

# Habitats and the Environment

*A Science A-Z Life Series*

*Word Count: 1,282*



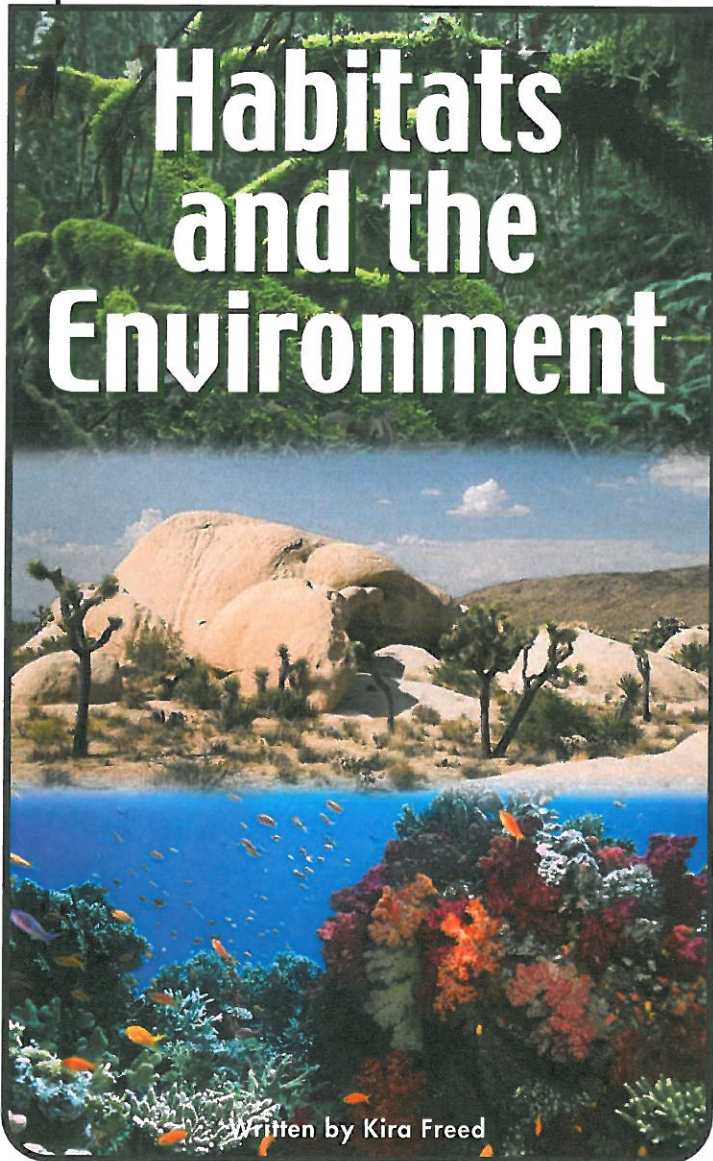
**Science a-z**

Visit [www.sciencea-z.com](http://www.sciencea-z.com)

 : **Science a-z**



# Habitats and the Environment



Written by Kira Freed

[www.sciencea-z.com](http://www.sciencea-z.com)

# Habitats and the Environment

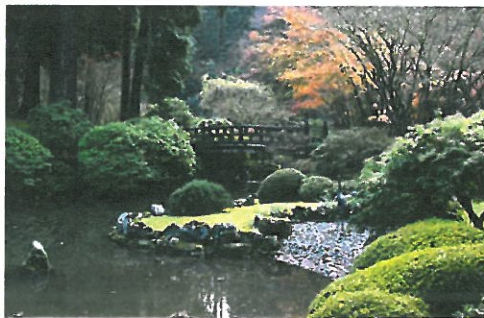


Written by Kira Freed

[www.sciencea-z.com](http://www.sciencea-z.com)

## Table of Contents

Introduction .....	4
The Building Blocks of Habitats .....	5
Surviving in Habitats.....	10
Three of Earth’s Habitats .....	12
Changing Habitats .....	18
Conclusion .....	22
Glossary .....	23
Index .....	24





