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Life Science
First Grade
Spiders

Along Came a Spider...

Objective

The main goal of this lesson is to introduce the students to the different characteristics of spiders through the use of visual representations and a hands-on activity where the students construct their own spider. The lesson is also meant to encourage group interaction since the students will work together to answer spider and animal-related questions in order to construct a giant spider web. Students will demonstrate critical thinking skills as they incorporate their knowledge of spiders to properly create an edible representation of the well-known Arachnids.

QCC/GPS

S1L1- Students will investigate the characteristics and basic needs of plants and animals
S1L1.d- Compare and describe various animals-appearance, motion, growth, basic needs
S1CS4.a- Use a model-such as a toy or picture- to describe a feature of the primary thing

Materials

- Animal Encyclopedia book for students to write facts (optional)
- large Jet-Puffed marshmallows (enough so each student has two)
- toothpicks
- miniature M&Ms
- pretzel sticks
- small, plastic sandwich bags
- ball of white yarn
- giant stuffed animal spider (not necessary but goes great with the big spider web)
- either photographs of spiders or spiders that have been preserved in ethanol (these can be found at the Georgia Natural History Museum)
- skin of a tarantula (also at the G.N.H.M.)

Time Requirement

The entire lesson lasts about 30 minutes (I taught four groups of 3-4 students for 30 minutes each), but review and the building of the spider web could allow the lesson to be performed for a longer period of time. The spider web would also look cooler with more people.

Background Information

Prior to this lesson, I had covered animals for the past five weeks. Each student received an Animal Encyclopedia book where they wrote down facts about the different classifications of animals every week. Before the students built their own spider, the students wrote down spider facts as we discussed the different parts of spiders, the purpose of spider webs, what makes spiders different from insects, and what spiders eat. I also showed them preserved spiders (a tarantula and two orb weaving spiders I got from the Georgia Natural History Museum) and named the different body parts.

Preparation

Prior to teaching the spider lesson, the materials needed to build the edible spiders must be assembled into individual plastic bags for the students so everything is kept together. A bag should be

prepared for each student in the class. Each bag should contain 2 large Jet-Puffed marshmallows, half of a toothpick, 8 pretzel sticks, and 2 mini M&Ms. You should also prepare a bag for yourself since it will help in the demonstration of the assembly of the spider. I also recommend bringing extra marshmallows, etc. in case a student accidentally eats their science project. If the students are receiving notes on spiders, fill-in-the-blank notes save lots of writing time during class. I got spider notes online and talked with Dr. Smith at the G.N.H.M. The notes should be printed out beforehand. Also the ball of white yarn (Michaels craft stores have lots), stuffed animal spider, and any other visual aids (preserved spiders and tarantula skin for example) should be obtained beforehand. If preserved spiders cannot be found, plastic spiders (like those used for decoration at Halloween) might make a good substitute.

Safety

The students can eat every component of the spider except for the toothpick. The students should be told to remove it and throw it away before they ingest their hand-made spider. If preserved spiders are being used, the students should be told to handle the glass jars carefully and use both hands when observing them. The students should be told not to open the jars or shake them. If a tarantula's shedded skin is being used, the students should be told to handle it gently since it is very fragile.

Procedure

First I had the students fill in the notes I had made for them and asked them questions about the characteristics, habitat, and behavior of spiders. Then I showed the students the preserved tarantula and orb weaving spiders along with the tarantula skin and explained the various body parts that are contained on the two body segments of spiders (abdomen and cephalothorax). Then using the information the students just learned about the construction of a spider, I had them make their own edible spider. I gave each student a bag, told them not to take anything out unless I instructed them to do so, and reinforced the fact that they could not eat anything till they had made a spider. With my own personal spider building materials, I had the students take out both marshmallows and the half of a toothpick. I showed them how the toothpick was to be inserted half way in one marshmallow and that the other marshmallow was then placed over the other exposed end of the toothpick. I asked the students what the two marshmallows represented, and they represent the cephalothorax and abdomen. Then I instructed the students to take out the 8 pretzel sticks and asked them what they thought the pretzel sticks represented and where they go on the body of the spider. The students should respond that the pretzel sticks represent the spider's legs and four pretzel sticks go on each side of the cephalothorax (simply on just one of the marshmallows). Finally, I asked the students to remove the 2 M&Ms from the bag and once again inquired as to what they represented. The M&Ms serve as the spider's eyes, but it should be explained that spiders contain 6 to 8 eyes. (Two eyes were used for clarity and made the spider treats look cuter). The eyes should be placed on the front of the cephalothorax. The students can then eat their spiders! The students really enjoyed this part of the lesson!

Possible Questions

- ☞ What do spiders eat?
- ☞ How many legs do spiders have?
- ☞ How many body segments do spiders have compared to insects?
- ☞ Why do spiders spin webs and where does the web come from?
- ☞ Why don't web-spinning spiders stick to their webs?
- ☞ Do spiders give birth to live young or do they lay eggs?

Assessment

To evaluate how much the students learned, I had everyone sit in a circle on the floor and pulled out the ball of white yarn. I explained that we were going to make a spider web. I held onto the end of the yarn and threw the ball of yarn to one of my students. I then asked the student a question pertaining either to spiders or one of the other animal groups we covered. When the student got a correct answer, the student also held onto a piece of the string, threw the yarn to someone else, and asked another question. (I helped give the students clues if they were unsure of an answer). Once a fairly complex web was created, I said “Alright now you know what lives on big webs...big spiders!” I then pulled out the large, stuffed spider out of the bag I had hidden it in and threw it onto the web. The students screamed, but laughed when they found out it wasn't real. This review exercise was a great way to get all of the students to actively participate in the lesson.