

## About the Author



#### **JANE KURTZ**

Award-winning children's book writer Jane Kurtz, author of *Lanie* and *Lanie's Real Adventures*, grew up in rural Ethiopia, where she spent most of her life outdoors wading by waterfalls, eating raw vegetables out of her father's huge vegetable garden, and watching wildlife on the savannah. On their occasional visits back to the United States, her family camped its way across the continent. She has seen girls making a difference in places like an international school in Indonesia that saves orangutans (where she did an author visit in 2008), and in the many schools that have raised money for Ethiopia Reads, an organization that brings reading to children in Ethiopia.

School Library Journal has called Jane Kurtz a "superb storyteller." She's gathered accolades, starred reviews, and awards for her 27 books: picture books and novels that draw on her childhood memories of growing up in Ethiopia, on living through the Red River flood of 1997, and on the minor crises of her children's lives—from a friendship gone sour to the grouchiness of a rainy day. She has also written nonfiction books and professional books for teachers.

Ms. Kurtz was one of fourteen featured authors in "Laura Bush Celebrates America's Authors," part of the 2001 inaugural activities. Her speaking engagements have taken her all over the world, including to Boston, where she did research for the Lanie books. She also did bird-watching there, and now she has her own birder's Life List.

Jane Kurtz is currently on the faculty of the Vermont College MFA program in children's and young adult literature and lives in Lawrence, Kansas, home of Monarch Watch.

Ms. Kurtz's other books include River Friendly, River Wild; Fire on the Mountain; Water Hole Waiting; The Storyteller's Beads; Saba: Under the Hyena's Foot; Faraway Home; and Trouble.



# Teacher's Guide



#### DEAR TEACHER.

Lanie Holland, American Girl's 2010 Girl of the Year, is a contemporary city girl who discovers the wonders of the natural world in her own backyard. Her story is about getting outside and exploring nature—no matter where one lives. It's about learning to see what is right under one's nose and to imagine new possibilities. It's about the value of wildlife habitat in an urban setting. Lanie's story also highlights "the power of one": the impact that one person can have in bringing about change that affects the larger community.

American Girl has teamed up with the National Wildlife Federation (NWF) to encourage kids to get outdoors and experience the wide, wonderful world. Students in grades 3 to 6 will enjoy reading Lanie's stories and focusing on the study of habitat with these curriculum materials created in partnership with NWF.

#### **ABOUT LANIE/STORY SYNOPSIS**



Ten-year-old Lanie Holland loves science and animals. She dreams of studying and saving wildlife in such exotic and important habitats as the Indonesian rain forest and the African savannah. The trouble is, Lanie is stuck at home in Boston while her best friend, Dakota, gets to spend six months in Indonesia helping take care of endangered orangutans in the rain forest.

While Dakota is off on her fantastic adventure, Lanie longs to have some outdoor adventures of her own. A camping trip would be ideal, but Lanie's family just wants to stay home and view nature from indoors: Lanie's older sister constantly practices the cello, and her younger sister hates bugs and dirt. Lanie is convinced that everyone in her family has "inside" genes, while she has "outside" genes.

When her adventurous and outdoorsy Aunt Hannah comes to stay, Lanie finds a kindred spirit. They turn the backyard into a wildflower garden, and Lanie begins to really see—not just look at—the world around her. She keeps a science journal in which she sketches and makes field notes about what she sees. As Lanie develops a newfound connection with her backyard and neighborhood, she comes to realize that the butterflies and birds in Boston are every bit as important as the orangutans in Indonesia—and just as worthy of protection. So when the butterflies in her garden are threatened by a neighbor's use of toxic pesticides, Lanie has to figure out how to convince her neighbor to stop.

Lanie uses her newfound understanding of the environment and her growing knowledge of natural gardening to influence both her family and her community to make small changes that have a big impact in protecting butterfly habitat—in her yard, in her neighborhood, and at the community gardens.

# Homing In on Habitat

#### **INTRODUCTION**

Lanie and her aunt turn Lanie's backyard into a wildflower garden to create a safe habitat for migrating monarch butterflies, which Lanie and her younger sister have been studying at school. In establishing habitat for monarchs, Lanie also improves the environment for birds and other bugs that live in or migrate through her backyard. By replacing the grass with plants that provide nectar and food, and by ensuring protection for nesting wrens, Lanie and her aunt provide some of the key elements that are necessary for a healthy ecosystem.

