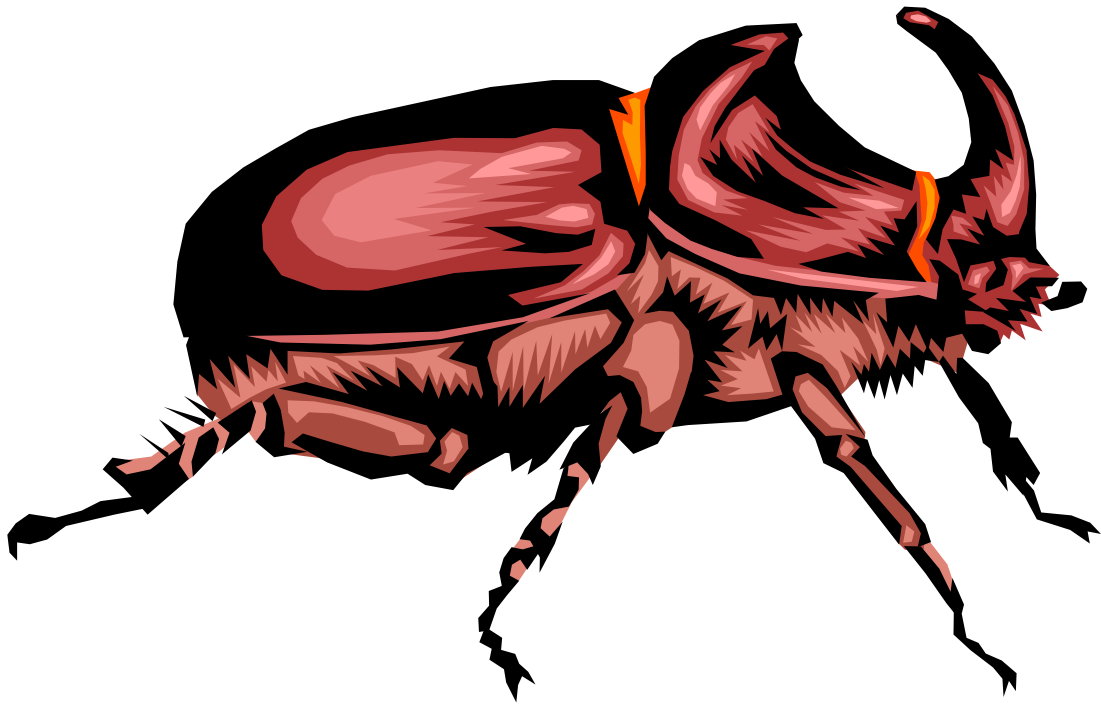


MONSANTO INSECTARIUM

Scavenger Hunt
GRADES K-3



Saint Louis Zoo

Animals Always®

Scavenger Hunt

Monsanto Insectarium (K-3)

Teacher's Guide

Updated Summer 2017

APPROXIMATE TIME: 60 Minutes

Suggestions for Teachers:

1. The activities take you through the Insectarium building. The Insectarium is a popular exhibit and can get very crowded; allow extra time.
2. The Insectarium is now FREE.
3. Divide your class into small groups of six or less with an adult to help each group. **This scavenger hunt is intended to be adult-led. Consequently, written tips for the adults are included where they might be helpful.** There are student activity pages at the end that students can do as they go along.
4. For each adult, bring a copy of the Adult Guide, a one-foot length and a twelve-foot length of string or yarn, a party blower (one that uncurls when blown into), and a magnifying glass. You may have an opportunity to observe a butterfly sitting still or one that has died (fallen). If the lens is strong enough, students might see the scales on the wings. For each student, provide a copy of the student activity pages and a pencil.

Pre-visit activities:

1. Review these pages with your students so they will know what they are doing at the Zoo. Have adult guides familiarize themselves with the information, as well.
2. Introduce or review the following words:
 - **insect** - The largest class in the animal kingdom, characterized as an invertebrate having six legs and three main body segments.
 - **habitat** – The area/type of environment in which an organism lives and meets its needs.
 - **burrow** – A hole or tunnel dug in the ground.
 - **chrysalis** – The third stage in the development of an insect, especially of a moth or butterfly, enclosed in a firm case or cocoon.
 - **pollinate** – To convey or transfer pollen in the process of fertilization.
 - **communicate** – To talk or express oneself through noise, posture or signals.
 - **proboscis** – A slender, tubular feeding and sucking structure of some insects including butterflies.
 - **entomologist** – A person who studies insects.
 - **metamorphosis** – The life cycle of some organisms go through to become adults.
 - **camouflage** – An adaptation, such as coloration, that allows an organism to blend in with its environment.

