Investigation Thirteen - What's Bugging You?

Standard V Students will understand the physical characteristics of Utah's wetlands, forests, and deserts and identify common organisms for each environment.
Objective 4 Observe and record the behavior of Utah animals.
Intended Learning Outcomes 1. Use science process and thinking skills 2. Manifest scientific attitudes and interests 3. Understand science concepts and principles 4. Communicate effectively using science language and reasoning

Standard V

Objective 4

Background Information

Most students think that a spider is an insect. Spiders and insects are both invertebrate animals. Some invertebrates have a tough covering on the outside of their bodies. This covering is called an exoskeleton. This group of animals are known as arthropods. The characteristics or arthropods included jointed legs and a segmented body. The arthropod group is divided up into different families of insects, spiders (arachnid), millipedes and centipedes and shrimp, lobster and crabs. Insects make up most of this group. Even though spiders are part of the arthropods group, they are very different from insects. Insects have six legs, three main body parts, one or two pairs of wings and two antennae. Arachnids are also arthropods. Spiders, crabs, scorpions and ticks are examples of arachnids. They have eight legs and only one or two main body sections. Most arachnids do not have wings and they do not have antennae.

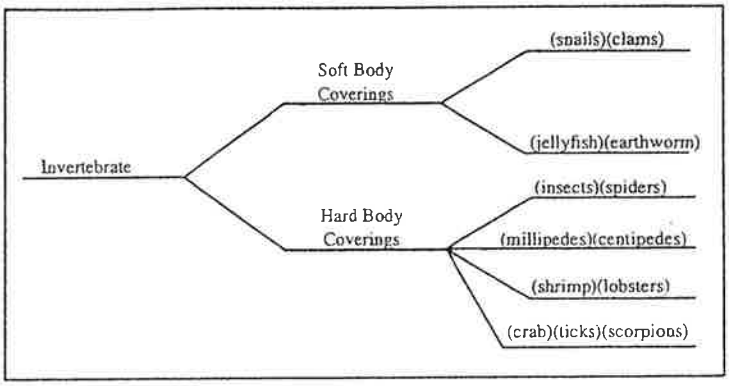
Invitation to Learn

Bring in live and/or dead examples of spiders and insects. Set up live insects and spiders in their environment to give the students a chance to observe the insect moving around. Dead insects will give the students a change to closely look at the insects' and spiders' bodies. Let students look through the magnifying glass to make observations. This will give you an opportunity to make an assessment of students' prior knowledge.

Instructional Procedure

Materials
- Real examples of spiders and insects
- Hand lenses
- Worksheet
- Resources of insects and spiders

1. As a class, tell the students that they will be learning about part of the invertebrate group. Review the characteristics of invertebrates.
2. Use the overhead or construct on a dry board the following diagram. (Do not include the animals in parentheses.) Review and discuss the characteristics of the two sub-categories.



3. Brainstorm with the students the families/groups of animals that fit into both categories. Record them on the board in their proper categories.
4. Tell the students that they will be classifying two groups: spiders and insects.
5. Handout the spider/ant workheets. Ask the students to look for similar and different characteristics. If possible let the students look at live and dead insects and spiders as part of their resources.
6. Bring the students back together and discuss their findings. The students must be able to justify their reasoning of separating the bugs. For your information a list at the end of this activity has been provided. Complete the Venn diagram for the spider and ant.
7. Have the students answer the following question in their journal. Journal entry: Today I learned about insects and spiders. When I look at a bug, how can I determine if it is an insect or a spider?

Curriculum Extensions

Science-

- Have all of the students bring in one dead bug they have caught. (Make sure that they are careful about poisonous bugs.) Make a bug collection by pinning all the bugs to a cork board. Let the students label the bug that they brought in. Make sure you have some resourceful books handy in case someone brings in an uncommon bug. (ILOs 1, 2, 4)

Language Arts-

- Literature - *Charlotte's Web* by E.B. White. How does the spider, Charlotte, interact with her environment? What part of the story is true to facts about spiders, and what parts are fictional? (Standard VIII, Objective 2)

Assessment Suggestion

- Show the students a picture of an uncommon insect or spider. See if they can follow the same characteristic of classification. A good example would be a scorpion, which is an arachnid. See if they can place a scorpion with a spider.
- Give the students a Venn Diagram to show their compare and contrast of spiders and insects.

