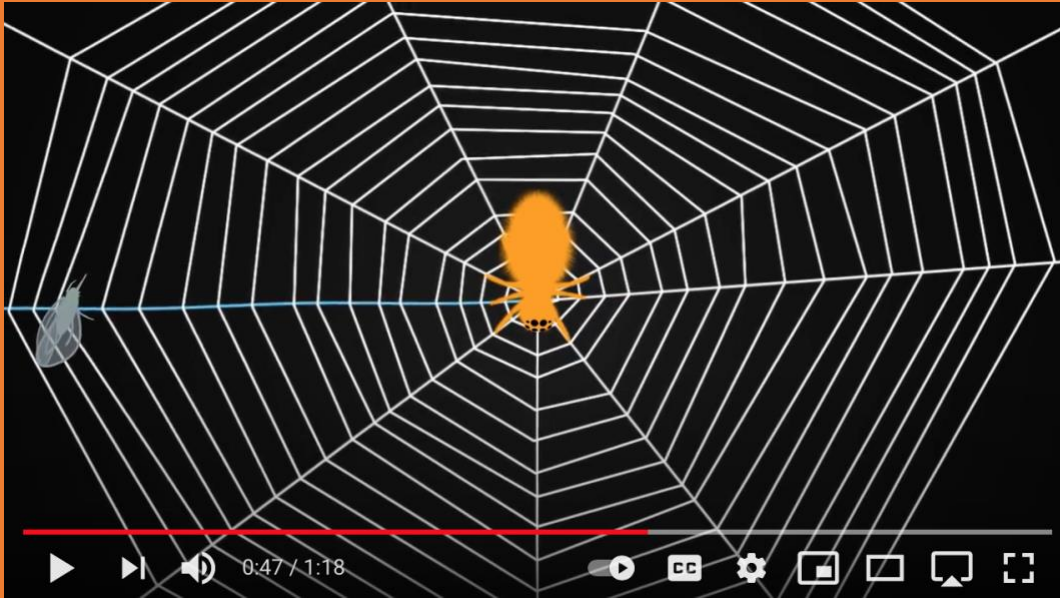
Photos by Chuan-Chu Chou

There are other types of spider webs such as funnel and woolly webs. See if you can find any in the park! Take a photo and send it to us at [FriendsOfBrightwoodPark@gmail.com](mailto:FriendsOfBrightwoodPark@gmail.com).

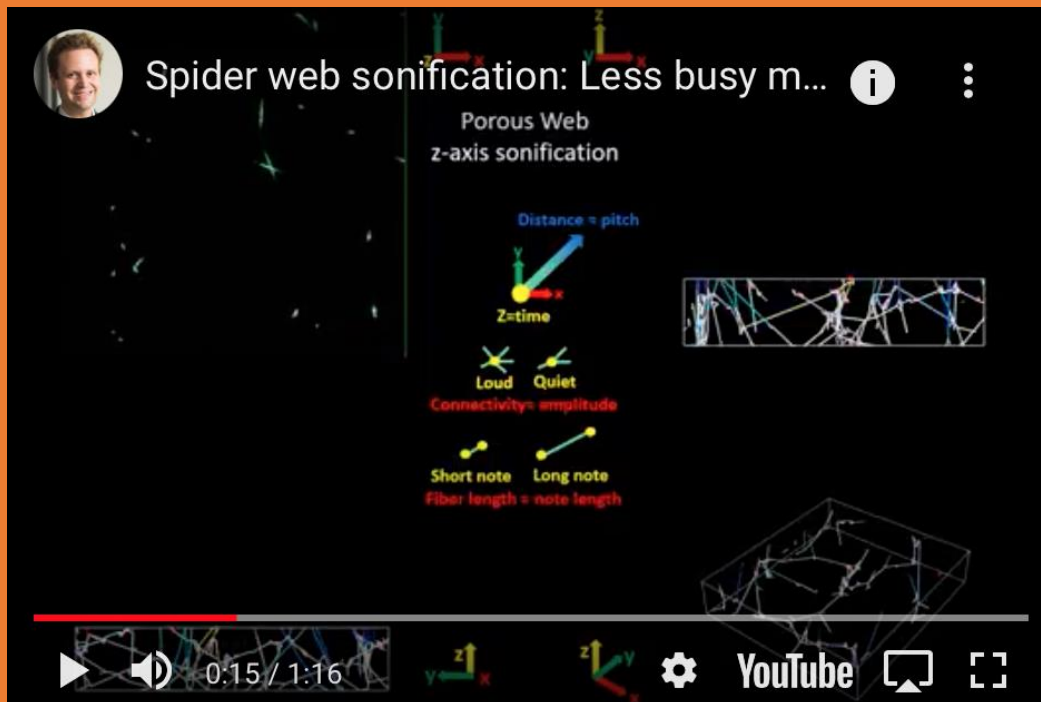
Spider webs are an engineering and musical feat! Since spiders don't see very well, they use vibrational frequencies to find love and food.

This NPR youtube video found at <https://www.youtube.com/watch?v=0EkEsTafD38> explains how spiders tune their webs:





Scientists at Massachusetts Institute of Technology have turned spiderwebs into music. You can listen to the spooky world in a spider web here: <https://www.youtube.com/watch?v=s4QtAQhdU2I&t=15s>



For more information, check out: <https://www.smithsonianmag.com/smart-news/researchers-turn-spider-webs-music-180977506/>