

VIRGINIA ANIMALS & THEIR HABITATS

Topic 5 What is a Food Chain?

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TOPIC 5 – What is a Food Chain?

Topic 5: Overall Information

Overview

In this group of lessons students will define what a food chain is and how each animal is interconnected.

Topic 5 Virginia SOL			
Science	English	Mathematics	History & Social Science
2.1 a, b, c, d, e, h, i, j, k, l, m 2.4 a 2.5 a, b 2.8 c	2.1 2.2 a, b, c, e 2.3 a, b, c, d, e 2.9 e, f 2.10 2.12 2.13 2.14	2.11 a, b 2.21	2.10 b

Teacher Background Knowledge

- A food chain is the transfer of food energy from one organism to another as each consumes a lower member and in turn is preyed upon by a higher member. A food chain includes the sun, plants, and animals.
- A food chain always starts with the sun, then plant life, and ends with an animal.
- An example of a simple food chain would be: The sun provides the energy for an acorn to grow into an oak tree. Oak trees are a plant. Oak trees produce acorns. Squirrels eat acorns. Hawks eat squirrels. When the hawk dies, decomposers break down the nutrients in the hawk’s carcass and return the nutrients to the soil. Plants can then use the nutrients.
- A food chain shows how each living thing gets its food. Some animals eat plants, some animals eat other animals, and some animals eat both plants and animals.
- The further up the food chain you go, the less food (and hence energy) remains available.
- A food web is a series of food chains that are connected by a plant or animal that is common to several chains.
- Within an ecosystem, all plants and animals are interdependent and interconnected. If one part of the system is missing, the balance of the ecosystem is affected.
- A critical aspect of a problem-based task is the process. Students need to be able to articulate how they solved the problem. Students need to justify and represent their thinking in multiple ways. Not all students will solve a problem using the same approach and students benefit from hearing each other’s strategies. This process takes time and the focus is on *how* students solved the problem, not just the final answer.

Student Learning Expectations

- Identify organisms in a food chain and describe how they are connected.
- Identify that a food chain always starts with the sun, then plant life, and ends with an animal.
- Create a food web and explain how organisms are interdependent.
- Demonstrate what will happen in a habitat if something removes a species (plant or animal) from the habitat's food web.
- Identify the sun as the source of energy for food chains.

Procedure

NOTE: The procedures in the topic sessions may be divided into several different lesson periods. Each session may take more than one class lesson to complete.

Topic 5: Session 5.1 – Animals and their Food

Session Supplies:

- An apple to show the class

Session Virginia SOL

Science	English	Mathematics	History & Social Science
2.1 h, i, k 2.5 a, b 2.8 c	2.3 a, b, c, d, e 2.12 2.13 a, j		2.10 b

Session 5.1 – Animals and their Food

Teacher Questions & Notes	Procedures
	<ol style="list-style-type: none"> 1. Review the parts of a habitat. (food, water, shelter, space) 2. Give examples of Virginia animals (e.g., white-tailed deer, gray squirrel, frog) and ask the students to identify the parts of their habitat.
	<ol style="list-style-type: none"> 3. Tell your students that they are going to focus today on one part of an animal’s habitat – its food. 4. Ask the students “Why is food important for an animal?” and “Why is food important for you?” Make sure that the students identify that animals need food for energy and that they cannot live if they do not have food.
	<ol style="list-style-type: none"> 5. Tell the students that they are going to write poems today about animals and their food. 6. Review the five senses with the students. Tell the students that they are going to use the senses in their poems today (smell, taste, touch, sound, sight).
	<ol style="list-style-type: none"> 7. Show the students an apple. Make sure that they recognize that it is a food source for them and is a source of energy for them. 8. Review what an adjective is and generate a list of adjectives that describe the apple (e.g., red, round, smooth, sweet smelling). Write the words on a chart.
	<ol style="list-style-type: none"> 9. Have students name other foods and generate a list of adjectives that describe each of the foods. Write the words on the chart.
	<ol style="list-style-type: none"> 10. Tell the students that they are now going to write a poem about

