

Bug Hunt

Standard IV

Students will gain an understanding of Life Science through the study of changes in organisms over time and the nature of living things.

Objective 2

Describe the parts of living things.

Intended Learning Outcomes

Communicating Science:

Communicating effectively using science language and reasoning

Content Connections: Math and Language Arts

Background Information

Animals include many different kinds of creatures including insects. Insects are invertebrates, which lack backbones. Ninety-five percent of all animals are invertebrates. Some, like worms, have soft bodies with no bones at all. Others, like snails, have soft bodies, but carry a hard shell for protection. Soft-bodied invertebrates that live in water or on land are grouped as mollusks. Those invertebrates that have tough coatings on the outside of their bodies (exoskeletons), jointed legs, and a segmented body are called arthropods. Insects, spiders (arachnids), centipedes/millipedes, and so-called 'bugs', shrimp, lobster, and crabs (crustaceans) are all arthropods. There are over 900,000 species of insects, which makes them the biggest group of arthropods. Insects have distinctive features, which include: three body parts (head, thorax, and abdomen), eyes, mouth, antennae, six legs, and most of the adults have wings. The young do not look like the parents.

Research Basis

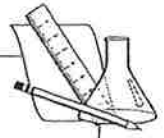
Stein, M., McNair, S., & Butcher, J. (2001). Drawing on student understanding. *Science And Children*, 38(4), 18

Using artistic expression as a tool for learning supports the standards by enhancing students' abilities to communicate science explanations, engage in science as a means for explanation, and communicate their ideas to the public and to their classmates.

Reyner, A. (2005). Art influences learning. *Early Childhood News*, 17 (5), 21.

Art is an outstanding tool for teaching ... academic subjects such as math, science, and literacy. When children study any given concept, they learn it better and retain it longer if they do an art activity that reinforces that learning.

Connections



Materials

- My Bug Hunt (2 per child)
- Pencils
- Magnifying glasses
- Bug collection/viewing containers
- Large chart paper
- Insect tweezers
- Laps boards or clipboards
- Drawing paper
- What Do Insects Do?*
- What Is An Insect?*
- Insect Song*
- Colored butcher paper
- Found objects- (bolts, washers, chenille pipe cleaners, ornament hangers, paperclips, fabric, paper, googly eyes, and beads)

Invitation to Learn

How many of you have ever played with sow bugs (also called pillbugs, or roly-polies)? Have you ever kept one for a pet or had races with them? Have you ever caught a butterfly or trapped a spider in a jar? Do you know which ones of those are insects?

Instructional Procedures

1. Once the invitation to learn has been extended ask the children to share what they already know about insects. Record this information on a KWHL (Know, Want to know, How, and what was Learned) chart. Keep this chart available for the children to see and refer to throughout the activity.
2. After letting the children know they will be going on a bug hunt, explain that first they need to learn how to use the tools that are needed. Demonstrate the correct way to use a magnifying glass and how to use the insect tweezers. Once the children have practiced using both in class, collect the equipment to be redistributed outside. Explain to the children that they will not be collecting insects to keep; they will be looking for them and recording what they look like.
3. Provide each child with a lapboard or clipboard and a pencil. Time should be taken to show the children how to walk with these materials held safely. If the location you have chosen is far enough away, consider other options for getting these materials to the site. If you have a field reference guide include that with your supplies.
4. At the site pass out the *My Bug Hunt* handout and other supplies. Remind the children that as they look for bugs they should not touch any of them. They should look at and then draw all of the bugs they find. Ask the children to include all the details that are noticed. Encourage the children to draw any items they think are important. Even though snails, worms, pillbugs, and spiders might be drawn, don't correct the children at this time. Hand out the materials and let the children look. At first it will be hard to see any bugs. Encourage the children to look closely and use their tweezers to turn over leaves, small rocks, and pieces of bark.

5. Teacher suggestions will encourage some children to look in places where they might find insects. Point out insects that are noticed by the teacher or parent helpers.
6. When 10-15 minutes have passed have the children regroup and turn in their supplies.
7. After returning to the classroom, ask the children how many different kinds of insects they found. At this point ask them how you can tell if everything they found was an insect. Some children will name the type of insect and other children will simply refer to the size or a specific characteristic of the insect.
8. As the children name characteristics that they noticed, create a mind map and a list as these questions are answered. Does an insect have a head? What does it look like? As the children name a feature of an insect draw that shape in an exaggerated way on chart paper or a white board. Does it have a body? Does it have legs? How many legs does it have? Once all of the key features are named and drawn, add a large circle a different color around your insect so it becomes the center of an idea web.
9. Read the book *What Do Insects Do?* by Susan Canizares and Pamela Chanko. Now record the responses the children give when you ask them to tell you what else they know about insects and what they do. Examples could include: they eat leaves, some have cocoons, some can sting you, etc.
10. Ask the children about other things they found that were not insects, but were interesting.
11. Hang up the children's drawings so everyone can see them before you read the next day.

