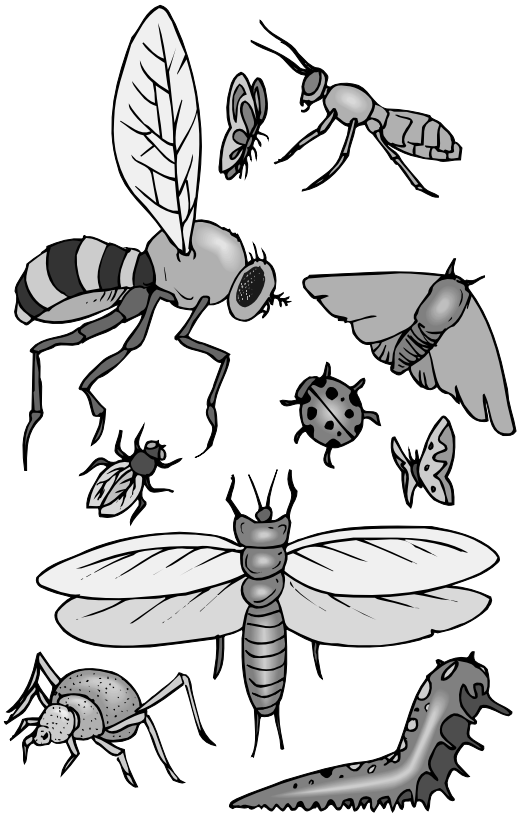
MONSANTO INSECTARIUM

Scavenger Hunt

GRADES 4-8



Saint Louis Zoo

Animals Always®

Scavenger Hunt
Monsanto Insectarium (4–8)
Teacher's Guide

Updated Summer 2012
APPROXIMATE TIME: 60-75 Minutes

Suggestions for Teachers:

1. The questions on this hunt take you through the Monsanto Insectarium building. The Insectarium is a popular exhibit and can get very crowded; allow extra time.
2. There is no admission to the Monsanto Insectarium.
3. Divide your students into groups of six or less with an adult to help each group.
4. Your students will need colored pencils and a calculator to complete this scavenger hunt.

Pre-visit activities:

1. Review these pages ahead of time with your students so they will have an idea of what they will be doing at the Zoo.
2. Be sure that your students are familiar with the terms **adaptation**, **camouflage** and **habitat**.
3. Review with students that an insect is characterized by six legs, three body segments: head, thorax, and abdomen and two antennae. Usually have wings and large compound eyes.

Post-visit activities:

1. Contact the Zoo's Library and Teacher Resource Center for resources including the ones listed below:

Videos:
Animal Classes: Insects
The Life Cycle of the Honeybee
Benefits of Insects

Zoocases:
Insects Zoocase

Other Resources:
Various activity books
Laminated Posters

Scavenger Hunt
Monsanto Insectarium (4-8)
Answer Key

Because the animals at the Zoo are living creatures with very special needs, at certain times some of the animals referred to in this scavenger hunt may not be on public display. **Please remind your students to do their best to complete the hunt by carefully observing the animals they find and not to worry about any that are off display.** We update our scavenger hunts on an annual basis during the summer months to be able to provide you with the most accurate information about our animals.

Note to teachers:
Not all of the animals in the Insectarium are *insects*! In addition to insects, there are arthropods and other invertebrate phyla represented.

1. Three body segments (Head Thorax and Abdomen), Eyes, 6 Legs, Wings, Antennae
2. 5; answers to the second part of the question are listed in the table below

Pill bug	Too many legs and body segments
Giant Centipede	Too many legs and body segments
Red-knee Tarantula	Too many legs and only 2 body segments
Emperor Scorpion	Too many legs
Leopard Slug	No legs and only 1 body segment

3. Entomologist; other careers may vary
4. 1,500,000,000,000,000,000,000!!! However, since the sign says that there are 21 zeros, another answer is 1,000,000,000,000,000,000,000. While this other answer is not technically correct, the sign makes this a trick question.
5. Answers may vary
6. Malaria, West Nile Virus
7. Mealworm
8. Cockroaches
9. Termite Mound; African Termites; cools the air in the underground nest by allowing heat to rise into its chambers, cool off, and sink back down to the nest.
10. Note: The "DID YOU KNOW" sign is located on the wall next to the termite mound. (365 days)X(6000 eggs a day)X(20 years) = 43,800,000

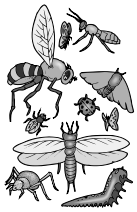
11. The sign says Yellow Jackets; however, based on the other signage and items in this exhibit area, other answers may include paper wasp and bald-faced hornet.
12. Giant White-knee Tarantula
13. They are not because they have too many legs, not enough body segments, and no antennae.
14. Hummingbirds build their nests out of moss and lichens and use spider webs like glue to hold all the materials together. A spider web is a good building material because it is sticky and strong. (Located on the door opposite of the Giant White-knee Tarantula exhibit.)
15. Decomposition, pollination, food for other animals
16. Answers may vary
17. 9 days (Located next to Hide Beetle Exhibit.)
18. Warm to cool freshwater ponds and streams; blood of frogs, fish and sometimes humans (a leech is parasite that needs blood to survive).
19. Leeches are used as a method of eliminating extra blood after surgery that would otherwise cause some surgeries to fail. To do this, leeches suck the extra blood until normal blood flow returns. Leech saliva is used as an anticoagulant (this use includes promoting blood flow and treating heart attack and stroke victims).
20. To make vaccines for bee allergies and to treat disorders of the nervous system, arthritis, rheumatism, and joint inflammation.
21. Answers may vary
22. Answers may vary
23. Answers are listed in the table below

White-eyed Assassin Bug	Rhinoceros Beetle
Lady Bug Beetle*	Scale Insects*
Dragon Headed Katydid	Many different insects
Midge Larvae	Aphid
Wheel Bug	Stink Bug
Wasp Larvae	Gypsy Moth Larvae

* Depending on the season, these insects may not be on exhibit. If they are not on exhibit, have an adult note which insect is there instead and whether it is a pest controller. If it is a pest controller, have the adult note which pest(s) it eats.