3. Help students list insects that might be found by your school or their homes.
4. **Although it is very tempting to reach out and touch the butterflies, please caution students that the butterflies in the exhibit are very fragile. Handling the butterflies may cause injury or death.**

Post-visit activities:

1. Set up an exploration station. Include pictures and diagrams of insects, spiders, centipedes, and millipedes.
2. Provide terrariums and magnifying glasses for live specimens.
3. Have students classify insects by how they move (crawling, hopping, flying).
4. Construct, observe, and collect data on an ant farm so students can see how ants work together to build a community.
5. Play *Firefly Flashers*. In this activity students will experience the lifestyles and communication methods of fireflies. You will need a large, level playing area (free of obstacles), squeeze lights, pairs of pattern cards, and an even number of players. This game is intended to be played in the dark, but younger students may need light.

Have the students sit or stand in a circle. Explain that there are over 1000 different species of fireflies (a.k.a. lightning bugs) in the world, and over 100 are native to North America. Each firefly spends most of its life as a wingless larva, called a glowworm. The larvae are predatory, eating other insects, slugs, and snails. The adult firefly either does not eat or will eat only pollen and nectar. One species of firefly eats other fireflies. With all of these different species of fireflies flying around, it is important that the fireflies are able to tell which insects are members of their own species. This is especially important when trying to find a mate. So, each species has its own unique pattern of flashes.

Directions: Each participant is given a squeeze light and should practice squeezing it for a couple of moments. Explain that each participant will get a card with a pattern. (Don't show anyone your card!) There are two cards with each pattern. The firefly's mission is to find their mate (who has a matching card) after the lights are turned off. Switch the card and play again.

Library Resources:

-Check out our library resources at <http://www.stlzoo.org>.

Scavenger Hunt

Monsanto Insectarium (K-3)

Adult-Leader's Guide

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

AT THE MODEL OF THE LARGE BEETLE, YOU HAVE REACHED THE MONSANTO INSECTARIUM. BEFORE GOING INSIDE, HAVE STUDENTS OBSERVE THE CHARACTERISTICS OF THIS INSECT.

1. Can you name the insect statue on display in front of the Insectarium? (Rhinceros Beetle) Adult may have to give clues to the answer, such as look at the "horn" on its head. Have the students write the name on their activity pages.

AM I AN INSECT?

2. Look at the *Characteristics of Insects* poster. Point out the three body parts of insects (head, thorax, and abdomen. All these words are in green boxes on the poster). Observe the animals in this exhibit. Have the students circle the animals on the activity sheet that are insects (beetle, praying mantis and ant).

3. The giant centipede will grow to over one-foot long. Show students the piece of yarn that is one-foot long.

4. Have students choose an animal in this exhibit and explain why it is not an insect. Then have them write the names of two animals that are not insects on their activity pages.

THEY'RE EVERYWHERE! DESIGNED FOR SUCCESS

5. Insects can be found in every habitat all over the world. They are small and can hide easily. Many insects can fly to escape predators and find food. Name at least one insect that can be found in St. Louis, Missouri.

DUNE BUGGIES

6. In this exhibit, be sure to touch the rock and put your hand in the burrow. It is located at the upper left corner of the exhibit by the “Feel the Desert” sign. Read the “How Dry I Am” sign in front of the Dune Buggies exhibit area and discuss how the animals live with the hot and cold differences of the desert. Would you prefer to be active during the hot days or the cold nights? Why? (Night activity=Nocturnal; Day activity=Diurnal. To escape the heat, animals live underground and can be light-colored to reflect the light. Many diurnal desert animals are camouflaged so they won’t be seen.)

NOT HOME ALONE- WHO’S HOME?

7. Ask the students what insects they have seen around their homes. Have students open the cabinets, drawers, and refrigerator to see insects that share our living space. Cockroaches can run one foot per second. Again, show the one-foot piece of yarn.

ARCHITECTS WITHOUT BLUEPRINTS

8. In this area, be sure to look above you at additional examples of insect homes. Which examples of these homes have you seen around your neighborhood?

9. African termites live deep below the ground. It gets so hot that they build a tower above the ground to help cool their home. The heat rises and cooler air sinks to help cool off their mound. It can be thirty-nine feet high. Outside, use your pieces of yarn to measure thirty-nine feet.

WHAT A TANGLED WEB WE WEAVE

10. The spinneret is the part of the spider’s body that secretes silk-like thread for webs. Look at the various kinds of webs. Why do spiders build webs?

WHO NEEDS INSECTS? WE DO!

11. Above the animals in this exhibit, point out the replica of a Gippsland earthworm. It can grow to be twelve-feet long. Use the twelve-foot piece of string and have students stretch their arms out to see how many students it takes to reach twelve feet.

