WELCOME TO THE *NATURAL INQUIRER* WORLD'S FORESTS THIRD EDITION!

EDUCATORS!

READ THE NOTE TO EDUCATORS ON PAGE 9

Have you heard of the United Nations? The United Nations (UN) is an international organization that was established in 1945. Today, nearly every nation in the world belongs to the UN. In total, 193 countries are members of the UN. These nations are working together for peace, human rights, freedom, and social progress.

YOU DO THE MATH

How old is the UN today?

The Food and Agriculture Organization (FAO) is a part of the UN. FAO helps countries improve their agriculture, forestry, and fisheries practices. FAO also helps these countries provide good nutrition for all.

GLOSSARY

The Glossary on page 60 to 61 provides definitions for words in **bold**. If you do not understand a word that is in bold, be sure to use the glossary! If you do not understand any word that is not bolded, be sure to look it up in a dictionary.

Since 1948, FAO has been collecting information about the world's forests. It may seem unusual for an organization concerned with food and agriculture to be studying forests.

Trees, however, are important for human nutrition. Trees have many links to agriculture. They help protect soil and water needed for food crops. People use forests and plant trees for the many benefits trees and forests provide, including food, energy, wood products, medicines, and places for outdoor recreation and spiritual renewal (Figure 1 and Figure 2). Trees also help protect the environment.

FIGURE 1.
Cacao is a tropical tree that produces cacao seeds, or cocoa beans. People use cacao seeds to make cocoa, cocoa butter, and chocolate. Cacao trees are **native** to Central America and South America.
Photo courtesy of David Cappaert http://www.bugwood.org.

FIGURE 2.
Forests provide a place for people of all ages to observe and enjoy nature.
Photo courtesy of Babs McDonald.

YOU DO THE MATH

For how many years has FAO been collecting information about the world's forests?

The more knowledge FAO can collect and share about trees and forests, the more successfully it can help countries like yours grow and manage healthy forests. More information also helps your country take better advantage of forest benefits. These benefits improve the lives of all people. You will learn about the benefits provided by forests in Inquiry 2 on page 28.

Every 5 years, FAO publishes a report about the world's forests. The 2015 report was the source of information in this *Natural Inquirer*. The report contains information about forests in 234 countries and territories—these are the world's forests. No matter where these forests are located, they provide benefits for people and wildlife across our entire planet.

This *Natural Inquirer* presents much of the information by continent. The world has seven continents (Figure 3). These continents are Africa, Antarctica, Asia, Europe, North and Central America, Oceania, and South America. This journal contains information for every continent except Antarctica (Figure 4).

