Chapter 2

An airplane trip around Nevada would show you a strange and beautiful land. Parts of Nevada look like an alien planet. Rugged mountains and flat deserts appear to have no trees or plants. It seems as if nothing could survive here.

In other parts of our state, there are valleys covered with green farmland. Many Nevada mountains are covered in thick forests. Our grazing lands sometimes stretch for miles. Towns are few and often far apart. Nevada is, more than anything else, a land of contrasts.
Our Place on Earth

The story of Nevada begins with our geography. How people change the land is also a part of geography.

On our adventure, you will learn about Nevada’s land and waterways. You will learn about the plants and animals that live here. You will see how people live and how Nevada geography affects our lives.

Where in the World Is Nevada?

Of course you already know that we live on Earth. But just where on Earth is Nevada? Nevada is located in the Northern Hemisphere. A hemisphere is exactly one half of the Earth.

Nevada is also part of the North American continent. Continents are the earth’s largest bodies of land.

The United States is a country on the North American continent. Our state of Nevada is in the western United States. Five other western states touch the borders of Nevada. Can you name all of them?

Locating Home

By now you can probably find your way home from school or a friend’s house. Can you also tell someone how to get to your home? What would you tell them about your home’s location? You could give them its relative location or its exact location.

Relative location tells where a place is in relation to other things. For example, Nevada is west of Utah and east of California. It is between Oregon and Arizona. You could tell someone that you live near Reno or next to the school. You might say you live down the street from a friend.

Exact location tells someone exactly where to find a place. An address is an exact location. To give your exact location you would say, “I live at 309 Sidewinder Street in Ely, Nevada.”
We live in the Northern Hemisphere of the Earth.

Our continent is North America.

Our country is the United States of America.

Our state is Nevada.
Lines Around the World

Every place in the world has an exact location using a set of imaginary lines on the Earth. These imaginary lines are called **latitude** and **longitude** lines. Latitude and longitude lines run up and down and side to side. They also cross each other at certain points. Each point marks a certain place, so if you know the longitude and latitude of a place, you can easily find it on a map.

A Greek **astronomer** named Ptolemy invented this system almost 2,000 years ago. His system helped travelers find their way.

Follow the Numbers

Latitude and longitude lines each have a number with a tiny circle next to it. We call these circles degrees. Degrees measure distance on a globe or map. They are numbered from 0 to 90. The **equator** is at 0 degrees latitude. The North Pole and South Pole are at 90 degrees latitude.

Running From Side to Side

Latitude lines run across a map or globe from side to side or east and west. Because some latitude lines are above the equator and some are below it, latitude lines are labeled north (N) and south (S). Is 45 degrees N latitude above or below the equator? If you said above you, are correct because it is north of the equator.

Latitude lines also give us clues about how hot or cold a place gets. The farther away from the equator it is, the colder it gets. Did you know that there is snow year round at the North and South Poles? Can you locate the poles on a map or globe?

Going Up and Down

The second set of imaginary lines that help us locate places are called longitude lines. These lines run up and down, from the North Pole to the South Pole. Longitude lines are also called **meridians**.

A special longitude line is called the **prime meridian**. It goes from the North Pole to the South Pole at 0 degrees. Can you find the prime meridian on the globe pictured here? Because some longitude lines are to the right of the prime meridian and some are to the left, longitude lines are labeled east (E) and west (W). Is 15 degrees E longitude right or left of the prime meridian? If you said right, you are correct because it is east of the prime meridian.
**Activity**

**Where Is Nevada?**

On this map, find Nevada's latitude (side to side) and longitude (up and down) lines. On a globe, use your finger to trace these lines all the way around the world.

1. Which longitude line is near the western border of our state?
2. Locate the city of Ely on the map. What is its latitude and longitude?
3. Find the latitude and longitude of the city nearest your home.

**Which Half Is Which?**

As you already know, the equator divides the earth into two equal halves. When the Northern Hemisphere is having winter, the Southern Hemisphere is enjoying summer.