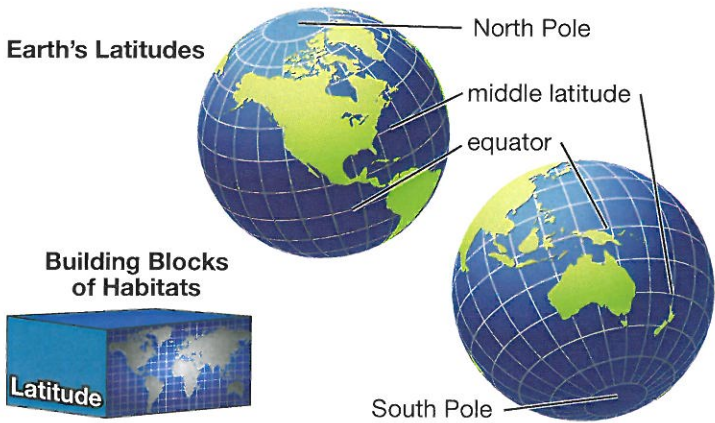
## Introduction

Can you imagine a wild polar bear living in Hawaii? How about a palm tree growing in Antarctica? You probably know that these things would never happen. But do you know why not?

A **habitat** provides a living thing with the food, water, air, and shelter it needs. Habitats have many parts that work together. In this book, you will learn about what makes up a habitat and how habitats are different for different living things. By the time you finish reading, you will know why the pictures on this page could not be real.



What's wrong with these photos?



## The Building Blocks of Habitats

Earth has many kinds of habitats. Why are there different habitats? To answer this question, let's learn about the building blocks of habitats.

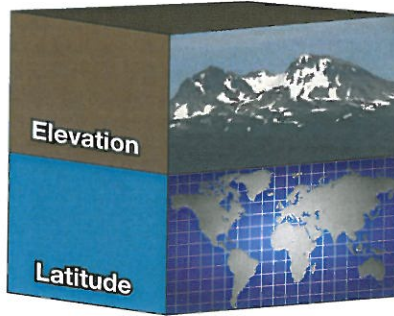
The first building block is **latitude**. Latitude measures how far a place is from Earth's equator, or middle. As Earth spins, the Sun's energy warms parts of the planet in different ways. The latitudes close to the equator are warmed more. The latitudes close to the North Pole and South Pole are warmed less.

In each band of latitude, some land is higher than other land.

**Elevation**—  
how high or low a place is—

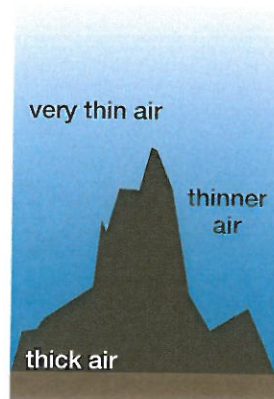
is the second building block of habitats. The Sun warms places with low elevation more than places with high elevation. Why is that?

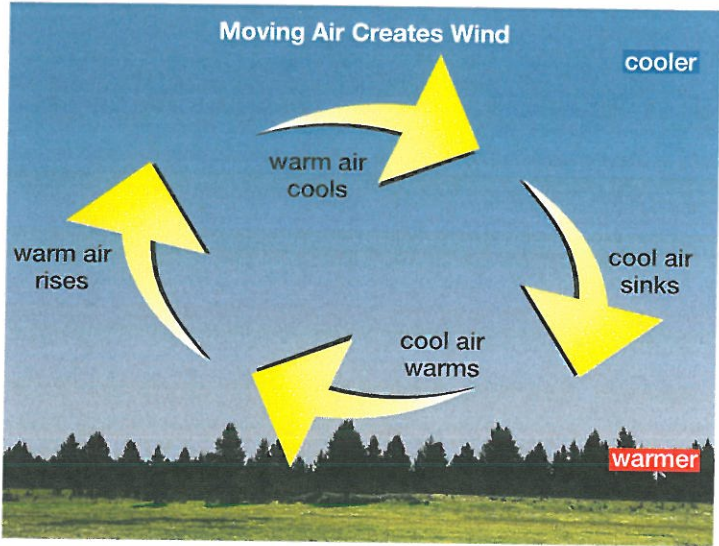
### Building Blocks of Habitats



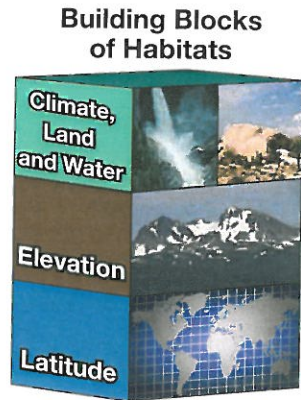
The air around Earth is the **atmosphere**. The atmosphere is like a blanket of air. Even air has weight and thickness. The blanket is thick close to the ground, so it holds in more heat. The blanket is thin in the mountains, so it doesn't hold in as much heat.