Session 5.1 – Animals and their Food

Teacher Questions & Notes	Procedures
	<p>one of the foods using their senses and the adjectives that they have generated.</p> <p>11. Have the class select one of the foods that they had identified. You can have them vote as a class on which food they want to select.</p>
	<p>12. With the class, generate a poem that follows the format below:</p> <ul style="list-style-type: none">a. Line 1: Name the food.b. Line 2: Use a sense and an adjective to describe the food.c. Line 3: Use another sense and an adjective to describe the food.d. Line 4: Use a third sense and an adjective to describe the food.e. Line 5: Write a sentence about the food starting with the words “I wonder...”. <p>Example of a poem about an apple:</p> <p style="text-align: center;">An apple. Looks bright red. Smells sweet. Smooth to the touch. I wonder if there is a worm in my apple.</p>
	<p>13. Generate at least two more class poems about other foods they have identified.</p>
	<p>14. Have the class break into their project teams.</p> <p>15. With their project team, students identify foods that their animal eats.</p> <p>16. Have the team generate adjectives that describe the foods their animal eats.</p> <p>17. Have the team write a poem about one of the foods that their animal eats using the format described in item #12.</p> <p>18. Have the team put a copy of their team poem in their team notebook.</p>

Session 5.1 – Animals and their Food

Teacher Questions & Notes	Procedures
	19. Have team members each write a copy of their team poem in their journal and illustrate their poem.
	20. Have each team share their poem with the class.

Topic 5: Session 5.2 – Black Bears

Session Supplies:

- Teacher-selected book about black bears (make sure it is about black bears, not other bear species)
- *Compare Yourself to a Black Bear* data collection sheet (pg. 161) [Used with permission from the Virginia Department of Game and Inland Fisheries, Headquarters, 4010 West Broad Street, P.O. Box 11104, Richmond, VA 23230] www.dgif.virginia.gov
- Tape measure or ruler to measure students’ heights
- Scale to measure students’ weights
 - *NOTE: It is important to keep students’ weights confidential to each student! When weighing individual students, it needs to be done with each student alone so that no other students can see.*
- *Just the Bear Facts* video found on A Look Outside DVD
 - *NOTE: A Look Outside DVD is available through the Virginia Department of Game and Inland Fisheries (VDGIF). Virginia school librarians can obtain the DVD by contacting the VDGIF Wildlife Educator at (804) 367-0188.*
 - *NOTE: The video can also be accessed for “streaming” from the following:*
 - Log into the Web site: www.ideastations.org (Virginia PBS Stations)
 - Click on the Education gray box
 - Click on the link to Classroom CLIPS
 - In the upper right-hand corner is a Search box. Type “bear” and search
 - Scroll down to “*Just the Bear Facts*”
- Write the math problem in item #16 either on the board or chart paper to then be used with #16 in this lesson.

Session Virginia SOL

Science	English	Mathematics	History & Social Science
2.1 a, b, c, d, e, h, i, j, k 2.5 b 2.8 c	2.2 a, b, c, e 2.3 a, b, c 2.10 b, d 2.12	2.11 a, b 2.21	

Session 5.2 – Black Bears

Teacher Questions & Notes	Procedures
	<p>Lesson preparation that needs to be done a day or two in advance of this session:</p> <ol style="list-style-type: none"> 1. A day or two before you do this lesson with your students, tell them that they need to find out their weight and their height when they were born, and if possible, their weight at one year old. Explain that they will use this information to compare themselves to black bears. <p style="text-align: center;"><i>NOTE: If a student is not able to get his/her weight at one</i></p>

Session 5.2 – Black Bears

Teacher Questions & Notes	Procedures
	<p><i>year of age, you can multiply his/her birth weight by three for a good estimate.</i></p> <p>2. Write the problem found in #16 of this session on the board or on chart paper to be used later in the session.</p>
	<p>3. Make a class chart with birth weights and birth heights. Write comparison statements about the information. (e.g., “Ann weighed the least at birth.”; Tommy, John, and Jennifer were the same height at birth.”)</p> <p>4. Discuss how the students are different now (e.g., taller, weigh more).</p> <p>5. Discuss what helped them grow (e.g., food, exercise, sleep).</p> <p>6. Review with your students why food is an important part of an animal’s habitat.</p> <p>7. Tell the students that we are going to explore black bears, the foods they eat, and how the foods help them grow. <i>NOTE: Make sure that the information that you gather and the discussion that you have with your students is about black bears, not other bear species.</i></p> <p>8. Select a book about black bears. Read the book with the class. Discuss the food that a black bear eats.</p>
	<p>9. Show the video: <i>Just the Bear Facts</i> from the <u>A Look Outside</u> DVD (15 min).</p> <p>10. Emphasize the importance of precise measurements as you watch the video. <i>(Teacher note: adaptation and hibernation are introduced and will be further discussed during Topic 6 sessions on adaptations.)</i></p> <p>11. After viewing the video, discuss with the class what kinds of food the bears eat and how their food helps them.</p>
	<p>12. Have the students complete the <i>Compare Yourself to a Black Bear</i> sheet (pg. 161).</p>

