2.2 World Climate Regions
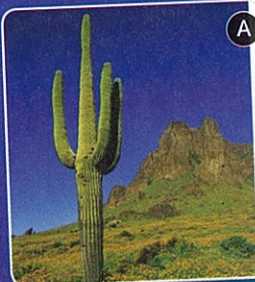
Main Idea Geographers identify climate regions to help them understand and categorize life on Earth.

A climate region is a group of places that have similar temperatures, precipitation levels, and changes in weather. Geographers have identified 5 climate regions that are broken down into 12 subcategories. Places that are located in the same subcategory often have similar vegetation, or plant life.

Before You Move On

Make Inferences How might climate regions help geographers analyze life in a particular place?

A **Dry Climates** have little to no rain or snow and both hot and cold temperatures. Plant life includes shrubs and cacti.

Saguaro Cactus, Sonoran Desert, Arizona

B **Humid Temperate Climates** have cool winters, warm summers, and ample rainfall. Plant life includes mixed forests with evergreens and leafy trees.

Mixed Forest, Great Smoky Mountains, North Carolina

C **Humid Equatorial Climates** are found near the equator. They have high temperatures and rainfall all or most of the year. Plant life includes tropical plants and rain forests or grasslands with trees.

Bromeliads, Amazon rain forest, Peru

WORLD CLIMATE REGIONS

ARCTIC OCEAN

NORTH AMERICA

PACIFIC OCEAN

ATLANTIC OCEAN

EUROPE

ASIA

AFRICA

SOUTH AMERICA

INDIAN OCEAN

PACIFIC OCEAN

AUSTRALIA

ANTARCTICA

D **Tundra** or **Ice Climates** are north of the Arctic Circle and south of the Antarctic Circle. They have long, cold winters and short summers. Plant life includes mosses or no vegetation.

Mosses, Disko Bay, Greenland

E **Humid Cold Climates** have cold winters, warm summers, rain, and snow. Plant life includes evergreen or deciduous (leafy) forests.

Natural Park, Eastern Siberia, Russia

Humid Equatorial
- No dry season
- Short dry season
- Long dry season

Dry
- Semiarid
- Arid

Humid Temperate
- No dry season
- Dry summer
- Dry winter

Humid Cold
- Dry winter
- No dry season

- Tundra or ice
- Unclassified highlands

ONGOING ASSESSMENT

MAP LAB

GeoJournal

1. **Interpret Maps** What is the most common climate in northern Africa? How might this climate affect population?

2. **Compare and Contrast** How does the climate of western Europe differ from that of eastern Europe?

3. **Human-Environment Interaction** What advantages would humid temperate climates have for farming? For logging?

Climate
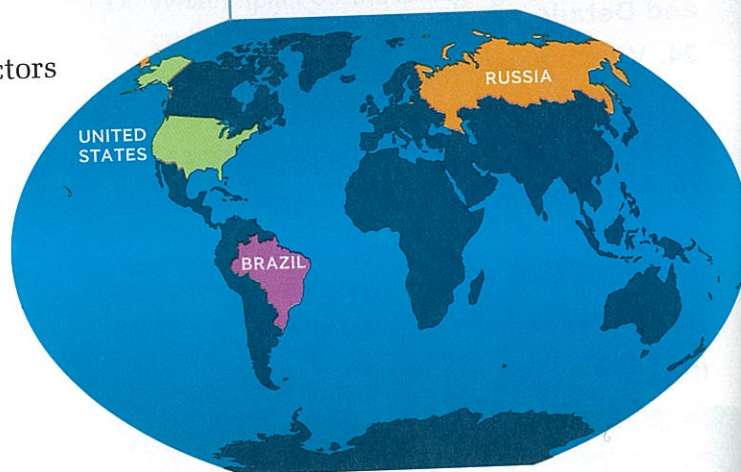
In this unit, you learned that climate is the average condition of the atmosphere in a region over a long period of time. Climate is determined by the latitude of a location, as well as by ocean currents, air currents, and elevation.

Two important factors of climate are temperature and precipitation. These factors determine the length and timing of the growing season and influence the types of economic activities in a region. For instance, a country with year-round warm temperatures and precipitation probably has a better agricultural industry than a country with low temperatures and a short rainy season.

Compare

- Brazil
- Russia
- United States

UNITED STATES

RUSSIA

BRAZIL

CLIMATE MAPS AND CLIMOGRAPHS

A climate map provides an overview of the climate in a region. However, sometimes more specific information about a city or country is needed. Geographers use a special tool called a **climograph** (climate + graph) to graphically show a range of temperature and precipitation in a place over a period of time. A climograph includes a bar graph that shows the amount of precipitation for a location. Average monthly temperature is shown by a line connecting 12 points, one for each month of the year.