### Earth's Atmosphere





Warm air and cool air make wind when they meet. The wind carries moisture (water) between parts of the system. Differences in temperature, wind, and moisture produce different **climates** around our planet. Climate is weather patterns over very long periods of time. Climate is half of the third building block of habitats.



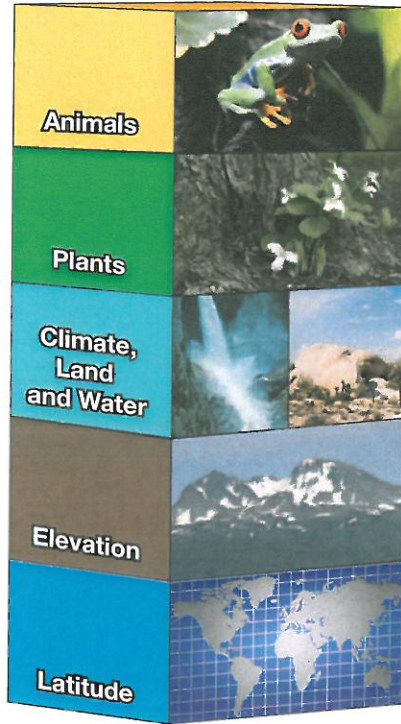


Land and water are as important as climate in building blocks of habitats. Almost three-fourths of Earth's surface is water, and most of that is in oceans. Earth's land is different from place to place. It may be flat or sharp with mountains. There may be lakes, streams, or little water. They are the other half of the third building block of habitats.



Earth has many kinds of land and water.

## Building Blocks of Habitats



All the building blocks we have talked about control what plants can grow in a place. And because many animals eat plants to stay alive, the plants have an effect on which animals can live in a place. So plants and animals are the last two building blocks of habitats. All these building blocks combine to make many different habitats on Earth.

## Surviving in Habitats

A habitat meets the needs of the things that live there. Living things **survive** best in habitats where all their needs are met. The most important needs are food, water, shelter, space, safety, and a place to have and raise babies.

Plants and animals in a habitat depend on one another. Every part of a habitat helps the system to be healthy.



A swallow uses the hole in a tree for a nest.



A bee carries pollen from one flower to another.

## ADAPTATIONS

### Behaviors



The giant carrion flower gives off a smell like rotting meat to attract flies. The flies carry the flower's pollen to other flowers.

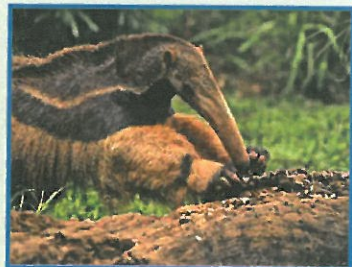
### Body Parts



The bottom plant in this photo, which grows mostly in shade, has large leaves to soak up as much sunlight as possible.



Musk oxen stand in a close circle to protect their young.



A giant anteater has a long snout that helps it find and eat insects.

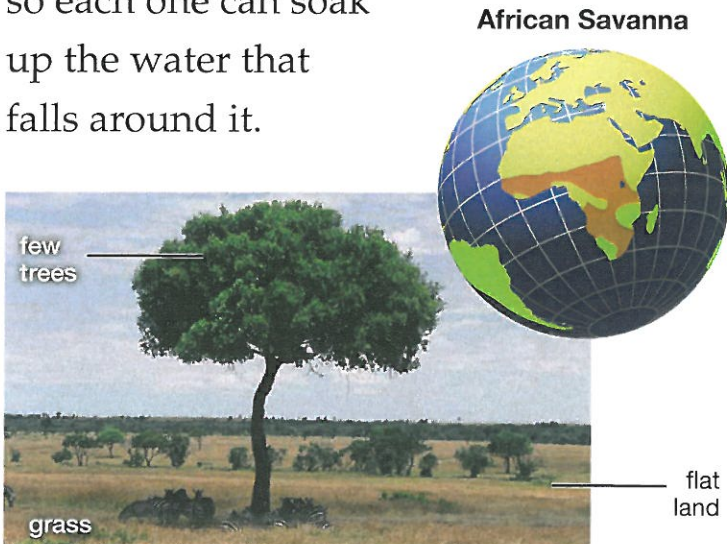
All living things have **adaptations** to survive in their own habitat. Adaptations are behaviors and body parts that help a living thing survive. These adaptations might not work well in other habitats.



## Three of Earth's Habitats

Earth's **environment** has living and non-living parts. It is made of many habitats. Let's look at three. The first is a savanna in Africa. A savanna is a grassland near the equator at a low elevation. The climate is hot, and it's dry most of the year. Heavy rains fall during the summer.