Session 5.2 – Black Bears

Teacher Questions & Notes	Procedures
	<p>a. Read the Student Data Page, page 21, from <u>Project WILD</u> activity “Bearly Growing”. (Prior to reading aloud, preview the passage. You may want to paraphrase some sections. You do not need to use the table at the bottom).</p> <p>b. As you read each paragraph, stop and have the students record new information they hear on their comparison chart.</p> <p><i>NOTE: The average standing height of a black bear is 5-6 feet (this information is needed to complete the data sheet).</i></p> <p>c. Have students complete the column about themselves. Assist the students, if needed, in measuring their current height and weight.</p> <p><i>NOTE: It is important to keep students’ weights confidential to each student! When weighing individual students, it needs to be done with each student alone so that no other students can see.</i></p>
	<p>13. In their journals have students write the title <i>Comparison Statements</i> and then write at least three statements explaining how they are similar or different from a black bear.</p> <p>14. Explain that they are going to use the data about the weight of bears to solve a math problem.</p> <p>15. Reread the last paragraph on page 21 of <u>Project WILD</u>. Explain that they need to listen carefully since this is where the data used in their math problem (in item #16) that they are going to solve is found.</p> <p>16. Share the math problem that you wrote on the board (or on chart paper) with the students and give them time to work on it. Students can work with a partner to talk through the problem and share ideas, but each student needs to record their thinking in their own journal.</p>

Session 5.2 – Black Bears

Teacher Questions & Notes	Procedures
	<p><i>MATH PROBLEM: A female bear cub weighs 30 pounds. An adult female black bear weighs 150 pounds. One adult female bear climbs on one end of balance scale. Some bear cubs climb onto the other side to make the scale balanced. How many cubs climbed on the scale? Show your thinking in pictures, numbers, and words.</i></p> <p>17. Have the students to share their strategies with the class.</p>

For additional information about black bears, read the background information in Project WILD *How Many Bears Can Live in This Forest* (pg. 23) and *What Bears Go Where* (pg. 118.) For teacher information on bears, view *Living with Black Bears* which can be accessed on www.dgif.virginia.gov or at www.ideastations.org.

Name: _____

Compare Yourself to the Black Bear – Student Sheet

(From: Project WILD K-12 Curriculum and Activity Guide, Version 2006, pg. 22)

The average height of an adult male black bear standing upright:	Your height:
The weight of an adult male black bear:	Your weight:
The average weight of a one-year-old male black bear:	Your weight at one year of age:
The average birth weight of a black bear cub:	Your birth weight:
The average number of cubs that a black bear has per litter:	Average number of babies your mom had at one time:
The length of time a cub stays with its mother:	Number of years you probably will stay at home:
The range of a black bear's life span:	Average person's life span:

Topic 5: Session 5.3 – Food Chains

Session Supplies:

- One copy of *A Forest Food Chain* (pg. 165) and cut apart the parts
- Samples of different chains (e.g., a necklace, a tow chain)
- One copy of *Food Chains* (pg. 166) and cut apart the parts of the food chains. (The food chains go across each row. Make sure to keep the parts of each food chain together.)
- Strips of colored paper (yellow, green, and brown) cut to 8 ½ inches long and about 1 inch wide – enough for each student to have one yellow strip, one green strip, and two to three brown strips
- Glue or tape

Session Virginia SOL

Science	English	Mathematics	History & Social Science
2.1 a, i, j, k., l, m 2.5 b 2.8 c	2.1 a, b 2.2 b, e 2.3 a, b, c		2.10 b

An excellent resource about food chains can be found on the New Hampshire Fish and Game Department (NHFGD) Web site at <http://www.wildnh.com/Kids/kids.htm>, *Predators are Part of the Picture* Vol. 2, Issue 1.