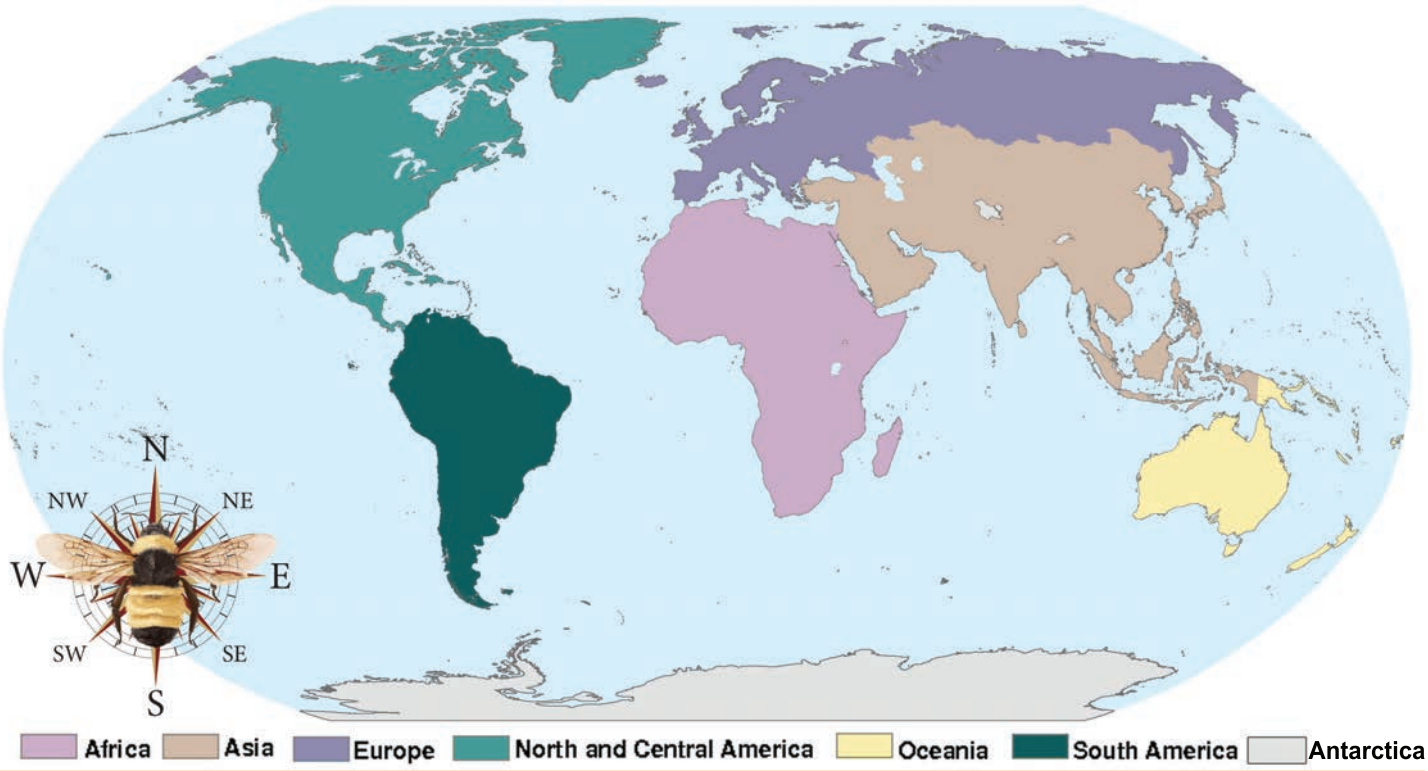


FIGURE 3.
Earth has seven continents and five oceans. This report presents much of the information by continent. Take a moment to identify the continent where you live.
Map courtesy of Food and Agriculture Organization of the United Nations.

FIGURE 4.
Antarctica is one of the world's seven continents. Locate Antarctica on the map in Figure 3. Why do you think the report on the world's forests does not include Antarctica?
Photo courtesy of Chuck Murphy, http://www.boywithcamera.com.

This journal contains three Inquiries. Each Inquiry represents a study done by FAO's team of scientists and country correspondents. Each Inquiry answers questions about the world's forests. After you complete all three Inquiries, you will know some new facts about the world's forests.

Each Inquiry builds on the previous Inquiry. It is best, therefore, to read the Inquiries in the order presented. As you read about FAO's work to collect data about the world's forests, think about the forests you have seen, visited, or read about.

If you want more information, you can see the entire report about the world's forests, *Global Forest Resources Assessment 2015*, second edition, at **http://www.fao.org/3/a-i4793e.pdf**.

THINKING ABOUT THE WORLD'S FORESTS

Forests are important to everyone. Worldwide, people benefit from forests, even if those forests do not exist in their own community. Forests provide materials such as wood for building or for energy. Forests provide food for people and for animals. Forests provide **habitat** for many different kinds of plants and animals, which helps maintain the **diversity** of life on Earth (Figure 5). Forests protect the quality of water and help keep the soil from **eroding**. Forests help keep the air clean and provide places for people to live and play. In many places, forests provide jobs, which help people and their families have better lives. Forests also hold carbon on Earth, which helps slow the rate of climate change. In this journal, you will learn how forests benefit people worldwide.

Forests contain different tree species depending where they are on Earth. Different types of forest exist mainly because they grow under different climates (Figure 6).