Most of the land is flat, and the main plants are grasses. Trees grow far apart so each one can soak up the water that falls around it.

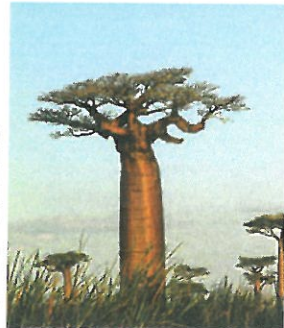




Zebras and wildebeests stand in groups to stay safe from lions.

### Do You Know?

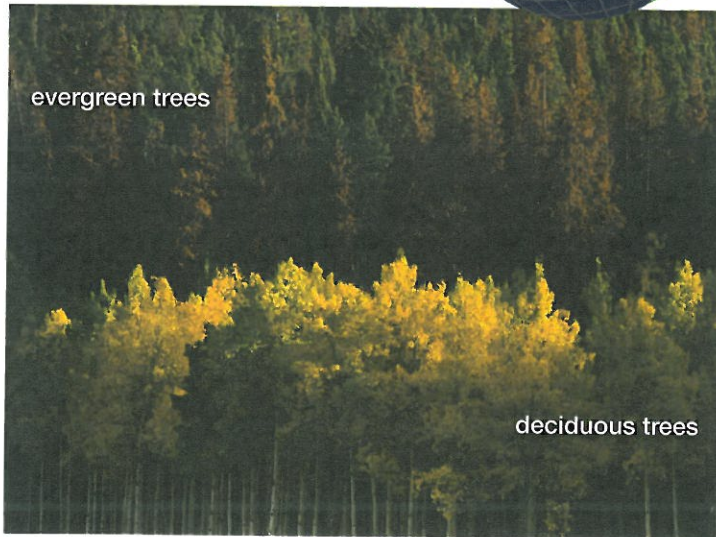
Baobab trees have adapted to the dry savanna habitat by storing water in their trunks. This water supply nourishes them during dry months.

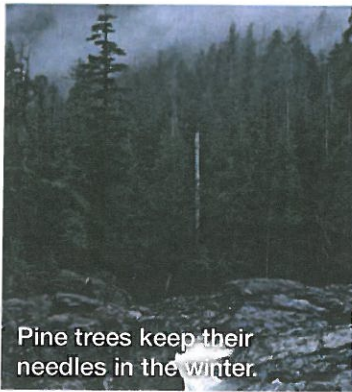


Animals in this habitat do not have many places to hide. Zebras and antelopes live in large groups to help them stay safe from lions and cheetahs. Small animals hide underground. Cheetahs use speed to catch their food. Lions use their good sight and hearing.

Next, let's visit a forest in a middle latitude. This habitat is farther from the equator, so it is cooler than a savanna. The climate changes more from season to season, and winters are cold. Many trees in this forest lose their leaves in winter. Losing leaves is an adaptation that saves water. As the weather warms up again in spring, the trees grow new leaves.

**Temperate Forest**





Pine trees keep their needles in the winter.



Canada geese migrate south to spend winter in warmer areas.

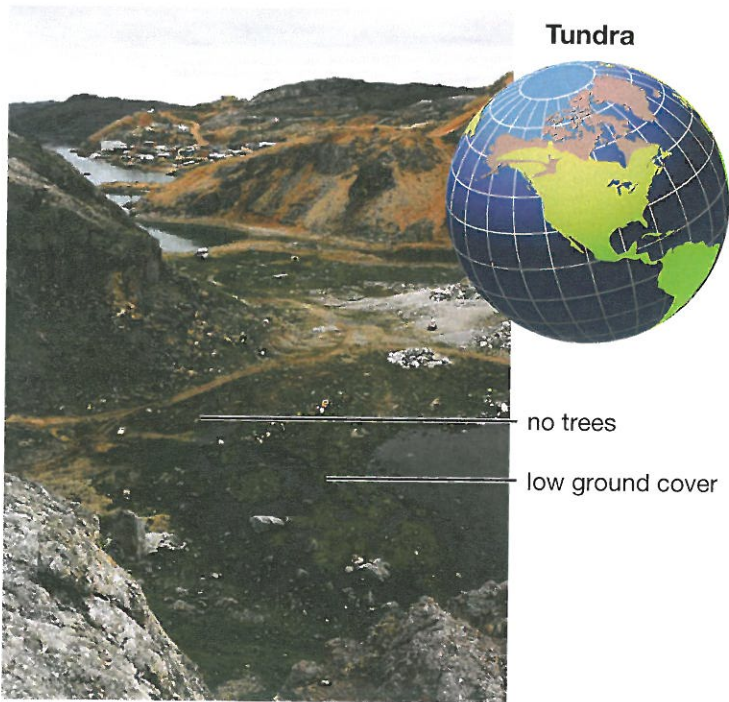
Some forests in middle latitudes are at a higher elevation. Evergreen trees grow in these forests. Most evergreens have small leaves or needles. The trees stay green in winter because they do not drop their leaves. This adaptation helps them survive in cold climates, where water may be frozen in winter.