Longitude lines also divide the earth into two parts. These are called the Western and Eastern Hemispheres. You can see them in the drawings below.
Discovering Maps
Did you know that all modern maps begin as photographs? Photographs are taken from airplanes, satellites, or spacecraft. They help make maps more accurate by giving us more complete information. Older maps used to be drawn by hand using special tools. Sometimes mapmakers still use these tools when mapping small distances.

Maps come in all shapes and sizes. Can you think of some? Maybe you thought of a treasure map! Maybe you thought of the road maps your parents use on trips. Maps help us know where we are and where we want to go. Look at the map of Nevada on the previous page. The green boxes show us tools that help us read a map.

Activity

Nevada on a Map
Use the compass rose and legend on the map of Nevada to answer the following questions:

1. What direction do you travel to go from Reno to Las Vegas?
2. What direction do you travel to go from Lake Mead to Lake Tahoe?
3. In what part of the state is the Humboldt River?
4. In what part of the state is Carson City?
5. Name the two cities that are nearest to Nevada's northern border.

Memory Master

1. What is geography?
2. Why do we use latitude and longitude lines?
3. How do modern maps begin?
What Kind of Place Is Nevada?

Nevada is a place with many beautiful features. Some of them are natural features, like soil, lakes, plants, and animals. Some of them are human features, such as cities, barns, homes, shopping malls, bridges, and roads. Many of these features make Nevada different from other states.

Our Natural Resources

Nevada is a state rich in natural resources. Natural resources are things found in nature that are useful to people. Today, our state mines more silver and gold than any other state. Turquoise and copper are other important metals found in our soil. Minerals such as gypsum, limestone, and salt, are Nevada resources too. Salt mined in our state is used to melt icy winter roads.

People in our state use the land as a resource to raise crops and animals. Many ranches in the northeast part of Nevada feed, or graze, their cattle and sheep on our state’s rangelands. There are also farmers here who grow wheat, hay, potatoes, barley, and other important crops.
Water is another important natural resource in Nevada. We need water to drink, to cook, and to bathe. Our crops need water to grow, and our animals must have it to live. Water power is used to make electricity too. Nevada’s lakes, rivers, and dams are our major sources of water since little rain falls here.

Natural resources are very important to our state. Using them wisely now will make life better for future Nevadans.

Activity

Using the Land
This map shows some of our state’s resources and industries. Each picture symbol shows the areas where a product is grown or produced. Study the map and answer these questions:

1. List four resources shown on this map.
2. Name two areas in Nevada where potatoes are grown.
3. If you lived in Las Vegas, would you grow wheat? Why or why not?
4. Pick one of our state’s resources to learn more about. Try to find out why that resource is so important to Nevada.

Nevada is a mineral-rich state. Do you know the names of any of these minerals?
Nevada’s Natural Ecosystems

An **ecosystem** is a special community where certain plants and animals live. There are many natural ecosystems in Nevada. Here are just a few of them:

**Desert**

A desert is a hot, dry place with little rainfall and miles of sand and rock. Plants and animals that live in the desert know how to survive on little water. Some animals come out only at night when the ground cools off. Deserts are often cold at night. Do you know what kinds of animals live in such a place? Rabbits, coyotes, mice, insects, snakes, and lizards are just a few.

**Rangeland**

A rangeland is a place where grasses and shrubs grow and where animals are allowed to graze. In Nevada, we have thousands of acres of rangeland where cattle, sheep, horses, and wildlife graze. Much of this land is owned by the federal government. People also hunt, fish, and enjoy outdoor recreation on Nevada’s rangelands. They are a very important ecosystem in Nevada.

**Freshwater**

Rivers, streams, and lakes all belong to the freshwater ecosystem. Many of our large rivers and lakes supply water for drinking, agriculture, and industries in Nevada. Lake Mead is a large reservoir in our state that catches water from snow and rain. A reservoir is a man-made lake used to store water. Are there any reservoirs near your home? Water is a very important resource for our state. We can each do our part to take care of Nevada’s fresh waters.
Caves and Caverns

There are hundreds of natural limestone caves in Nevada. Some are large with odd rock formations, and some were used as shelter for Nevada's earliest people. The bones of many ancient people have been found in our caves. Caves and caverns are very fragile, or easily damaged, ecosystems. Even small changes made by people can place a cave or cavern at risk. All kinds of dark-loving creatures live in caves. Can you think of some? Bats, spiders, salamanders, and centipedes all live in dark places.