Wild Times for Kids is published twice a year by the NHFGD. The magazine can be downloaded.

Session 5.3 – Food Chains

Teacher Questions & Notes	Procedures
	<ol style="list-style-type: none"> 1. Review the importance of food as a key part of a habitat. Make sure that students remember that food is a source of energy. 2. Discuss what they learned about what a black bear eats. When the students mention that black bears eat berries, seeds and plants, ask them where a plant would get its energy (sun). When the students mention that black bears may eat small rodents or fish, ask them where the small rodents and fish would get their energy (from eating plants). Ask them what they think might happen to a black bear if there were no plants for them to eat or if there were no small rodents or insects for them to eat? Ask if they think that the bear's food is important for them to survive? 3. Tell the students that they are going to look at many animals and their food. 4. Discuss what a chain is and how it stays together. Show the students the examples of chains. Ask them to name and describe other examples of chains.

Session 5.3 – Food Chains

Teacher Questions & Notes	Procedures
	<p>5. Ask what would happen if we removed a link from a chain. Tell the students that they are going to learn about a special kind of chain – a food chain.</p> <p>6. Look at the four parts of the forest food chain that you cut apart ahead of time from <i>A Forest Food Chain</i> page (pg. 165).</p> <p>7. Explain to the students that all of these things can be found in a forest habitat. Ask students how these fit together? Give students time to make suggestions.</p> <p>8. Tell the students that these things fit together as a food chain.</p> <p>9. Have the students as a group decide on the sequence that they should put these things in to make a food chain. Tell the students that each thing in the food chain gets energy from its food source (flow of energy).</p> <p>10. Have four students holding the four parts of the food chain. Have the students get into the order the class decides upon. Have the four students link arms to show that they are a chain.</p> <p>11. Discuss how the energy flows through their food chain.</p>
	<p>12. Divide the class into groups of students. (Some groups will only need four students, but some may need six students.)</p> <p>13. Give each group a set of items from the <i>Food Chains</i> page (pg. 166).</p> <p>14. Have each group put their items into a food chain.</p>
	<p>15. Let each team form their food chain and tell how the energy flows through their food chain.</p> <p>16. Discuss how each food chain starts with the sun, has plants in it, has animals that eat plants, and may have animals that eat animals.</p>
	<p>17. Have the students get into their project teams.</p> <p>18. Have each team start with the sun and build a food chain with</p>

Session 5.3 – Food Chains

Teacher Questions & Notes	Procedures
	<p>plants and animals found in their animal’s habitat. Make sure that they include their animal in the food chain.</p> <p>19. Give each student a yellow strip of paper, a green strip of paper, and two to three brown strips of paper. Have students label the yellow strip with the word “sun.” Have them label the green strip with the word “plant” (or the specific name of the plant if they know it). Tell them that the brown strips will be animals.</p> <p>20. Have each team member build a paper chain of the food chain for their team’s animal. Have them label each link in the chain.</p> <p>21. Help the students note that the yellow link should be at the bottom of their chain, the green link should be next, and then followed by the brown links. Make sure they realize that the animal that eats plants should be linked to the green link, and the animal that eats other animals should be linked to a brown link.</p> <p>22. Tell the teams that they will act out their food chain for the class. Tell them that they will need one team member to explain the flow of energy through their food chain.</p>
	<p>23. Share the food chains they have built with the whole class. Let the teams act out their food chain. Make sure they include the fact that in a food chain they are showing the flow of energy.</p> <p>24. Hang the food chain links in the classroom.</p>
	<p>25. As a class, build the food chain for a black bear. (If one of the class teams has selected a black bear as their animal, skip this step.) Discuss the flow of energy in this food chain.</p>

Project WILD food chain or predator / prey activities include "*Quick Frozen Critters*" (pg. 122), "*Thicket Game*" (pg. 114), "*Muskox Maneuvers*" (pg. 130), and "*Energy Pipeline*" (pg. 105); and from Project WILD Aquatic "*Marsh Munchers*" (pg. 34).

