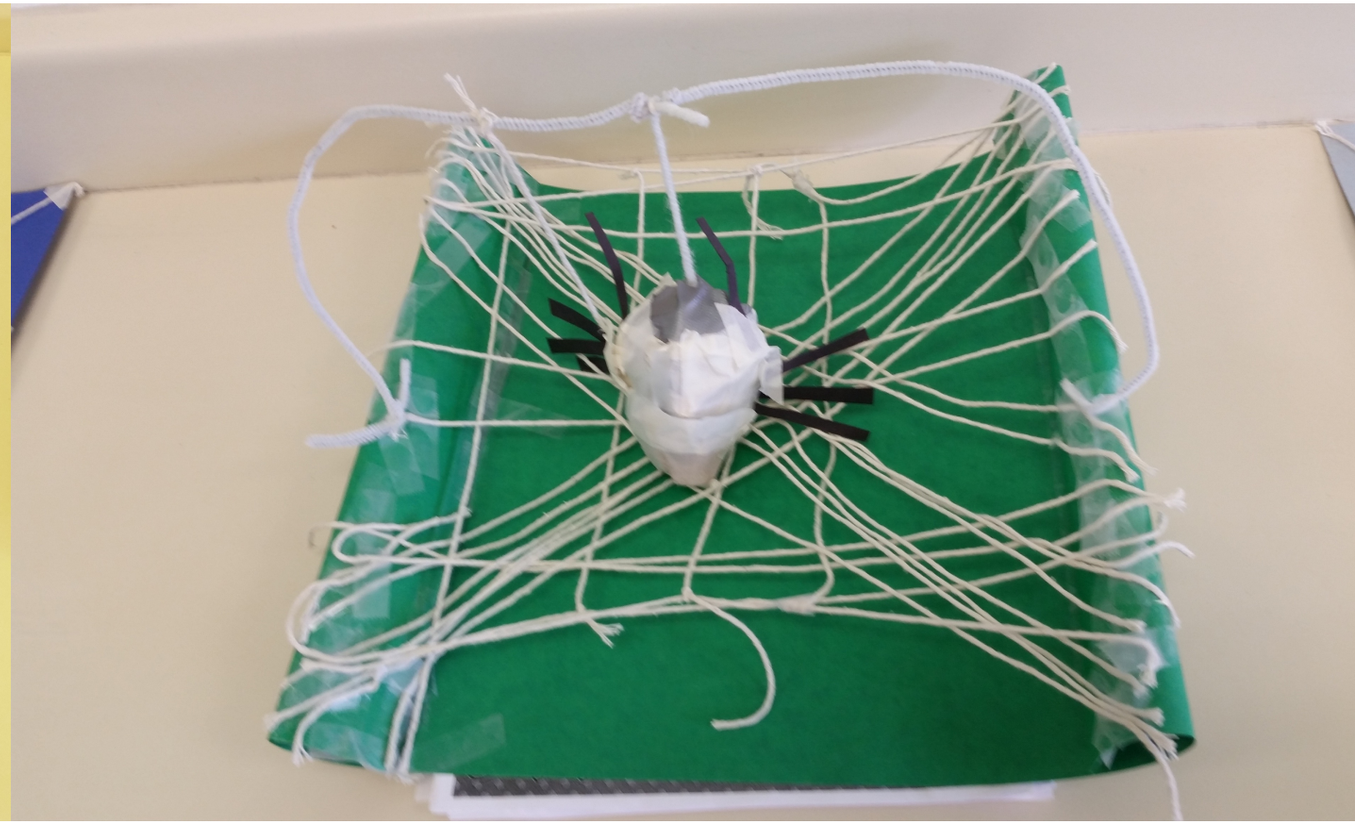