Animals in mid-latitude forests have adaptations to survive the cold winters. Geese go to warm places to find food. Some animals save food to eat in winter. Other animals eat extra food in the fall and **hibernate** in winter.



Now let's visit a polar habitat—the tundra in northern Canada. This habitat has very cold weather. Snow and ice cover the land for much of the year.

Plants grow in places where the snow melts. Plants grow close to the ground to be safe from high winds. The tundra has very few trees because the ground is frozen, so deep roots cannot grow.





Many low-growing tundra plants are brightly colored in autumn.



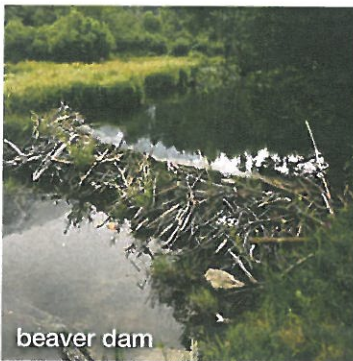
Caribou live in the tundra during the summer but leave in winter.

Many tundra animals leave during the coldest part of winter. The animals that stay all year have adaptations to help them survive the cold. Moose have thick fur to keep them warm. Seals and whales have lots of fat to keep them warm in icy water. Some small animals stay underground in winter.

## Changing Habitats

Many things can cause habitats to change over time. The things that live in a habitat can change it. Nature can change a habitat. And people change habitats.

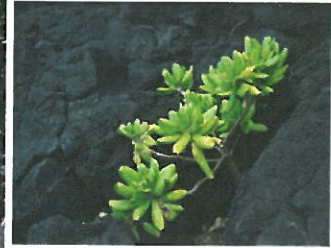
Animals change habitats in many ways. Beavers build dams across streams. The dams cause the streams to flood, which makes new habitats for frogs, turtles, and other animals. Earthworms dig tunnels in the ground. The tunnels let air into the ground, which helps plants to grow better.



beaver dam



earthworms in soil



Lava burns everything in its path. But cooled lava rock is rich in nutrients, providing a great place for new plants to grow.

Fires, floods, weather, and other events in nature change habitats, too. When a volcano erupts, lava and mud cover everything in their path. The volcano destroys a habitat, but it also makes a new one. Lava from volcanoes made the Hawaiian Islands. A hurricane can wash away a sandy island, or make a new one. Nature often destroys part of a habitat or creates a new one.





Cutting down trees destroys animals' homes.

People also change habitats. They cut down forests for wood and to make farms. In some places, they build cities that cover land with concrete and buildings.

You can change the habitat in your own backyard. A bird feeder brings new animals. A garden adds new food for animals.





Pollution from factory pipes and erosion can change nearby water enough to kill fish and other animals.

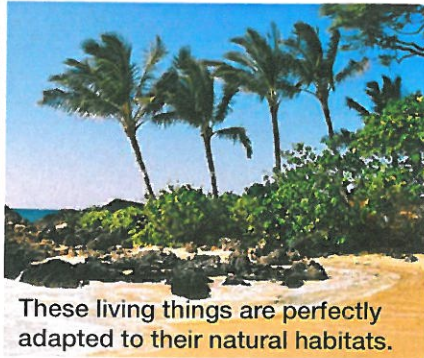
People also change habitats by causing **pollution**. Some factories dump bad chemicals into the air or water. When people throw away batteries, phones, and many other things, bad chemicals get into the ground. Rain carries these chemicals into the water.

**Erosion** hurts habitats, too. When people cut down forests, the ground is not held together as well, so rain can wash it away. Many other things that people do can hurt habitats, too.

## Conclusion

In this book, you have learned about the building blocks of habitats—latitude, elevation, climate, land, water, plants, and animals. You have also learned how all the things in a habitat belong together. Now you know why the pictures on page 4 could not be real.

