



**Dedicated
to Reducing
Pesticides**

Unit 4 Lesson 5: An Ounce of Prevention

Focus Areas: Pest Control: Mechanical and Chemical; Science, Reading

Focus Skills: reading for information, understanding concepts through simulation, comparing and contrasting

Objectives

- To become aware of the measures to be taken to avoid lice infestations
- To develop a better understanding of the treatment for head lice
- To understand that head lice can become resistant to chemical solutions

Essential Questions

- What can I do to avoid head lice?
- What can I do to get rid of head lice?
- Why can chemical treatments of head lice become ineffective?

Essential Understandings

- Head lice do not only infect people who are economically challenged.
- Our social behavior can help or hinder the spread of lice.
- Use of excessive chemical controls can lead to resistant strains of lice.

Background

Head lice (*Pediculus humanus capitis*) affecting the scalp are a very common problem, especially in school children. There are various treatments, but whatever approach is used, they can be a persistent or recurring nuisance.



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The main symptom, if noticed by the individual, is an itchy scalp. This is sometimes especially so behind the ears. The cause is a tiny insect that lives on the scalp and feeds by sucking blood through the skin. The head louse grips onto the hair with its six tiny claws. The female lays its eggs (nits) in sacs which are glued to a hair. These take 7 to 10 days to hatch. The lice become mature in 7 to 14 days, and then are ready to reproduce. The total numbers of lice thus rise very quickly. Head lice do not jump, fly, or swim. They spread by direct contact, “walking” from one hair or head to another. If a child has head lice, it does not mean that he or she is unclean or dirty. In fact, some people say that head lice prefer clean heads.

About half of the children affected will notice itching of their scalps, which draws attention to the problem. The lice themselves are small, about the length of a match head, and may be difficult to see, as their color is often close to the hair color.

Newly laid eggs are usually close to the scalp (about 1.5 cm or about 0.5 inches from the scalp). As the hair grows, and subsequently the egg sac, once it is hatched, will move further from the scalp. When the egg is still in the sac it is small and rather dull in color, and difficult to see. Once the egg has hatched (in 7 to 10 days), the sac is white and easier to see. The head louse only affects humans and cannot be passed on to, or caught from animals.



Vocabulary

infestation	a large number of pests in a particular area
lice	the plural of louse
louse	a parasite that sucks blood from animals
nit	a louse egg



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resistance

an immunity to popular treatments developed by some pests over time



Logistics

Time: 35 minutes

Group Size: 5 to 30

Space: a room with comfortable seating



Materials

Handout 1 “Hey! A Louse Bit Me!” *

Handout 2 “Hey! A Tick Bit Me!” *

Handout 3 “Hey! A Bedbug Bit Me!” *

Handout 4 “Hey! A Flea Bit Me!” *

Handout 5 “Compare and Contrast Two Pests” *

beads or some other tokens in two different colors

labels: Louse Biology, Louse Prevention,

Louse Treatment

paper or white/black board

art supplies

Assessment for an Illustration or Poster *

* single copy provided



Preparation

1. Make copies of Handout 1, “Hey! A Louse Bit Me!” (Fact Sheet on Head Lice) and Handout 5 “Compare and Contrast Two Pests.”
2. Prepare category labels for discussion: Louse Biology, Louse Prevention, Louse Treatment.
3. Collect art supplies for the creation of Lice Prevention posters.



Activity

Challenge: Explore the life style of vampire bugs!
(Display for group viewing)



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Introduction

1. Distribute Handout 1, “Hey! A Louse Bit Me!” (Fact Sheet on Head Lice) and read it aloud to the children.
2. Distribute Handout 5, “Compare and Contrast Two Pests.”
3. Brainstorm facts that the children have learned about lice, listing them in the correct categories: Louse Biology, Louse Prevention, Louse Treatment.
4. Point out that some methods of treatment involve chemical solutions while others are mechanical.
5. Allow time for the children to complete Column 1 on Handout 5, “Compare and Contrast Two Pests,” using the fact sheet and results of brainstorming from #3 above in the **Introduction**.

Involvement

1. Give each child a bead/token, either one color or the other.
2. Record the number of children with each color. (The division should be about 50/50.)
3. Poll the children to determine how many would choose a chemical solution to their louse problem and record the results.
4. Discuss the reasons for the children’s choice of treatment for their problem.
5. Collect the non-resistance lice (one of the two colors). These children are lice free.
6. Those remaining are given two more beads to represent the next generation of lice.
7. The new beads are distributed among the lice free children.
8. Discuss the options for controlling the problem now.
9. Point out that resistance is another reason to use chemical controls sparingly.



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Follow Up

1. Discuss the wisdom of prevention vs. cure.
2. Create Lice Prevention posters to guide the children in prevention of a lice infestation.

Assessment



Evaluate the Lice Prevention posters using the Assessment for an Illustration or Poster.



Answer Key

None needed.

Follow Through

Additional Focus Areas:	Language Arts
Additional Focus Skills:	finding the main idea, summarizing, comparing and contrasting
Additional Time:	45 minutes

Materials

- Handout 2 “Hey! A Tick Bit Me!” *
- Handout 3 “Hey! A Bedbug Bit Me!” *
- Handout 4 “Hey! A Flea Bit Me!” *
- Handout 5 “Compare and Contrast Two Pests” *

* single copy provided



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1. Give each child the fact sheet for either the bedbug, flea, or tick.
2. Allow the children time to read about their assigned pest and complete Handout 5, "Compare and Contrast Two Pests."
3. Group the children according to the insect researched and urge them to share the information they found. Note: They may add to their comparison sheet at this time.
4. Regroup the children in triads (one from each pest researched) and share information.
5. As a full group, discuss the problem and solutions for pests that plague humans.

Resources and Special Thanks to

About Animals/Wildlife

animals.about.com/ed

Directors of Health Promotion and Education

www.dhpe.org/

Eric Day, Insect Identification Laboratory, Virginia Cooperative Extension (Virginia Polytechnic Institute and State University and Virginia State University)

www.ento.vt.edu/bughunt

The Nemours Foundation

www.KidsHealth.org

Ohio State University Extension

extension.osu.edu/

University of Vermont Department of Entomology and Cooperative Extension

www.uvm.edu/extension/publications/el/el44.htm





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Notes



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