#### HABITAT BASICS—ACTIVITY 1

The goal of these life-science curriculum materials is to help students understand and identify the key elements of a healthy ecosystem: sources of food, water, and cover, and a place to raise young. After discussing the meaning of "habitat" and comparing the needs of wild animals, more domesticated or "backyard" animals, and humans, students will understand how to identify sources of food, water, and cover in their own homes and neighborhood as well as in the wild.

#### **Materials**

- **1.** Images of wild species (mammals, birds, amphibians, reptiles, and insects) or magazines from which students may cut pictures
- **2.** Images of pets or "backyard" species (local wildlife, such as squirrels, chipmunks, or frogs) or magazines from which students may cut pictures
- 3. Scissors, glue and/or tape, pencils, and markers
- **4.** Copies of the Activity 1 vocabulary sheet and the Activity 1 work sheet

#### **Activity**

- **1.** Define and discuss "habitat." Then provide images or magazines and ask each student to find a picture of a mammal, bird, amphibian, reptile, or insect found *in the wild* (not at a zoo or at his or her home).
  - 2. Students should glue/tape their first images in the top row of the work sheet in the "Wild" column. They should identify the name of the species (i.e., bear, wolf, moose, toad) and, if possible, they should name the animal more precisely, such as gray fox, flying squirrel, or box turtle. Also have students note if it is a mammal, bird, amphibian, reptile, or insect.



- **3.** After students have written down the names of their animals, they should complete each box in the column. Before they go further on their own, ask the students as a group to raise their hands and give examples that help define the key elements of a healthy ecosystem.
- **4.** When students have completed the "Wild" column, review their work by having various students share their species and their findings.
- **5.** Repeat the exercise for backyard animals or animals around home, such as pets or creatures commonly seen in backyards or city neighborhoods. Students can draw or cut out images.
- **6.** Have students read their answers aloud. They will see that sources for some of the basic needs change, as they themselves may be the provider of food, water, or cover for their own pets.
- **7.** Finally, repeat the exercise for humans. Have students draw pictures of themselves and fill in all rows. As for the places to raise young, they can reflect on where they were born and where their parents are raising them.
- **8.** Ask the students to identify the similarities and differences between the three sections.

#### **Development**

By filling in each of the three columns of the grid, students will:

- **1.** demonstrate their understanding that to survive, all animals and humans need food, water, cover, and places to raise young.
- **2.** understand that the sources of food, water, and cover may change. Completion of the three columns of the work sheet demonstrates understanding of key concepts in three different applications.

#### **Checking for Understanding**

Having students read their answers aloud allows for input from other students to add to definitions or examples of these key elements.

#### Closure

- **1.** Discuss the word "habitat" again and review the key elements that all species—human, domesticated, and wild—need to survive.
- **2.** Ask students to think about what humans can or should do to ensure that the other species living around them continue to have what they need to survive.

# ONLINE RESOURCES to help you develop your curriculum or plan outdoor activities:

- Be Out There: www.nwf.org/beoutthere
- Nature Find: www.nwf.org/naturefind
- Garden for Wildlife: www.nwf.org/gardenforwildlife
- Schoolyard Habitats: www.nwf.org/schoolyard
- American Community Gardening Association (find a community garden near you):
   www.communitygarden.org
- National Gardening Association (kids' site): www.kidsgardening.org
- Keep America Beautiful: www.kab.org



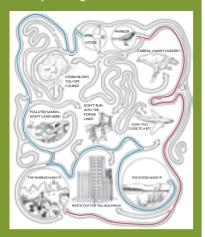
#### **National Wildlife Federation**

(NWF) is the nation's largest conservation and education organization. In launching its new Be Out There campaign, NWF aims to return to the nation's children what they don't even know they've lost: their connection to the natural world.

NWF is proud to partner with American Girl in celebrating the 2010 Girl of the Year. Lanie's spirit and curiosity for nature capture the essence of the Be Out There campaign.

#### **SOLUTIONS/ANSWERS**

Activity 5—Migration Maze



#### Activity 6—Word Search

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#### Activity 6—Double Scramble

ASTERS
GOLDENROD
CONEFLOWER
WILD COLUWBINE
BEE BAQM
BOXHUCKLEBERRY
BLAZONG STAR

Circled letters:

E E D W M L K I

Boxed letters

A O N C M H R MONARCH

#### Activity 7—Hidden Words

1. FLUTTER 9. YULE
2. BUY 10. TUT
3. TUB 11. LYRE or LUTE
4. FUEL 12. UTTER
5. ELF 13. FLY
6. RULE 14. LURE
7. LET 15. RUT
8. RELY BONUS: YURT

#### MAKING FIELD NOTES—ACTIVITY 2

In her stories, Lanie keeps a science journal in which she sketches the things she sees and records "factoids," the science facts she collects. Making field notes is a tried-and-true method that naturalists and scientists use to help them understand what they see. The simple act of looking closely for details to describe or draw helps the observer really see what he or she is looking at. As your students explore the school grounds, their backyards, and parks and natural areas, have them keep journals in which to record field notes describing the animals and plants they see.