IT’S OFF TO WORK WE GO

12. Can you guess how the fabric silk got its name? What kind of insect is used to make clothes?

THANK A BUG FOR YOUR FOOD

13. Look at the list of foods that insects help pollinate (fertilize). Have the students draw a picture of their favorite food on the list or come up with some different foods. Students can include a drawing of the animal that helps by pollinating this food. (bee)

BLINK, BUZZ, CHIRP, HISS, SNIFF

14. Insects do not talk like we do but they do communicate with each other. Listen to the telephones to hear some insects' way of "talking." After working through this exhibit, have students demonstrate a method that they would like to use to communicate without talking. (Examples: snap fingers, click tongue, and wiggle fingers.)

15. There are many similarities and differences in the way insects look and communicate. Have students pick two insects to draw and compare in the Venn diagram.

INVESTIGATING INSECTS – WINDOW

16. Look through the window at the insects on display. How many different insects do you see? Try to count them. What are they doing? Have students compare how some of the insects are alike and how some are different. (size, shape, color, wings/no wings) At times, you will see entomologists at work. This is the area where insects are kept and bred (have babies).

17. Can you guess how the American burying beetle got its name? It buries its food. It likes to eat carrion or dead animals. The burying beetle helps break down or decompose dead animals. Without them, there would be a lot of carrion around. Over one hundred years ago, burying beetles like these were found in thirty-five states. Now they are only found in isolated populations in six states. The Saint Louis Zoo has created the Center for Conservation of the American Burying Beetle. The Zoo is hoping to bring the American burying beetle back to the wild. What color is the American burying beetle?

HIDE AND GO SEEK

18. Insects are *masters of disguise*; they hide easily. See how many insects you can find in the rainforest without looking at the answer key.

QUICK CHANGE ARTISTS

19. As the students observe the chrysalises in the display case, ask the following questions: Where are the wings? Why are they curled up? Why is the body so big? What is the butterfly curling up under its head? Why is it flapping its wings?

20. The life cycle of a butterfly is called metamorphosis. Can you name the stages in the life cycle of a butterfly? (egg, larva/caterpillar, chrysalis, adult)

MARY ANN LEE BUTTERFLY WING

Butterflies are very beautiful and fragile. Please instruct adults and students to take special care while visiting the butterfly exhibit. Butterflies have tiny scales on their wings that come off when they are handled which prevents them from flying. Although the butterflies will land on flowers near students, they rarely land on people. Please discourage children from trying to chase or catch the butterflies. It is also necessary to watch where you step; they may land on the pathway. Share the Butterfly I.D. cards with the students.

21. Using the I.D. card, try to identify three species. Which is your favorite?

22. Students can use the magnifying glass to observe the butterflies. Using the party blower provided by the teacher, hold it upside down and blow gently to demonstrate how the proboscis uncurls and curls. If students stand very still near a flower, a butterfly may come and drink nectar.

23. On the activity sheet, have students draw a picture of their favorite butterfly.

STUDENT ACTIVITY PAGES

(Copy the following pages for each student before arriving at the zoo)

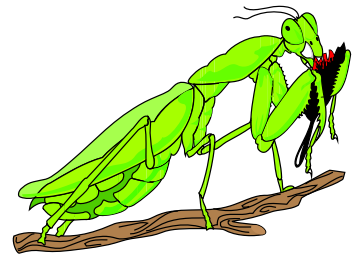
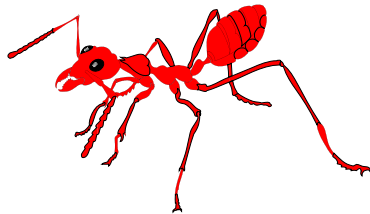
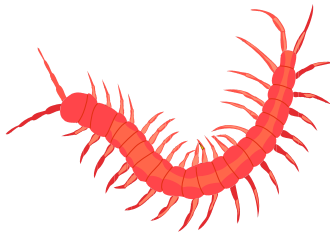
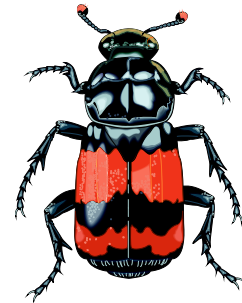
NAME _____

Scavenger Hunt

Monsanto Insectarium (K-3)
Student Activity Pages

1. Can you name the insect statue in front of the Insectarium?

2. Circle the Insects:



3. TRY IT OUT: Measuring the length of a **giant centipede**

4. Write the names of at least two animals in this exhibit that are NOT insects.

5. Insects can be found in every habitat all over the world. They are small and can hide easily. Many insects can fly to escape predators and find food. Name at least one insect that can be found in St. Louis, Missouri.

6. TRY IT OUT: Be sure to touch the rock and put your hand in the burrow by the “Feel the Desert” sign. Would you prefer to be active during the hot days or the cold nights?

7. TRY IT OUT: Open the cabinets, drawers, and refrigerator to see insects that share our living space. What insects have you seen around your home?