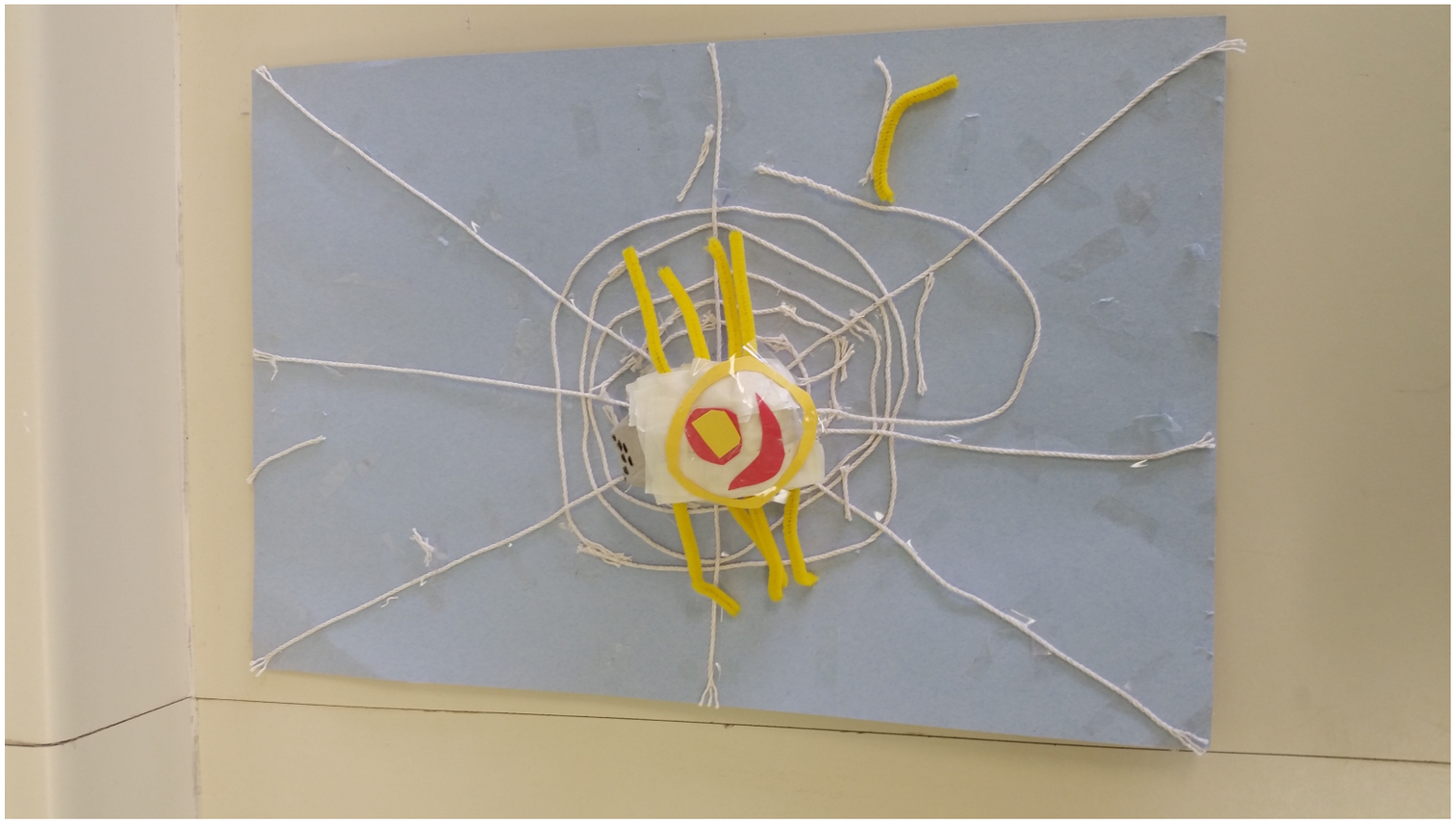
Spider Webs