The Activity 2 reproducible describes what to look for and how to make field notes. Make a copy for each student to use to get started making his or her own field notes. Students can use blank notebooks, blank pages folded in half and stapled, or loose blank pages that can be stored in a folder. You can also use the reproducibles in Activities 3 and 4 to help students get started making field notes.

#### BIRDS AT WORK & BUTTERFLIES AFLUTTER—ACTIVITIES 3 & 4

Lanie's journey as a naturalist and activist starts with studying monarch butterflies, learning about their life cycle, and understanding how they survive. Then, when Aunt Hannah takes Lanie bird-watching the first time, Lanie's habit of making field notes helps her distinguish which bird is which. The reproducible for Activity 3 is designed to help students become more adept as bird-watchers, whereas the reproducible for Activity 4 will help them think about butterfly survival strategies.

#### MIGRATION MAZE—ACTIVITY 5

Lanie is fascinated to learn about monarch migration and the challenges that these butterflies face in migrating more than 3,000 miles. The Migration Maze reproducible highlights the many—and increasing—challenges that migrating animals face. Use it to begin a discussion on the challenges that modern life brings to wild animals and what humans can do to mitigate those challenges. The solution is to the left.

#### WORD SEARCH AND HIDDEN WORD PUZZLE—ACTIVITIES 6 & 7

The Wildflower Garden Word Search, Double Garden Scramble, and Hidden Words puzzle are extra handouts that combine science with language arts and are for students to do in their free time in class or at home. They reflect Lanie's passion to create and preserve a healthy habitat for butterflies and birds. Answers are to the left.





# Activity 1 VOCABULARY



## **Homing In on Habitat**

#### Habitat

- 1. The area or environment where an organism or ecological community normally lives or occurs—for example, a marine habitat
- 2. The place where a person, animal, or thing is most likely to be found





#### Mammal

Any of various warm-blooded vertebrate animals of the class Mammalia—including humans—characterized by hair on the skin and, in the female, milk-producing mammary glands for nourishing the young

#### Bird

Any of various warm-blooded vertebrates of the class Aves, distinguished by having a body more or less covered with feathers and the forelimbs modified as wings



## Amphibian

- 1. A cold-blooded, smooth-skinned vertebrate of the class Amphibia, such as a frog or salamander, that characteristically hatches as an aquatic larva with gills. The larva then transforms into an adult having air-breathing lungs.
- 2. An animal capable of living both on land and in water

#### Insect

Any small air-breathing arthropod of the class Insecta, having a body divided into head, thorax, and abdomen, three pairs of legs, and (in most species) two pairs of wings. **Factoid**: Insects comprise about five-sixths of all known animal species, with a total of over one million named species.



#### Reptile

- 1. An air-breathing vertebrate of the class Reptilia, distinguished by having a body usually covered with scales or bony plates
- 2. An animal that crawls or moves on its belly (as a snake) or on small, short legs (as a lizard)







## **Homing In on Habitat**

IN THE WILD	IN THE BACKYARD/AT HOME	HUMANS/MYSELF
(Picture or drawing)	(Picture or drawing)	(Photo or drawing)
Name/Type of Animal	Name/Type of Animal	My Name/Type of Animal
		/Mammal
Food (What the animal eats)	Food (What the animal eats)	Food (What I eat)
Water (Where the animal gets its water)	Water (Where the animal gets its water)	Water/Liquids (What I drink)
Cover (Where the animal sleeps)	Cover (Where the animal sleeps)	Cover (Where I sleep)
Places to Raise Young (Where does the animal have & raise its babies?)	Places to Raise Young (Where could the animal safely raise its young?)	Places to Raise Young (Where did your mom have & raise you?)



### **Field Notes**

Taking field notes is a great way to learn about the world around you. You will learn the most by observation, sketching, and taking notes in a notebook or journal. Here are some questions to ask yourself while bird-watching. The same types of questions apply when observing and making field notes about other animals or insects. To start, remember to look at the animal itself, not at a book.

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## How big is it? Is the bird small like a sparrow, medium-sized like a robin or cardinal, or large like a crow?



### What is it doing?

Is the bird walking up or down a tree trunk? Is it wading in water? Is it alone or in a flock? Does it bob its tail up and down? What is it eating?