FIGURE 5.
Baboons in Botswana, a country in southern Africa. Photo courtesy of Chuck Murphy, **http://www.boywithcamera.com.**

This journal will help you understand the worldwide importance of forests and will inform you on how they are changing. Learning about forest **trends** will help you predict what may happen to our forests in the future.

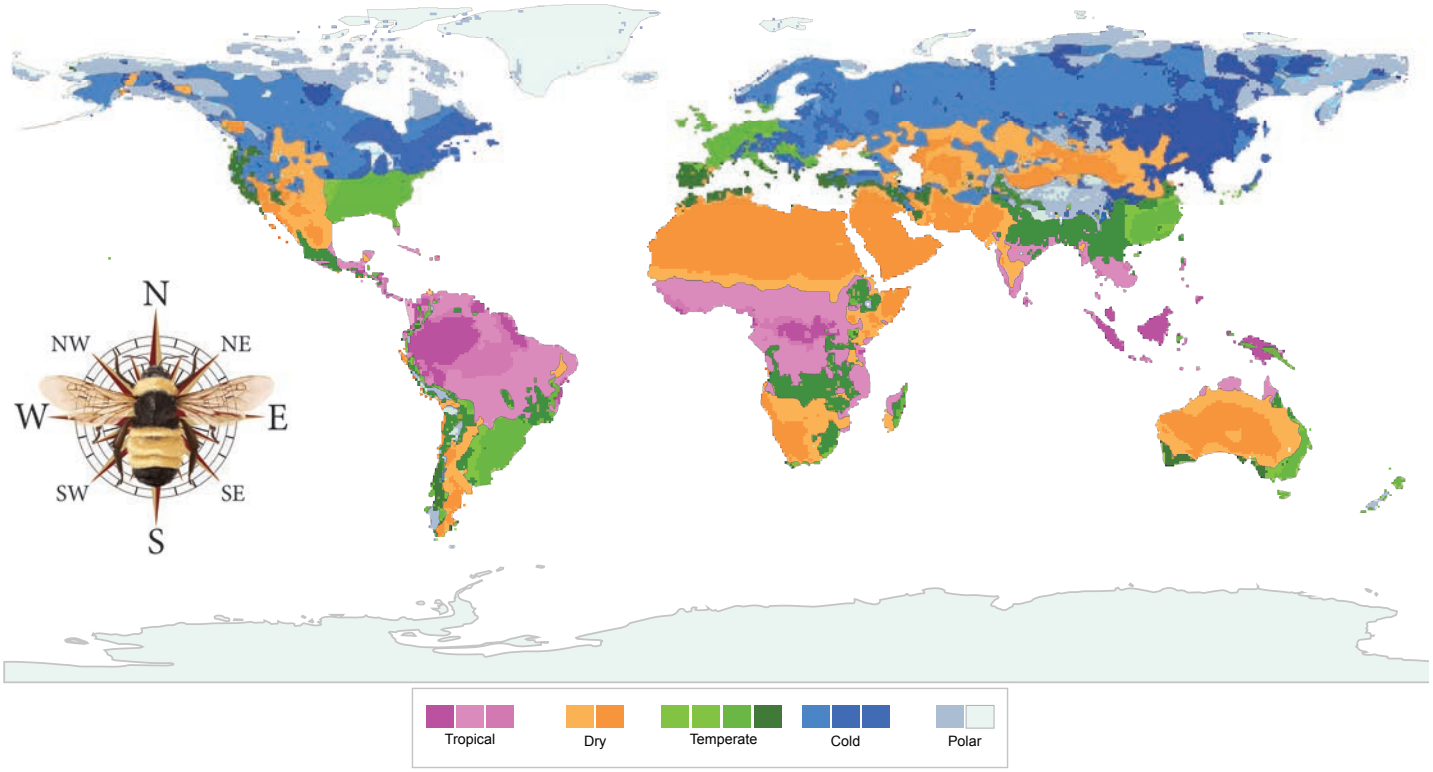
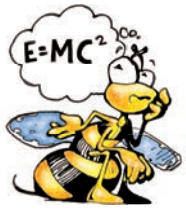


FIGURE 6.
Different climates characterize different places on Earth. An area's climate is identified by the average weather that occurs there over a long period.
Map by Carey Burda and Stephanie Pfeiffer, adapted from the Köppen Climate Classification System.



