

## Parent Outline: 6 & Up

## September: Insect Ecology

<b>Welcome/ Introduction:</b>	Staff/Volunteer Names; Go over rules/guidelines; Overview of the Nature Center <b>Today's Topic- Insect Ecology</b> <b>Question: How important are insects in nature?</b>
<b>Ice Breaker:</b>	<b>Name Game</b>
<b>Background/ Exploration:</b>	<b>Insects are invertebrates</b> , they have no backbones. Insects are <b>arthropods</b> . <b>Basic Insect Parts:</b> Head, thorax, abdomen, 6 legs, 2 antennae, hard shell, wings Most insects have compound eyes, and many also have simple eyes. Spiders and ticks are not insects. Strange insect facts and figures (students help read).  <b>Importance of insects</b> -pollination of flowers so plants set seed; food for other insects, animals, and people; eat other pests; <b>Insect life cycle</b> -Insects go through complete or incomplete metamorphosis as they mature. (e.g.-butterflies, bees = complete; cicadas, dragonflies = incomplete) <b>Complete-egg—larva (grub)—pupa—adult</b> The change from pupa to adult is called <b>metamorphosis</b> . This is like a caterpillar changing into a butterfly. Incomplete-nymph hatches, grows, gets wings, and grows to adult size.
<b>Observation:</b>	<b>Monarchs</b> -look at caterpillar, chrysalis, and emerging butterflies in auditorium.  <b>Adaptations</b> -An adaptation is something about a creature that helps it live and survive in its environment. Some insects live together in large groups, e.g. ants, bees, and termites. Insects have many ways of hiding from predators = camouflage. Insects have many ways of eating/catching their prey. Specialized bodies/mouthparts/legs. Prey insects have adaptations to reduce their chance of being caught and eaten.
<b>Activity:</b>	Berlese (Insect) funnel (Ranger Rick, Sisson)- Shake funnel and observe invertebrates.
<b>Activity:</b>	Make <b>Insect Keepers</b>
<b>Trail Talk:</b>	Trail Rules-stay behind naturalist, stay with group, stay on trail, etc. <b>What we will do/What to look for; Predictions</b> -What animals, plants will we find?
<b>Prepare to go Outside:</b>	Apply: Sunscreen, Bug Repellant (if necessary); Use restroom. Bring: Water bottles, hats, jackets (if necessary), clipboard/clip
<b>OUTDOOR EXPLORATION:</b>	Hike to a prairie area. Listen for insect sounds. Give brief background on prairie. (Grasses asters, legumes; deep roots; adaptations for drought, wind, fire, cold) <b>Prairie Insects</b> -A prairie is more than just its plants, it is a community which includes insects. Insects are very diverse in a healthy prairie. Insects benefit the prairie by: <ul style="list-style-type: none"><li>• <b>processing</b> plant food as part of the food chain</li><li>• <b>aerating</b> and <b>tilling</b> the soil with their underground tunnels and chambers</li><li>• <b>pollinating</b> wildflowers, helping them produce seeds, then new plants</li><li>• <b>decomposing</b> dead plant and animal material</li></ul>
<b>Activity:</b>	Have the students use nets to carefully capture insects for observation.
<b>Activity:</b>	Do a <b>population count</b> with hula hoops in the prairie or meadow (Ranger Rick). Check bug bait to see what was attracted (flies, bees, gnats, ants...) <b>Pollination Biology</b> -Bees and butterflies see (ultraviolet) colors in a different way than we do. Show pictures of flowers in ultraviolet light.

**Activity:** Students make a **Prairie Food Web**

**Return hike:** If time allows, collect some prairie seed during the return hike. Explain to students how it will be used to help restore the prairie area.

**Closing:** **Pesticides- & Integrated Pest Management**

**SEND OFF:** Goodbye!  
Next Month's topic-Plant Interactions

**TAKE HOME:** Insect keeper  
Parent Outline  
At home activities

### **Vocabulary**

Invertebrate, arthropod, thorax, abdomen, antenna, proboscis, pupa, larva, adaptation, colony, biodiversity, migration, carnivore, herbivore, pesticide, Integrated Pest Management, ultraviolet light, nectar guides

### **Background**

[www.nwf.org](http://www.nwf.org) National Wildlife Federation

[www.naba.org](http://www.naba.org) North American Butterfly Association

[www.nationalgeographic.com/kids/](http://www.nationalgeographic.com/kids/) neat site for all kinds of animal and nature information and photos

[www.pbs.org/wgbh/nova/bees](http://www.pbs.org/wgbh/nova/bees)

[www.cals.ncsu.edu/course/ent591k/nectar\\_guide.html](http://www.cals.ncsu.edu/course/ent591k/nectar_guide.html) nectar guide photos, human and bee views

[www.honey.com](http://www.honey.com) National Honey Board-facts, kids info., recipes, links

*Iowa Wildlife*. 1998. Iowa Association of Naturalists Booklet Series. ISU Press, Ames, IA.

(IAN-601--606) IAN-606 Iowa Insects and Other Invertebrates-

<http://www.extension.iastate.edu/pubs/wi.htm> ISU Press website-can download pdf booklets

Pringle, Laurence. "Fighting Pests with Pests". *Ranger Rick Nature Magazine*, January, 1978. National Wildlife Federation, Reston, VA (reprint).

Pringle, Lawrence. *The Golden Book of Insects and Spiders*. 1990. Western Publishing Co., Inc., Racine, WI.