A complete list may be found in the expanded topic index in the appendices under food chains, energy, or predator /prey relationships.

A Forest Food Chain

SUN

Seeds

Mouse

Owl

Food Chains

SUN	Grass	Grasshopper	Toad	Snake	Hawk
SUN	Plants	Insects	Bat	Owl	
SUN	Plant	Rabbit	Fox	Owl	
SUN	Acorn	Squirrel	Hawk		
SUN	Plant	Caterpillar	Spider	Bird	Hawk

Topic 5: Session 5.4 – Food Chains and Food Webs

Session Supplies:

- Teacher-selected book about food chains and food webs
- *Food Web Cards* sheet (pg. 170)
- *Food Web Writing* sheet (pg. 171)
- Choose a habitat ahead of time. (e.g., forest, pond, wetland, mountains) Identify plants and animals that would be found in that habitat. Make nametags with each plant and animal on it. Be sure to include one nametag with SUN on it.
- Ball of string
- Project WILD

Session Virginia SOL

Science	English	Mathematics	History & Social Science
2.1 a, b, c, d, i, j, k, l 2.5 a, b 2.8 c	2.1 2.2 a, b, c, e 2.3 a, b, c 2.12		

An excellent resource about food webs can be found on the New Hampshire Fish and Game Department (NHFGD) Web site at <http://www.wildnh.com/Kids/kids.htm>, *What's for Dinner* Vol. 9, Issue 1. *Wild Times for Kids* is published twice a year by the NHFGD. The magazine can be downloaded.

Session 5.4 – Food Chains and Food Webs

Teacher Questions & Notes	Procedures
	<ol style="list-style-type: none"> 1. Review the importance of food as part of an animal's habitat and how each animal is part of a food chain in its habitat. 2. Review that energy flows through a food chain. 3. Ask the students if they would find any other animals in their habitat other than the one their team is studying. Ask them to describe each identified animal's food and if possible, describe the food chain of the animal. 4. Explain that there may be many food chains in their animal's habitat. 5. Ask if they think the different food chains in their animal's habitat are linked? 6. Tell them that you are going to read a book to them about food chains and food webs. Tell the students to think about what a food web might be.

Session 5.4 – Food Chains and Food Webs

Teacher Questions & Notes	Procedures
	<p>7. Read the book you have selected on food chains and food webs.</p> <p>8. Discuss what a food web is.</p>
	<p>9. Divide the students into two-person teams.</p> <p>10. Give each team a <i>Food Web Cards</i> sheet (pg. 170). The <i>Food Web Cards</i> include Virginia plants and animals (sun, grass, mouse, snake, acorn, grasshopper, cardinal, hawk). Have them work together to create a food web using the plants and animals.</p> <p>11. Have each group share their food web with the class and explain why they placed the plants and animals where they did. Discuss any similarities and differences.</p> <p>12. Pass out the <i>Food Web Writing</i> sheet (pg. 171). Students will select an animal, write an informational story about the animal and the food it eats, and draw about the animal’s place in a food chain.</p>
	<p>13. Web of Life Activity:</p> <ul style="list-style-type: none"> a. Choose a habitat (e.g., forest, wetland, mountains) and give each student in the class a plant or animal from that habitat (give each student a nametag with the name of their organism that is part of the food chain so that others can see it). b. Have students sit in a circle. The teacher is the sun and will hold the beginning of the string. Continuing to hold the beginning of the string, pass the ball of string to a student whose nametag is that of a plant. Ask the class, “Who would eat this plant?” Holding onto the string, the student will pass the ball of string to the student holding the name of the animal that would eat the plant. (Make sure each student holds onto the string as they pass it. At this point, the teacher and the first student should be holding the string, and the second student should now have the ball of the remaining string.) c. When you get to the top of a particular food chain, ask “Who would eat this animal?” Ask what would happen if the