Informational Reading and Engineering Challenge

for upper elementary grades

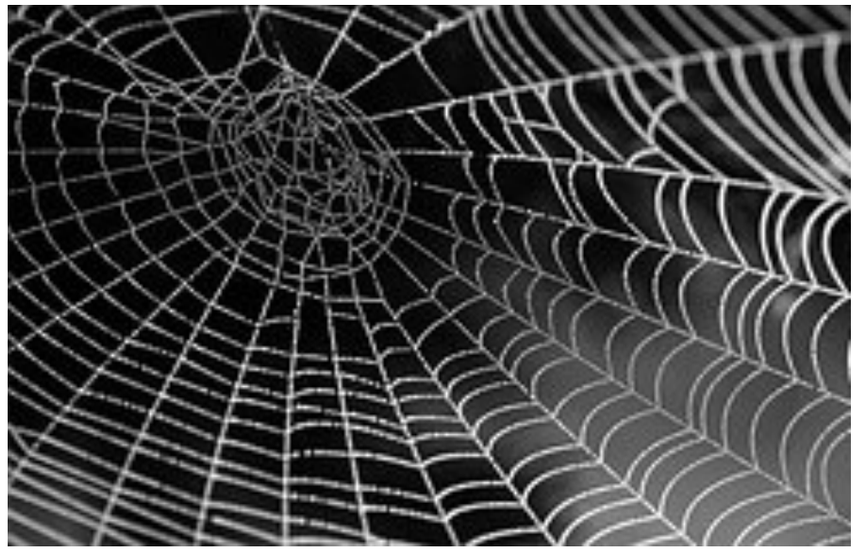


Samples of group projects



Spider Webs

There are about 40,000 types of spiders. They live everywhere except Antarctica. These arachnids have eight eyes which play a role in keeping them safe. Spiders also have eight jointed legs. They have spinnerets which are a silk spinning organ found on the tip of the spider's abdomen. Spiders spin four different types of webs.



The most common type of web is an orb web. These spiral wheel-shaped webs are found in forests, fields, gardens, or hanging between buildings. It takes a spider about an hour to build its web. Orb webs are usually made at night. Insects fly into these webs because they don't see them. This predator is usually waiting in the center of the web to catch its prey. It takes a lot of energy to construct this web. The spider takes down most of it in the morning by eating it. The spider needs the protein from the web, so it will have enough energy to build another web that night.

Another type of web is a tangle web. This web is a shapeless jumble of threads. They are attached to a support. Often times you see them in the corners of ceilings or even corners of floors. They are also known as cobwebs and collect dust and dirt.

Funnel-web spiders build funnel shaped webs outside in short grass or in bushes. Their webs have a flat surface for trapping insects and a small funnel-like tube that leads to a silk burrow. The spider hides in the burrow and waits for its prey to touch the flat web, and then it shakes the web, trapping the insect. Then the spider takes it into the funnel to consume.

Sheet webs are like a hammock. They are flat sheets of silk found between blades of grass. They are most often seen on dew-covered lawns, but they can sometimes be seen between branches of shrubs and trees. The spiders that spin tangle webs also spin a line above the sheet known as a tripwire. When an insect hits this line of silk it falls down and lands on the sheet web. This predator is usually hanging underneath the sheet waiting for its prey. The spider delivers a lethal bite, then pulls the insect through the web, and wraps it in silk.

Name: _____ Date: _____

Title of reading: _____

The thing that I found the most interesting: _____

_____

Two other facts that I learned while reading:

1. _____
2. _____

A question I have after reading:

_____

Vocabulary Map:

Definition of the word: _____

_____

word from reading	Illustration of the word and word in a sentence:

Create a Spider Web and Spider Challenge

Challenge:
- Using what you know about spiders and spider webs, design and make a web and spider to go with it with only the tools and materials provided.
- The web must be at least 10 inches across.
- The spider must be smaller than 6 inches.
- The spider must be attached to the web.

Tools:
- scissors
- ruler
- hole punch or push pin for making holes
- computer or iPad for looking at spiders and webs

Materials:
- construction paper of various colors (limit 3 pieces)
- egg carton (cut in 12 sections)
- pipe cleaners (limit 3)
- brass fasteners - limit 1
- yarn and string
- tape and glue

* Depending on the make up of the class this can be done independently, with a partner, or in a small group,
* You can also put time parameters on it if you want to.

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Name: _____ Date: _____

The Engineering and Design Process

Ask: What is the problem? Write it.

_____

_____

_____

Plan: Draw a diagram.

Make a list of materials you will need.

_____

_____

Imagine: Brainstorm ways to solve the problem.

_____

_____

_____

_____

Create: Follow the plan and make a model.

Improve: What works? What doesn't? How can we make it better?

_____

_____

_____

_____

_____

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