Resources

Websites:

- www.enchantedlearning.com

Books:

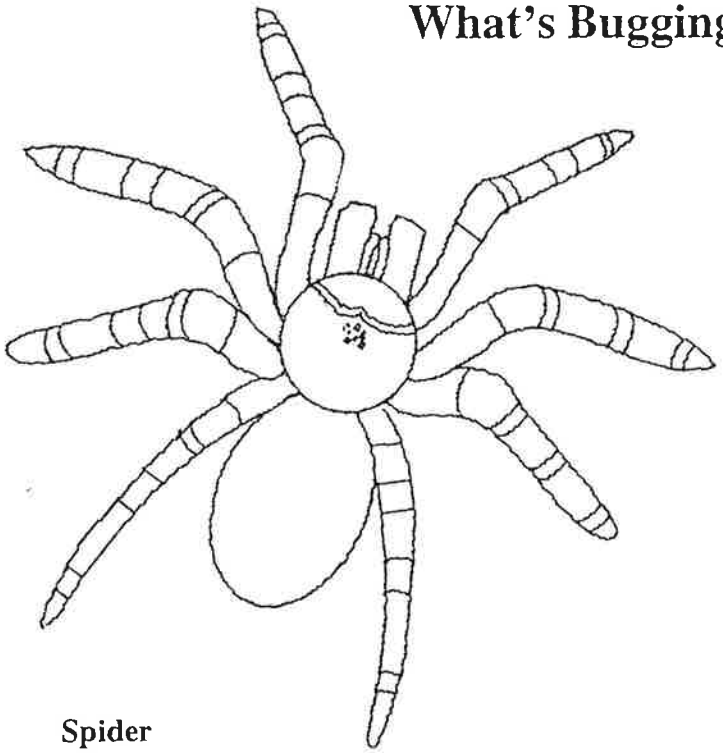
- *National Audubon Society, First Field Guide, Insects*, Scholastic. ISBN 0-590-64008-9

Homework & Family Connections

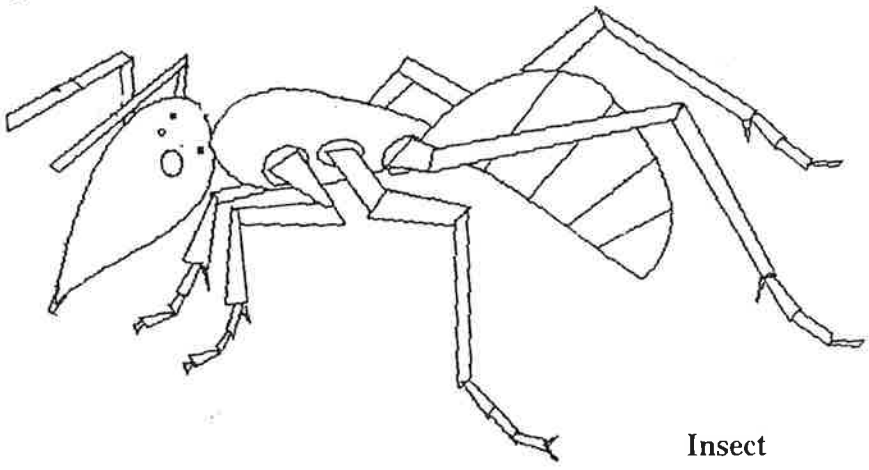
- Go to the public libray and checkout any invertebrate video to watch as a family. Learn of the habitat and habits of the invertebrate. Discuss it with the family and write notes about the invertebrate. Share it with your classmates.
- Look for different invertebrates in your yard. Take pictures of them or have a field guide book to identify them. Write down their names and look them up in a resource book to learn more about them.

Name _____

What's Bugging You?



Spider



Insect

Characteristics

Spider: _____

_____

_____

Insect: _____

_____

12.2.76

Insect
Spider