



Insects Post-visit

Classroom Activities

Brief Synopsis

Whether we like them or not, insects are an important part of our survival. Students will review why insects are so successful and conduct their own research on an insect to discover how the insect mechanisms to success help them carry out key roles in their habitats. As an extension, students may operate a campaign to help educate the whole school about why insects are helpful and important for all of us.

Ages: Designed for 5th–8th grade

Time Considerations: 15 minutes of class time, then time for independent research. Time for reporting research may vary depending on needs.

Materials:

- Chalkboard or overhead projector

Vocabulary: Camouflage, Decomposition, Exoskeleton, Life cycle, Pollination, Population, Reproduction

Outcomes:

1. Students will be able to list the mechanisms for success in insects.
2. Students will give examples of each of the four main roles insects fulfill.
3. Students will research a local insect species to report on the roles it plays in the ecosystem.

Minnesota Academic Standards:

Science: 4.IV.B.1, 7.IV.B.2, 4&5, 7.IV.C.4, 7.IV.E.3-5

Language Arts: 4.I.A.1, 4.I.B.1&2, 4.III.A.1&2, 5.I.A.1, 5.I.B.1, 5.III.A.1&2, 6.I.B.4, 6.III.A.1&3, 7.I.A.1, 7.I.B.1&5, 7.III.A.1, 8.I.B.1, 5&8, 8.III.1, 2&7, 9-12.I.B.4



Revised Dec 2006

Set-up

To conduct the first activity you will need to have access to a large **chalkboard or an overhead projector** and screen for creating lists for the entire class to view. Students will then need **time to conduct research** on a particular insect. The second activity may include a wide variety of materials including computer access, library/research time, poster paper and other creative materials. You will have to choose the style of project that best fits your classroom.

Activity 1: Success

Background: As your students learned in *Insects* class at Eagle Bluff, insects have a wonderful rate of success for many reasons. This high level of success has allowed for a huge variety of insect species, living in almost all habitats and micro-habitats all over the world. Without insects, ecosystems would fail, and life on earth, as we know it, could not survive.

Procedure:

1. Have your students think back to the *Insects* class at Eagle Bluff. Create a list on the board of the mechanisms for success that have helped insects survive, diversify, and disperse to so many places around the world.
 - **Small size**—Can inhabit small places.
 - **High Reproductive rate**—Have lots of offspring and have them often (most insects only need a few weeks to 1 year to fully develop and reproduce).
 - **Most have wings**—Can disperse or relocate easily.
 - **Have an Exoskeleton**—Acts like armor to protect them and keep them from drying out.
 - **Camouflage**—Most insects are easily overlooked (hard to exterminate them).
 - **Adults and juvenile stages**—These two life stages often occupy different habitats and do not compete with each other for their needs (such as food and shelter).

Because of these mechanisms, insects are a diverse group of animals. One million species have been identified and named. Most scientists believe there are as few as 3 million more species yet to be discovered and as many as 10 million!

2. Insect diversity allows them to fill different roles in their habitats. List the four main roles insects fulfill on the board:

Pollination

Population Control

Process Waste

Provide Food

3. Have your students give specific examples of what insects do to fulfill these roles.
4. Have your students research a local insect to seek out which role or



roles (most insects fill more than one) they fulfill in your local ecosystem. Have them include information about the role their insect plays such as:

- Which plants to they help pollinate?
- What other animals eat them for food?
- Do they help break down dead or dying plants or animals?
- Do they eat other plants or animals, keeping their numbers under control?
- Do they spread diseases or parasites that keep other populations down?

5. Make sure your students describe the adaptations, or mechanisms to success that allow their insect to perform their roles in the ecosystem. For example, the wings of a honey bee help it to more quickly fly from flower to flower, making it more likely to spread the pollen it gathers from each flower, or the large chewing mandibles of a wood-boring beetle help it to chew through wood, allowing it to decompose dead or downed trees, etc.

Here's a list of suggested insects for research:

- Crickets
- Grasshoppers
- Katydid
- Cicadas
- Honey Bees
- Bald-faced Hornets
- Paper Wasps
- Bumble bees
- Bark-boring Beetles
- Lightning Bugs
- Lady Beetles
- Mosquitoes
- House Flies
- Horse Flies
- Dragonflies (such as Green Darner)
- Butterflies (such as Red Admiral, Eastern Tiger Swallowtail, or Monarch)
- Moths (such as Polyphemus, Luna, or Cecropia)
- Caterpillars (such as tent caterpillars)
- Ants
- Box elder Bugs
- June Bugs
- Aphids

Make sure your students pick a specific species in a category, there are several species of cricket for example.

6. Assess your students' abilities:
- Do your students address all four major roles of their insects?
 - Can they connect the mechanisms to success to the insects' abilities to play their important roles?
 - Do your students use complete sentences, clarifying facts from opinions? Can they verbally paraphrase their research?

Activity 2: Insect Campaign

People are often afraid of insects or find them gross. Have your students start a campaign to educate the entire school, neighborhood, or families at home about the importance and benefits of insects. Have them focus on local species that people are likely to encounter, so they may look at these insects with interest or fascination rather than fear and disgust. The campaign may include creating posters, brochures, and slogans about the importance of these insects.

Teacher Tips

- This project can be as simple or involved as you would like it to be. Feel free to adapt it to your needs.
- If your school allows, find library or hallway space to display your students' reports, so each of your students can help educate the entire school.
- You can also use the displays to help teach the rest of your class. Give your students time to read through each display and include some basic information on a test to complete a unit about local insects and ecosystems.



Additional Resources

<http://www.ivyhall.district96.k12.il.us/4TH/KKHP/1insects/bugmenu.html>

This home page of this website has a large list of insects students can click on to see pictures and read facts about each type of insect.

<http://www.kathimitchell.com/insects.html>

This website is a list of other websites for kids to learn about insects