8. DISCUSSION: Look at examples of all the insect homes while your teacher leads a discussion.

9. TRY IT OUT: Measuring the height of an **African termite** mound

10. Why do **spiders** build webs?

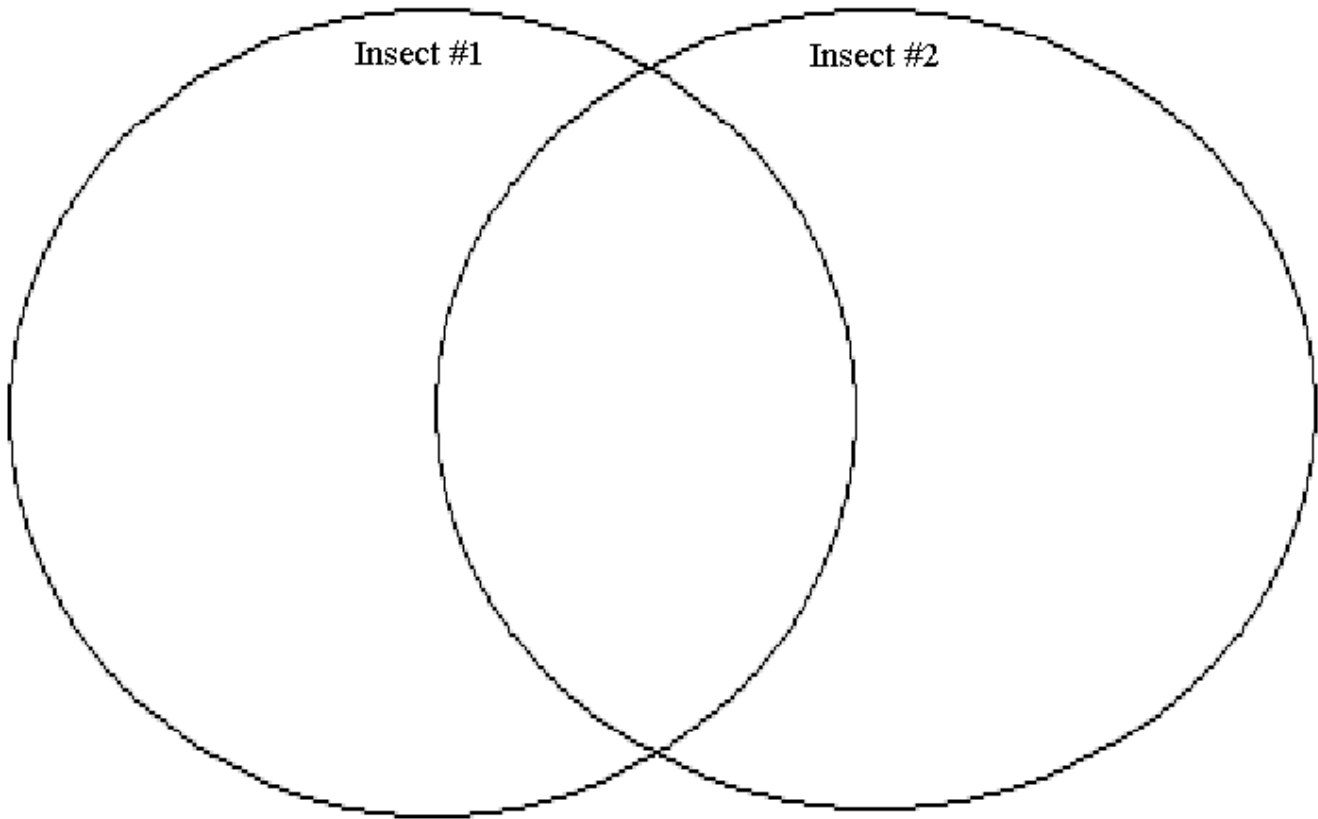
11. TRY IT OUT: Measuring the length of a **Gippsland earthworm**

12. Can you guess how the fabric silk got its name? What kind of insect is used to make clothes?

13. Draw a picture of your favorite food on the list. Draw a picture of the animal that helps pollinate this food.

14. TRY IT OUT: Act out a way you would like to communicate without talking.

15. Pick two insects to draw and compare in the Venn diagram.



16. DISCUSSION: Look through the window at the insects on display while your teacher guides the discussion.

17. Can you guess how the **American Burying Beetle** got its name? What color is the **American Burying Beetle**?

18. TRY IT OUT: See how many insects you can find in the rainforest without looking at the answer key.

19. DISCUSSION: Observe the chrysalises while your teacher guides the discussion.

20. Can you name the stages in the life cycle of a **butterfly**?

21. TRY IT OUT: Using the butterfly I.D. card, try to identify three species. Which is your favorite?

22. TRY IT OUT: Use the magnifying glasses to observe the butterflies.

23. Draw a picture of your favorite **butterfly**.