Each of Earth's habitats is a system. All the parts of the system work together. When the balance is upset, living things struggle to survive. They may even disappear. What can you do to help the balance of Earth's habitats?



These living things are perfectly adapted to their natural habitats.

## Glossary

<b>adaptations</b>	changes in an organism or species that allow it to survive better in its environment (p. 11)
<b>atmosphere</b>	a layer of gases surrounding a planet, star, or moon (p. 6)
<b>climates</b>	the weather conditions in an area over a long period of time (p. 7)
<b>elevation</b>	the height of land above sea level (p. 6)
<b>environment</b>	all the living and non-living parts of Earth (p. 12)
<b>erosion</b>	the gradual wearing away of rock or soil by water, wind, or ice (p. 21)
<b>habitat</b>	the place in which a plant or animal lives and receives what it needs to survive (p. 4)



<b>hibernate</b>	to go into a state of deep sleep, often during winter (p. 15)
<b>latitude</b>	a measure of how far a place is from the equator (p. 5)
<b>pollution</b>	harmful material in the air, in water, or on the ground (p. 21)
<b>survive</b>	to stay alive; to continue to exist (p. 10)

### **Index**

land and water features, p. 8

people's impacts on habitats, p. 20–22

savanna habitat, p. 12–13

temperate forest habitat, p. 14–15

tundra habitat, p. 16–17

wind, p. 7

## KEY ELEMENTS USED IN THIS BOOK

**The Big Idea:** Plants and animals, including humans, each live in a habitat. When a habitat changes, the organisms that live within it must either adapt or move out of it in order to survive. Only those organisms that successfully adapt will survive and pass their genes to future generations within the habitat. Human activity can have considerable effects on natural habitats. Taking action to protect a habitat from harmful changes could provide a healthy and sustainable environment for many species in the future.

**Key words:** adaptation, atmosphere, building block, climate, elevation, environment, equator, erosion, habitat, hibernate, latitude, moisture, polar, pollution, savanna, shelter, survive, tundra, weather

**Key comprehension skills:** Compare and contrast

*Other suitable comprehension skills:* Cause and effect; classify information; main idea and details; identify facts; elements of a genre; interpret graphs, charts, and diagrams

**Key reading strategy:** Ask and answer questions

*Other suitable reading strategies:* Connect to prior knowledge; summarize; visualize; using a table of contents and headings; using a glossary and bold terms

### Photo Credits:

Front cover (top, center), title page, pages 4 [polar bear, ice flow], 7, 8 [left column, bottom right], 11 [bottom left, bottom right], 12 [left], 15 (top left), 16 [left], 22 [left]: © Jupiterimages Corporation; front cover (bottom): © iStockphoto.com/John Anderson; back cover: © iStockphoto.com/Brandon Alms; page 3: © iStockphoto.com/Heidi Masteller; pages 4, 22 (palm trees): © iStockphoto.com/Jay Spooner; pages 5, 12, 14, 16 (globes): © iStockphoto.com/Ted Grajeda; page 8: iStockphoto.com/Ian Graham; page 10 [left]: © iStockphoto.com/Paul Tessier; page 10 [right]: © iStockphoto.com/Serdar Yagci; page 11 [top left]: Sheryl Shetter/© Learning A-Z; page 11 [top right]: © iStockphoto.com/Marcus Lindström; page 13 [top]: © iStockphoto.com/Jeroen Peys; page 13 [bottom]: © iStockphoto.com/Jeu; page 14 [bottom]: © iStockphoto.com/Adventure Photo; page 15 [top right]: © iStockphoto.com/Sarah Holmstrom; page 17 [all]: © iStockphoto.com/TT; page 18 [left]: © iStockphoto.com/Yenwen Lu; page 18 [right]: © iStockphoto.com/Viorika Prikhodko; page 19 [left]: © Wayne Levin/Getty Images; page 19 [right]: © iStockphoto.com/Tony Sanchez-Espinosa; page 20 [top]: © iStockphoto.com/Joseph Luoman; page 20 [bottom]: © iStockphoto.com/Andrew Howe; page 21 [top left]: © iStockphoto.com/Philip Puleo; page 21 [top right]: © iStockphoto.com/Clint Spencer

### Building Blocks:

Animals: iStockphoto.com/Brandon Alms;  
Plants; Climate, Land and Water; Elevation: © Jupiterimages Corporation  
Latitude: © iStockphoto.com/Edward Grajeda

Habitats and the Environment

© Learning A-Z

Written by Kira Freed

All rights reserved.

www.sciencea-z.com