Climographs are useful in comparing the climates of two different locations. They help geographers and others better understand the effects of climate on human activities in those locations.
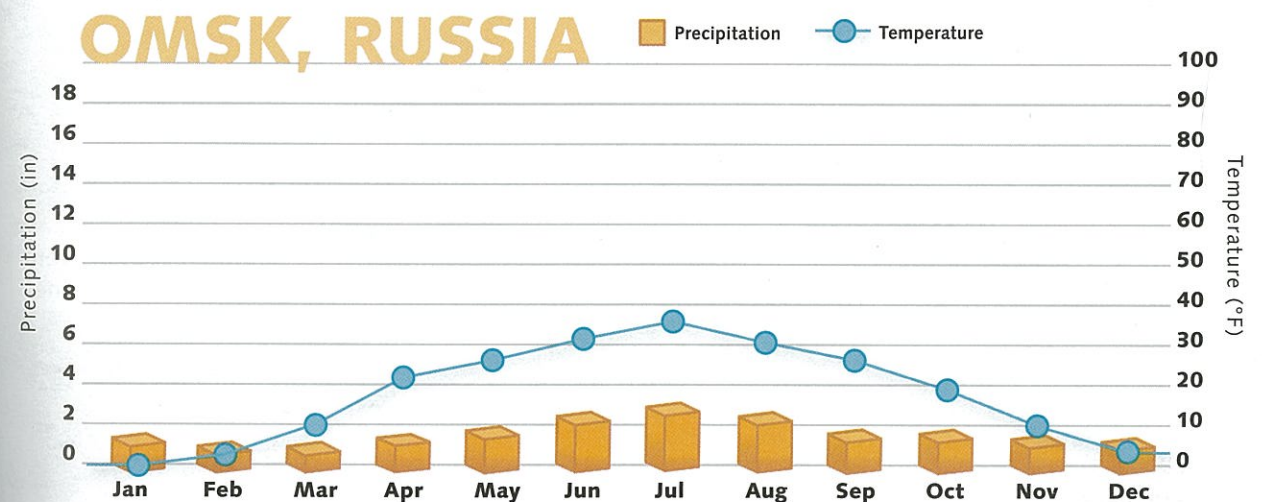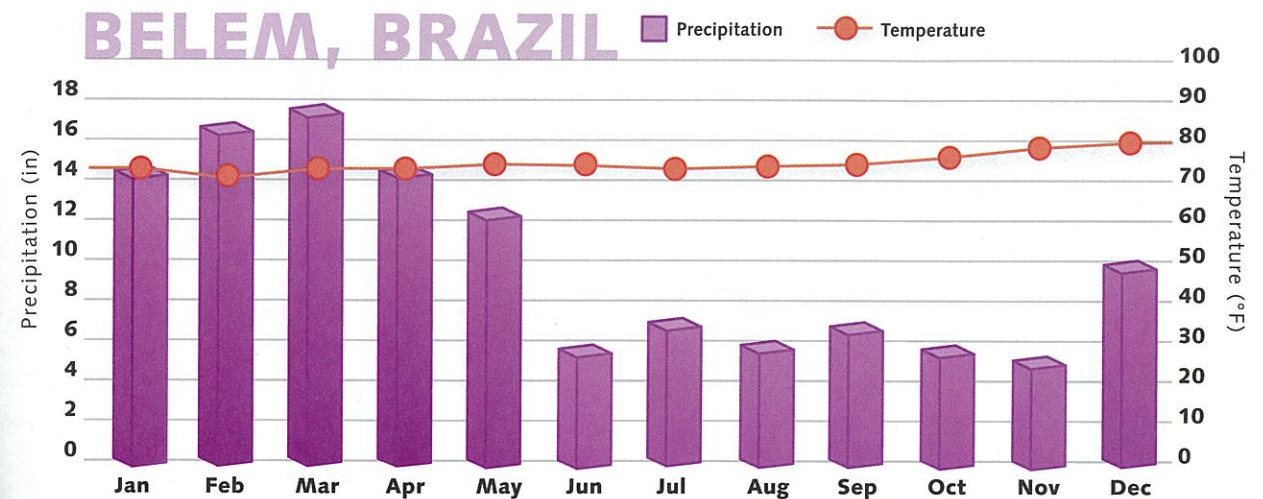
INTERPRET CLIMOGRAPHS

Look at the climographs for the cities of Belem, Brazil, and Omsk, Russia, on the opposite page. The months of the year are listed across the bottom of each climograph. A scale on the left vertical axis measures precipitation, or rainfall, in inches. A scale on the right vertical axis measures temperature in degrees Fahrenheit (°F).

The bars on the climographs show the rainfall for Belem, Brazil, and Omsk, Russia. The lines connecting the dots show the range of temperatures for each location.

Study the data in the climographs to analyze the climate in Belem and Omsk. Then answer the questions at right.

AVERAGE MONTHLY TEMPERATURE AND PRECIPITATION

BELEM, BRAZIL
Precipitation · Temperature

OMSK, RUSSIA
Precipitation · Temperature

Source: National Drought Mitigation Center, University of Nebraska–Lincoln

RESEARCH LAB GeoJournal

1. **Interpret Graphs** How would you describe the range of temperatures in Belem? What is the average temperature in Omsk in January? In July?

2. **Make Inferences** Most crops need water and warm temperatures in order to grow. Based on this information, what can you tell about the growing season in each city?

Research and Create a Climograph Choose a city in the United States and do research to find the average temperature and rainfall for each month of the year. Record the data in a chart. Use the data to create a climograph for that city. Then, with a partner, write three questions to help someone analyze and compare data on your two climographs.