Session 5.4 – Food Chains and Food Webs

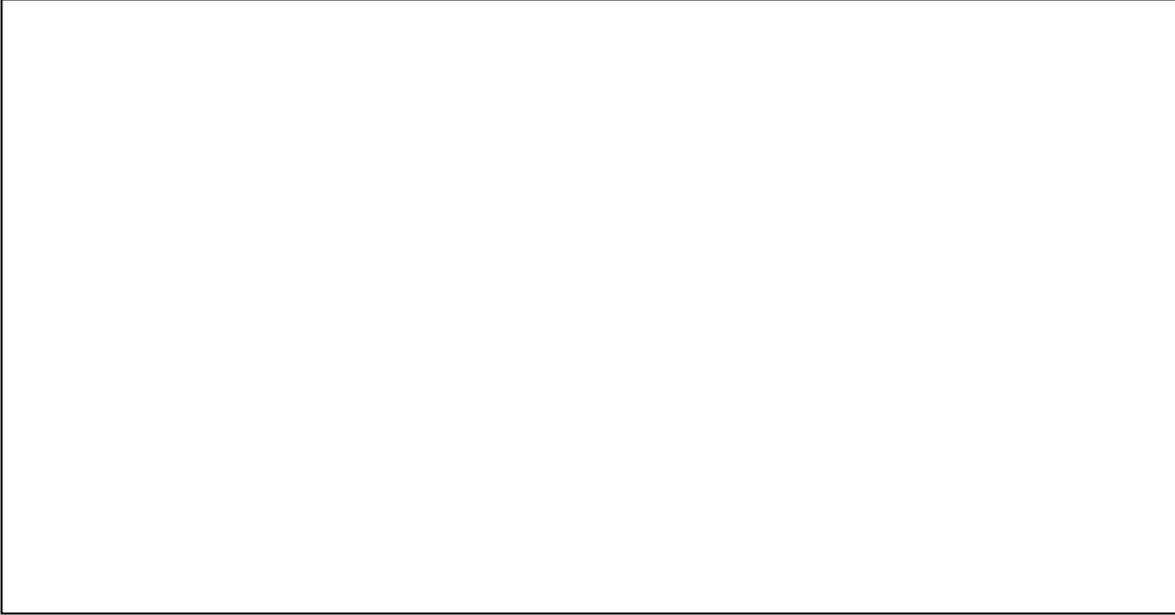
Teacher Questions & Notes	Procedures
	<p>animal died (decomposition). Continue until everyone is connected in one way. (As the person holding the sun, you may be connected more than once since animals and plants that die and their bodies decompose, provide nutrients to the soil which allows for the growth of more plants. The sun is the source of energy for the new plants.)</p>
<p>-What would happen if one plant or animal were taken out?</p>	<p>d. Choose one student to be removed from the food chain. Have this student tug on the string and have all students who felt the tug, raise their hand. All of these people would be affected if this plant or animal were no longer a part of the food chain. Repeat this step several times.</p>
<p>-What does it mean to be interdependent? -How are plants and animals interconnected? -How does an animal depend on a plant for survival? -How does a plant depend on an animal for survival? -What nonliving things are plants and animals dependent on? -What is the relationship between animals on the food chain?</p>	<p>14. Lead students to the understanding that all plants and animals are connected and dependent on each other for their survival.</p>
	<p>15. Create a class shared statement on the meaning of interdependence and add it to the class chart.</p>
	<p>16. Conduct a “Habitat Lap Sit” following the instructions in <u>Project WILD</u> (pg. 61). When you finish the activity, review what the students have learned about the importance of food, food chains, food webs, and interdependence within a habitat.</p>

Food Web Cards – Student Sheet

SUN	GRASS
MOUSE	ACORN
SNAKE	GRASSHOPPER
HAWK	CARDINAL

Food Web Writing Activity – Student Sheet

Part 1: Draw your animal within a food chain. You may connect several food chains in order to make a food web.



Part 2: Pretend you are an animal. Write about your place in the food chain. Make sure to include what you eat and what eats you. Bonus: Include the vocabulary words predator, prey, and energy in your story.

Topic 5: Session 5.5 – Project Work Time: Food Chains and Food Webs

Session Supplies:

- Project team notebooks

Session Virginia SOL

Science	English	Mathematics	History & Social Science
2.1 a, b, c, d, h, i, j, k, l, m 2.4 a 2.5 a, b 2.8 c	2.1 2.2 a, b, c, e 2.3 a, b, c, d, e 2.9 e, f 2.10 2.12 2.13 2.14		

Session 5.5 – Project Work Time: Food Chains and Food Webs

Teacher Questions	Procedures
	<p>PROJECT WORK TIME:</p> <ol style="list-style-type: none"> Review the progress of each team. Make sure that they are moving forward with all parts of their project. Each team will use available resources (e.g., books, textbook, Internet) to research their animal's food chain and the food web(s) in their animal's habitat. At the end of this project work time, each team member should complete a reflection page in their journal based on the team's work on their project.