24. Hissing Cockroach
25. Hears sound through its legs
26. ¼ mile
27. American Burying Beetle; endangered

28. Help decompose dead animals
29. Life cycle should contain: egg, caterpillar (larval), chrysalis (cocoon), adult (butterfly).
30. Answers may vary
31. Pictures may vary



Name _____

Scavenger Hunt
Monsanto Insectarium 4-8
Student Activity Pages

There are more species of insects than any other animal. Their diversity is due to the length of time they have roamed the earth. Their individual adaptations have allowed insects to inhabit and thrive in almost any area on the globe! Although many insects are considered pests, they can be very beneficial to humans, as well as to other animals. As you walk through the Insectarium, note all the facts about insects that make them so fun to learn about!

START YOUR HUNT AT THE MONSANTO INSECTARIUM

AM I AN INSECT?

1. What are the characteristics of an insect?

2. Complete the Am I an Insect activity. How many were not insects? _____ How do you know? List the names of the organisms and say why they weren't insects.

3. What kind of scientist studies insects? Can you think of another career where insects are the focus?

4. **DID YOU KNOW**-- An aphid will produce 1.5 heptillion offspring in one summer! Write out the number _____

THEY'RE EVERYWHERE! DESIGNED FOR SUCCESS

5. Select one habitat that you might find in Missouri and describe an insect that lives in that habitat. Have you seen this insect before?

6. **DID YOU KNOW**-- Mosquitoes are the most dangerous insects to humans! What diseases do they spread? (Hint: one is in the news a lot.)

DUNE BUGGIES- EXTREME SURVIVAL

7. Find and investigate the Darkling Beetle exhibit. Now find the Darkling Beetles information plaque on the wall. What is the larval form of the beetle called?

NOT HOME ALONE- WHO'S HOME?

8. What insect shares its home with us and eats our food? (Hint: Hey mom! What's there to eat in the refrigerator?)

ARCHITECTS WITHOUT BLUEPRINTS- MASTER BUILDERS

9. Turn around and look at the huge brown structure behind you or to your left. (Hint: It's taller than you are and is not the tree!) What is this giant structure, what made it, and what purpose does it serve?

10. **Optional** **DID YOU KNOW**-- A queen termite lays approximately 6000 eggs a day. How many eggs will she lay in her lifetime if she lives 20 years? (Hint: There are 365 days in a year.)

11. What stinging creature "invented paper"? (Hint: look for a **DID YOU KNOW** sign.)

WHAT A TANGLED WEB WE WEAVE

12. What spider flicks hairs off its body when bothered?

13. Are spiders insects? Why or why not?

14. **DID YOU KNOW**-- What do hummingbirds use to make their nests? Give two reasons why you think their “glue” is a good building material.

WHO NEEDS INSECTS? WE DO! THE ROTTEN TRUTH

15. List three reasons why we need insects. (Hint: Start answering this question while standing in this area and add to it as you move around the room during the scavenger hunt.)

16. Which insect do you feel is most beneficial to humans? Why?

17. **DID YOU KNOW**-- How long can a cockroach live without its head? _____

IT’S OFF TO WORK WE GO

18. Have you ever seen leeches before? Where do they live, and what food do they need to survive?

19. How are leeches used by humans? (Hint: Look for a display on the wall and in the middle of the room.)

20. **Drugstore or BugStore/ Bug or Drug** -- What is honeybee venom used for? (Hint: Look for a display in the middle of the room and on the wall.)

THANK A BUG FOR YOUR FOOD/ YOU GONNA EAT THIS?

21. A long time before Fear Factor, many people were eating insects as part of their daily diet. Which of the delicacies would you like to try? (Hint: Look for a display in the middle of the room and on the wall.)

22. Can you think of other ways insects help to provide food for us?

NATURE'S PEST CONTROL

23. Compete the following chart with information from the display and the living exhibit. Only fill out the boxes for pest controllers and their prey insects. Please note that depending on the season, one of these boxes may be left blank.

Name of predatory insect	Name of prey insect

BLINK, BUZZ, CHIRP, HISS, SNIFF- INSECT COMMUNICATION

24. Visit the Insect Communication room. Listen to the different insect sounds. What insect creates a sound in the same way as someone blowing into a clarinet?

25. Where (on its body) does this animal hear sounds?

26. **DID YOU KNOW**-- From how far away can a male cicada's love song be heard?

INVESTIGATING INSECTS- BUG U- A LEARNING ZONE

27. What type of native beetle is the Saint Louis Zoo trying to help conserve and what is its status in the wild?

28. What do these beetles do that is beneficial for the environment?

QUICK CHANGE ARTIST FROM EGGS TO BUTTERFLY

29. Draw a diagram of a butterfly's life cycle. Be sure to label all of the stages! What is the process called when it changes from one form to a new one?

MARY ANN LEE BUTTERFLY WING

30. Using one of the available identification cards, find as many different butterflies as you can. List them below.

31. Choose your favorite butterfly and create a drawing of it using your colored pencils.