Day two

12. Read the book *What Is An Insect* by Susan Canizares and Mary Reid (or other similar book) with the children. After reading refer to the KWHL chart and add details that the children have noticed from their drawings and the story.
13. Go on a second bug hunt. This second time, ask the children to check how many legs their insects have. If there are wings or long legs these details should be drawn. This time the spiders, snails, and pill bugs should not be drawn since none of those are insects.

14. After this second bug hunt ask the children to use their drawings to help them create a large drawing of the most interesting insect they found. Be sure to have a range of drawing supplies available. Have the children cut these drawings out and put them into the bulletin board that has stylized grass and plants on it. The idea is that the insects are partially hidden. Give the mural a cute title like "Look what we found on our bug hunt!"
15. Before returning to the KWHL chart teach the children Dr. Jean's Insect song.
16. Assess the child's newly discovered knowledge of insects by asking each to invent their own insect. These can be done with paper or with found objects to create a sculpture. A large bolt, chenille pipe cleaners, paper, paperclips, beads, and fabric all can be used to create great insect sculptures.
17. In small groups create a large chart on lined chart paper with each child's response to the prompt: Insects have _____ (Insects can _____). Or Insects cannot _____ (Insects do not _____).
18. Each child will then illustrate a page or two for the double flip book the class will assemble. The chart will be cut up into strips with each child's sentence (from #17 above) given to use as a reference when adding his or her own copy to artwork. Once assembled this book can be read to the whole class. The encouragement of humor on the second sentence will make this book a class favorite.

Assessment Suggestions

- Assess the child's newly discovered knowledge of insects by asking each to invent their own insect. It needs to have all the body parts that every insect has, but may be a colorful and as big or small as the child chooses. These may be drawings or watercolor resists.
- A variation of the drawn or painted insect is to construct a three-dimensional model of the chosen or invented insects. A broad range of supplies should be made available. The supplies may be set up in a center or provided for the whole group. Large bolts wrapped with yarn and chenille stems make a wonderful armature for an insect.

Curriculum Extensions/Adaptations/ Integration

- Some advanced learners may choose to learn about specific insects. The Internet is replete with insect sites for children of different ages. Some advanced learners may choose to share an insect collection or ant farms. A story about a day in the life of an insect would give the reading and writing child a chance to stretch. The advanced learner could also use a field guide taken out on the bug hunt.
- Small viewing jars with insects in them can be shared with children with limited mobility. Deaf students will need interpreters that can expand their language to include relevant vocabulary.
- Math- Totals can be figured using tally marks. Insects can be sorted by size (small, medium, and large) or other characteristics.
- Language- A small book can be written and drawn which tells about the bug hunt. An acrostic poem could be created with the word insect.

Family Connections

- Flashlight bug hunt using the same recording sheet.
- Bug report
- Bug collection

Additional Resources

Books

Insects: A Guide to Familiar American Insects, by Herbert S. Zim and Clarence Cottam;

What Do Insects Do?, by Susan Canizares and Pamela Chanko; ISBN 0-590-3979-X

Science Tools, by Susan Canizares and Betsey Chessen; ISBN 0-439-04603-3

What Is An Insect?, by Susan Canizares and Mary Reid; ISBN 0-590-39790-7

Where Do Insects Live?, by Susan Canizares and Mary Reid; ISBN 0-590-39793-1

Bug Dictionary, by Jill Bailey; ISBN 0-439-57296-7

A Pill Bug's Life, by John Himmelman; ISBN 0-516-26798-1

Big Bugs, by Seymour Simon (this is a Scholastic book)

Rookie Read-About Science: It's a Good Thing There Are Insects, by Allan Fowler; Scholastic
Item # NTS411343

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CDs

Kiss Your Brain, by Dr. Jean Feldman (drjean.org)

Web sites

<http://enature.com>

<http://www.ento.vt.edu/~sharov/3d/virtual.html>

<http://teacher.scholastic.com/fieldtrp/science/bugs.htm>

<http://www.pestworldforkids.org>

Additional Media

How Many Bugs In A Box, software on CD-ROM from Scholastic.com; Item # NTS356402

My Bug Hunt



Look What

found on the bug hunt.

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