THINKING ABOUT SCIENCE

When scientists want to learn something, they must collect data. Although you might not realize it, you do the same thing when you want to learn something. When scientists collect data in the form of numbers, they can add, subtract, multiply, and divide the numbers. They can also calculate new numbers, such as **averages**. Numbers help scientists compare information collected from different places or times. However, if scientists collect numbers at different places or times, they must collect the numbers using the same **unit of measurement**. Otherwise, the calculations will be meaningless, like comparing apples and oranges.

Let's say, for example, that a scientist wants to calculate an average air temperature for one month across the entire Southern Hemisphere (Figure 7). Some measurements and records of air temperatures are in degrees Celsius and some are in degrees Fahrenheit. Would averaging those measurements allow the scientist to come up with a meaningful conclusion? Of course not! The scientist would have to change each number to the same unit of measurement. All air temperatures would have to be in Celsius or in Fahrenheit. Only then could the scientist calculate an average air temperature.

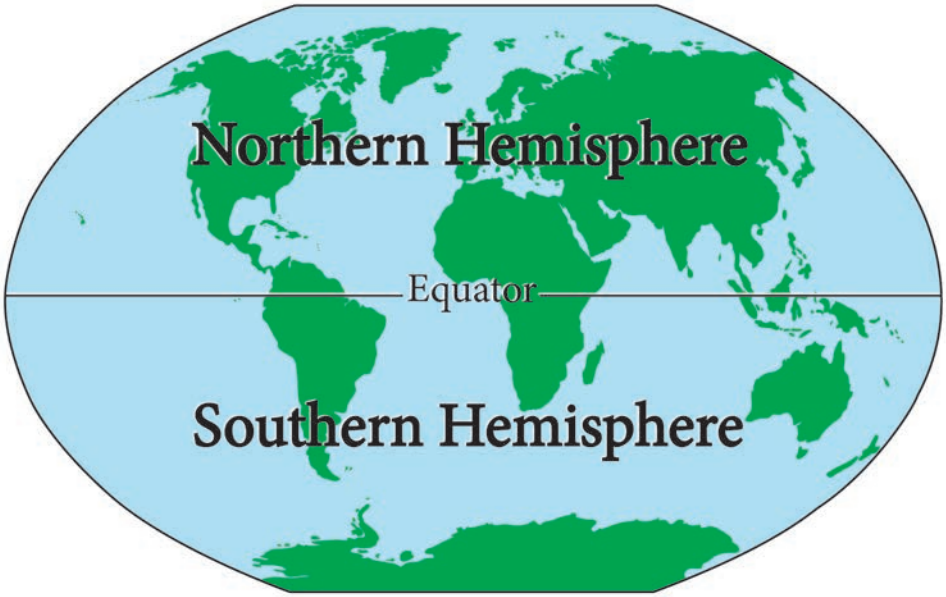


FIGURE 7.
The Southern Hemisphere is the area on Earth's surface that lies south of the **Equator**.
Illustration by Stephanie Pfeiffer.

This same scientist has found that some countries reported a daily air temperature using the highest temperature measured over a 24-hour period each day. Other countries used an average temperature calculated over a 24-hour period. Would averaging these measurements provide a meaningful conclusion? Again, the answer is no. For scientists to be able to combine numbers, the numbers must represent the same thing. Otherwise, their calculations are meaningless.

The scientists in this study wanted to learn about forests across our planet. To collect, analyze, and share this information, FAO worked with individuals from 155 countries, called **correspondents** (Figure 8).

FIGURE 8.
Correspondents from each country helped the Food and Agriculture Organization of the United Nations (FAO) collect information about their country's forests. The correspondents gave their country's data to FAO. They worked with FAO to make sure the numbers they provided represented the same thing. This allowed the scientists to combine the numbers from different countries.
Photo courtesy of Chiang Mai, Royal Forest Department of Thailand, and Food and Agriculture Organization of the United Nations.