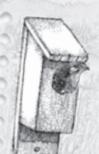
### What are its field marks?

The field marks on a bird are the stripes, colors, and shapes that identify a bird. Start at the head and work toward the tail. Ask yourself:

- Is the bird's bill long or short? Thick or thin? Curved or straight?
- What color is the crown of the bird's head? Are there stripes on its head? Around its eyes?
- Is the bird's breast plain or streaked? What color is it?
- Are there bars or bands of color on the wings? Are the wingtips a different color?
- Is the tail short or long? Thick or thin? Is it forked? Are there bars of color across the tail?

### Where is it?

Note where and when you saw the bird—both the date and time of day.



# Start a bird-watcher's Life List

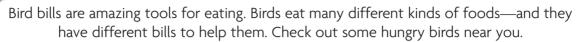
Birders like Lanie and Aunt Hannah keep lists of all the birds they have ever seen. Look for lists of birds that are common where you live, and then see how many of those birds you can find.

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# **BIRDS AT WORK**



Date	Time	Helpful things to take along:
Location		√ Bird field guides
Weather		√ Binoculars

Find some places where you can watch birds eating. Look for a variety of food sources, such as bird feeders, berries on trees or bushes, and trees with insects under the bark.

In the chart below, keep track of what you see.

Bird (name & description or drawing)	What is the bird eating?	What does the bird's bill look like? (Draw it.)	How does the bird use its bill to eat?
			A







# **BUTTERFLIES AFLUTTER**

Butterflies have lots of tricks that help them stay safe from predators. See if you can spot some tricky butterflies in your neighborhood.

In the box below, draw and describe a butterfly.

Does it have any "stay-safe" tricks? See the list below for some examples.

To get a closer view of a butterfly, you might want to snap its photo or catch it in a net. (Be very gentle, and let it go as soon as you have gotten a good look.)

A field guide may help you identify the butterfly and learn more about it, too.

Date	Time	Helpful things to take along: √ Butterfly field guide
Weather		√ Camera √ Butterfly net

# Type of butterfly: \_\_\_\_\_ricks for

# Butterfly tricks for staying safe

- Bright warning colors
- Fake eyes on its wings
- Fake antennae on the tail end
- Camouflage colors
- Looking like a flower or leaf
- Gathering in large groups

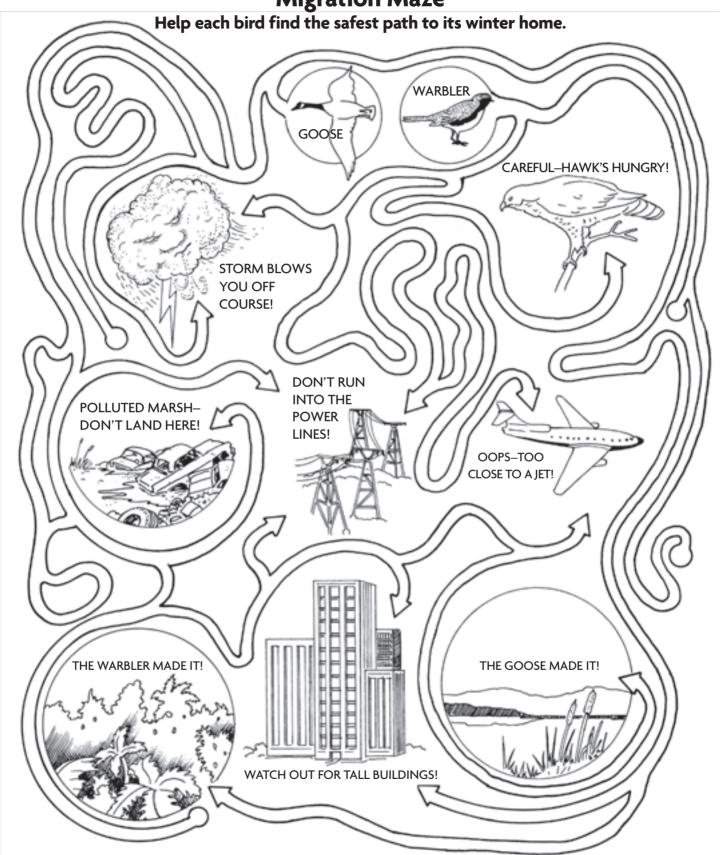




# Activity 5



**Migration Maze** 





### Wildflower Garden Word Search

Lanie planted a wildflower garden to provide food and habitat for birds, monarch butterflies, and other bugs. She put many native flowers and grasses in her backyard garden. Find the names of 18 native flowers and grasses in the puzzle at the right. They may appear backward, forward, up, down, or diagonally.

