



## Activity: Building a Spider Web / Characteristics of Living Things



Grade Level(s)	Timeframe
K-2	30 - 60 min

### ABSTRACT

This workshop ties in with the themes "Living things grow, take in food to create energy, make waste, and reproduce" and "Living things have basic needs (air, water, food, and shelter) that are met from the environment".

- Introductory comments/discussion: 10 minutes or less

- Design and construction of spider web: 20-30 minutes
- Testing with insects: 10 minutes

It can be condensed to fit into a single block, but I prefer to use two blocks so the students aren't rushed.

\*\*Librarian's Note: Throwing can be part of gym class, and many simple games involve catching things with nets.

### **SUPPLIES AND EQUIPMENT**

- Paper & pencils (for sketching designs)
- 8x10 piece of corrugated cardboard (one per student)
- thumbtacks
- string
- simulated insects (see details)

### **GETTING READY**

Each student is asked to sketch a design of a spider web that would be effective at catching prey (food). After the designs were completed (optional discussion about some common themes or unique attributes observed during the design phase), each student is given a sheet of corrugated cardboard (approx 8 x 10).

A pile of thumbtacks is provided, and the students build their design (Grade 1s usually find this hard and improvise, ending up with something different from their original design, but that's OK).

Students insert the pins at various points on the cardboard, and loop the string around the pins (students will usually need help to tie knots every now and then since looping the entire length without knots tends to cause sagging and drooping).

Once the string is laid out and secured across the pins, the students coat the string with a thin layer of white glue (usually a shared pot per table and one paintbrush per student).

For the simulated insects, I prepare (in advance) several dozen small (1"- 2" square) paper airplanes using black construction paper (alternately students can make their own insects/projectiles with construction paper and have them ready before applying the glue to the string).

The paper insects were launched (either tossed by hand or propelled gently with an elastic) at the web from about 12" - 16" away from the target. Students are each given a fixed number of "bugs" and record how many stick; this basic data collection helps with a discussion of what designs were most effective, and what could be done differently/better to improve the designs