Acknowledgments

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**Insect Workbook*

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Twenty/Twenty-Projects and Activities for WILD School Sites
**Insect Safari*

Pennsylvania State University – Department of Entomology
State College, Pennsylvania

Insect Image Gallery

**Tailed Jay Butterfly (Jon Lelito, photographer)*

**Postman Butterfly (Jon Lelito, photographer)*

**Julia Butterfly (Jon Lelito, photographer)*

**Isabella Butterfly (Jon Lelito, photographer)*

**Leopard Moth (Maryann Frazier, photographer)*

**Imperial Moth (Maryann Frazier, photographer)*

**Io Moth (Maryann Frazier, photographer)*

**Giant Swallowtail Butterfly Caterpillar (Maryann Frazier, photographer)*

**Pandora Sphinx Moth Caterpillar (Maryann Frazier, photographer)*

Smithsonian National Zoological Park
Washington, DC

Animals – Backyard Biology

**Black Swallowtail Butterfly*

**American Painted Lady Butterfly*

**Great Spangled Fritillary*

**Monarch Butterfly*

**Tiger Swallowtail Butterfly*

University of Kentucky – Extension Entomology
Lexington, Kentucky

University of Kentucky Entomology Kentucky Critters

- **Waved Sphinx Moth* (Blake Newton, photographer)
- **Clearwing Sphinx Moth* (Blake Newton, photographer)
- **Pipevine Swallowtail Caterpillar* (Ric Bessin, photographer)
- **Spicebush Butterfly Caterpillar* (Ric Bessin, photographer)
- **Fritillary Caterpillar* (Ric Bessin, photographer)
- **Monarch Caterpillar* (Ric Bessin, photographer)

USDA Forest Service
Washington, DC

*The Nature Watch, Wildlife, Fish, and Threatened and Endangered Species
Program's Photograph Library*

- **Prince Baskettail* (David Arboux, photographer)
- **Argiope Spider* (David Arboux, photographer)

Virginia Department of Forestry
Charlottesville, Virginia

- **Measuring Tree Height*

Virginia Department of Game and Inland Fisheries
Richmond, Virginia

Wildlife Information

- **Eastern Gray Fox* (Dave Schaffer, USFWS, photographer)
- **Virginia Opossum* (John White, photographer)
- **White-tailed Deer* (Lee Walker, photographer)
- **White-tailed Deer Fawn* (WJ Berg, USFWS, photographer)
- **Black Bear* (Steven Ferguson, photographer)
- **Eastern Gartersnake* (John White, photographer)
- **Black Vulture*
- **Gray Squirrel* (Jeff Trollinger, photographer)
- **Eastern Box Turtle* (John White, photographer)
- **Osprey*
- **American Toad* (John White, photographer)
- **Largemouth Bass*
- **Bullfrog* (Bob Greenlee, photographer)
- **Little Grass Frog* (Paul Sattler, photographer)
- **Mountain Chorus Frog* (Paul Sattler, photographer)
- **Northern Green Frog* (Paul Sattler, photographer)
- **Pickerel Frog* (John White, photographer)
- **Insects student sheet*
- **A Look Outside DVD*

- *Compare Yourself to a Black Bear student sheet*
- *Virginia map with no labels*
- *Tundra Swan 888 Migration Path*
- *Tundra Swan 893 Migration Path*
- *Tundra Swan 894 Migration Path*

Virginia Tech – Department of Entomology
Blacksburg, Virginia

Insect Identification Lab

- *Gypsy Moth* (E.A. Roberts, Senior Research Associate, Department of Entomology; Virginia Tech)
- *Tent Caterpillar*
- *Green-striped Mapleworm*
- *Gypsy Moth Caterpillar* (E.A. Roberts, Senior Research Associate, Department of Entomology; Virginia Tech)
- *Hickory-Horned Devil*
- *Saddleback Caterpillar*
- *Fall Webworm Caterpillars*