ALUMROOT	LOBELIA
ASTERS	MILKWEED
BEE BALM	MOUNTAIN LAUREL
BLAZING STAR	SEA OATS
BOX HUCKLEBERRY	SEDGE
<b>BUTTERFLY WEED</b>	<b>SWITCHGRASS</b>
CONEFLOWER	WILD COLUMBINE
GOLDENROD	WILD LEEK
LITTLE BLUESTEM	WILD PETUNIA

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В	٧	В	R	Ε	W	0	L	F	Ε	N	0	C	E	Z
E	N	1	В	M	U	L	0	C	D	L	1	W	U	M

## **Double Garden Scramble**

First, unscramble the letters below to find the names of some of the flowers in Lanie's garden. Then use the circled and boxed letters to unscramble Lanie's favorite wildflower—and the insects that depend on it.



STAERS	
NLGODEDOR	
WONCERFOLE	
LDWI INECBLOUM	$Q_{}$ $Q_{}$
EEB ALMB	
OXB YUKCELHBRER	
ZLABGIN RATS	
Write the letters that are <b>circled</b> : Write the letters that are <b>in boxes</b> :	
Unscramble the circled le	etters: Unscramble the boxed letters:

## **Hidden Words**

Working in her garden, Lanie discovers there are mysteries hidden everywhere in the natural world. See how many different words you can find hidden in the word BUTTERFLY. There are at least 30. Here are some clues to help you think of 15 of them.

1. What a butterfly does with its wings: _F	
2. Another word for "purchase": <u>B</u>	2200
<b>3.</b> You take a bath in it:	
<b>4.</b> It makes a fire burn or a car go: <u>F</u>	
<b>5.</b> A pixie-like creature: <u>E</u>	Se Company
<b>6.</b> It can be Golden and is sometimes broken: <u>R</u>	
7. Another word for "allow":	
8. To depend on someone or something: _R	
9. Another word for Christmas: Y	
<b>10.</b> A sound or word used to express disapproval:	
11. A small stringed instrument: <u>L</u>	
<b>12.</b> To make a sound or say something:	Illustration by Robert Papp from
<b>13.</b> A pesky insect; also what a bird does to move through the air: $\underline{F}$	iliustation by Robert Papp Iron Lanie's Real Adventures
<b>14.</b> It is sometimes used to catch fish: <u>L</u>	
<b>15.</b> A groove or a deep track worn by a wheel: <u>R</u>	

**BONUS CLUE:** A circular tent made of skins or felt: Y



### GIRL OF THE YEAR® 2010

Each January, American Girl introduces a new Girl of the Year, a character who shares the interests, activities, and aspirations of today's girls. From Lindsey™ to Chrissa™, these popular contemporary characters reflect the lives of real girls today. This year, Lanie™ inspires girls to get outside and explore the outdoors, instilling a spirit of discovery that will last a lifetime.



Chrissa (book 1) by Mary Casanova

Chrissa™ Maxwell moves to a new school and the girls in her fourth-grade class are decidedly unfriendly. When the teasing turns into serious bullying, Chrissa must find the courage to stand strong and speak out.



Chrissa Stands Strong (book 2)

by Mary Casanova

Chrissa's had a good summer and is looking forward to fifth grade. But when she and her friends start getting mean online messages, it's hard to know whom to trust. What can one girl do to put an end to bullying?



Mia and Bravo, Mia!

by Laurence Yep

Mia St. Clair grew up playing ice hockey with her three older brothers. Now she wants to pursue her passion for figure skating. Does she have what it takes to be a figure skater?



Nicki and Thanks to Nicki

by Ann Howard Creel

Nicki" is a natural with animals. When the chance to train a service dog comes up, she just can't say no—even though it means giving up some of her other interests.



Jess

by Mary Casanova

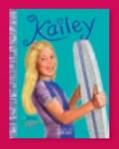
With her first step off the airplane and into Belize's tropical sunlight, Jess" is ready for adventure and anxious to discover just who she is.



#### Marisol

by Gary Soto

Marisol™ realizes that no matter where she is, it is her passion for dance that will help her persevere in the midst of change.



#### Kailey

by Amy Goldman Koss

Kailey™ loves the tide pools on her beach. Can she find a way to save them from a developer who wants to build a marina?



#### Lindsey

by Chryssa Atkinson

Lindsey™ just can't help wanting to help people—so why does she always seem to cause more problems than she solves?



