

# 1 LESSON PLAN

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Subject: **Science**

Theme: **Spiders**

Question: **How do spiders make their webs?**

**Content objective(s):** Students will learn about the process that some spiders use to make webs and also learn that not all spiders make webs.

**Language objective(s):** Students will use the simple present to talk about factual information; students will use “can” to talk about spiders’ abilities.

**21st century skills:** communication, creativity, collaboration, critical thinking, information literacy

**Vocabulary:** spider, spin, web, spinneret, silk thread, sticky, dry, anchor threads, radial lines, orb lines

**Background information for the teacher:** Web-spinning spiders are born with the knowledge or instinct of how to make a web. It’s called *spinning a web* and they do it using silk thread that begins as a liquid in their bodies. As it comes out the tail section, or spinneret, it can be sticky or dry, depending on what the spider needs it for. Threads can also be thick or thin. Different kinds of spiders make webs of different shapes and patterns. For example, there are spiders that make circular webs. They fit the category of *orb spiders*. First, the orb-making spider releases anchor threads to attach the web they are going to make to a branch, doorframe, or ceiling corner. Then the spider adds more threads, called radial lines, which support the web. The circular or orb lines, usually sticky, go around and around, attaching to the radial lines. All spiders can make silk but not all spiders make webs. Spiders use their webs to capture their insects, which are their food. All spiders have some kind of poison that they use to paralyze or kill the insects that fly into their webs. Since spiders can’t digest solid food they inject an enzyme into the insect that turns the insides to liquid. Then the spiders suck it out. Spiders are very helpful to humans because they eat harmful insects like mosquitos and pests that eat farmers’ crops. Spiders are in turn eaten by birds, lizards, and wasps.

**Diagrams of how a spider constructs a web:**

[http://ednieuw.home.xs4all.nl/Spiders/Info/Construction\\_of\\_a\\_web.html](http://ednieuw.home.xs4all.nl/Spiders/Info/Construction_of_a_web.html)

**Further information:** <http://science.howstuffworks.com/zoology/insects-arachnids/spider5.htm>

# LESSON PLAN 1

## Lesson:

Show a few pictures of spiders on their webs, using the word *spider* and *web* as you point to those items. Make a semantic web, shaped like a spider, on the board with the word *spider* in the middle. Ask students to give you any facts or information that they know about spiders. Add this information (even if not correct) to the web.

Ask if anyone is afraid of spiders. (Many people are.) Explain that most spiders are too small to be harmful to humans and will not bother you if you leave them alone to do their work.

Write the following short reading text on the board or create a handout for each student.

Spiders spin webs using silk thread. The thread comes out of the back of the spider's body from a place called the spinneret. The spider can make the thread sticky or dry. All spiders can make silk thread but not all spiders make webs.

Read and explain the information from the above text about spiders, making sure that students understand and can pronounce the underlined words. Have students practice reading the text with a partner.

Draw an orb spider's web on the board as you talk. Label the parts of the web (anchor threads, radial lines, orb lines). Explain the beneficial purpose that spiders serve in nature.

Distribute black paper and white chalk to students so that they can draw their own webs and spiders. Have them follow the web-building method that spiders really use or create their own type of web. Then have students tell the class about their spider and its web. They can even give their spider a special name.

Give students these thinking questions to discuss in small groups or with a partner.

- What can a spider do if it doesn't catch any insects?
- Do you think that spiders rebuild their webs in the same place or do they move around?
- How do spiders find a partner?

### EXTENSION

Have students research (1) other kinds of webs that spiders make or (2) spiders that don't make webs at all.