Forests

Forests are another important natural ecosystem in Nevada. Many kinds of trees and plants grow in our forests. Animals like chipmunks, owls, mountain lions, and bears, live there too. The Humboldt-Toiyabe forest in our state is nearly 6.5 million acres. It is the largest national forest in the United States outside of Alaska. Nevada also has many state forests where people go to fish, hike, and enjoy nature.

Wetlands

Nevada's wetlands are a small but important part of our state. Many different types of plants and animals get food and freshwater there. More than 100 species, or types, of birds make their nests or stop to rest there every year. Fish, deer, elk, sage grouse, and owl are just some of the wildlife that depend on this ecosystem to survive. In Chapter 1, you read about a special plant called tule that was used by some of Nevada's earliest people. Tule is an example of a plant that grows in our wetlands.

Natural Nevada
Climate and Elevation

Climate is a very important part of a place. It tells us how weather acts over time. Climates in Nevada are different from place to place. That's because our mountains and our lowlands are at very different elevations.

Elevation tells us how high the land rises above sea level. For example, the Sierra Nevada Range rises more than 10,000 feet above sea level. Temperatures and precipitation, or rainfall, change at different elevations. Mountain areas are wetter and cooler than our desert lowlands. In Las Vegas, the summers are very hot. Las Vegas is part of our desert lowlands. The elevation there is less than 2,000 feet above sea level.

Weather Happenings

Nevada's climate is affected by other things besides elevation. Distance from large bodies of water affects our weather patterns too. Tall mountains on both sides of Nevada also play a part. Because our state sits like a bowl between tall mountains, we often experience a pattern called the shadow effect.

The shadow effect begins when winds from the Pacific Ocean blow clouds carrying moist air from west to east. As clouds filled with moisture cross California on their way to Nevada, they come up against the Sierra Nevada. Rising clouds are forced to move up the mountains to get over them. As they reach the top, the clouds cool down making it hard for them to hold their moisture. They begin dropping rain or snow as they travel over the mountains. By the time the clouds reach Nevada, very little moisture is left for Nevada's dry land.

Nevada, Our Home
Activity

Reading Climate Maps

These maps give information about Nevada’s climate. Use the maps to answer the following questions:

1. Which map shows how much rain falls in Nevada?
2. Which map shows how hot it gets in Nevada during the summer?
3. Name two counties in Nevada where 15 or less inches of precipitation fall each year.
4. What is the average temperature in Laughlin during the month of January?
5. What is the average temperature in Ely in the month of July?
6. What part of Nevada gets the most precipitation per year? North, South, East, or West?

Legend (in inches):
- Under 10
- 10 to 20
- 20 to 30
- 30 to 45
- Above 45

Average January Temperatures
- 30° Gerlach
- 42° Winnemucca
- 42° Lovelock
- 40° Incline Village
- 37° Owyhee
- 36° Elko
- 38° Ely
- 43° Pioche
- 47° Hawthorne
- 64° Laughlin
- 57° Las Vegas

Average July Temperatures
- 74° Gerlach
- 84° Winnemucca
- 91° Elko
- 78° Lovelock
- 84° Incline Village
- 88° Carson City
- 87° Ely
- 87° Pioche
- 95° Hawthorne
- 94° Elko
- 105° Las Vegas
- 108° Laughlin

Natural Nevada
Our Plants and Animals

Nevada is home to many different kinds of plant and animal life. Some plants grow in dry areas while others need more water. Plants such as cactus, creosote bush, greasewood, and sagebrush live in the desert regions of Nevada.

Sagebrush, our state flower, grows in practically all parts of Nevada. It can live on very dry land. Its long root system takes advantage of water from deep within the soil. Sagebrush plants are also very strong. They produce yellow flowers in the spring and can sometimes reach over 12 feet tall. Early Native Americans used sagebrush for clothing, medicine, and shelter.

Creatures Large and Small

The animals of Nevada come in many shapes and sizes. Can you name some of our smaller desert animals? There are snakes, tortoises, spiders, lizards, mice, desert squirrels, rabbits, and birds. We also have many larger animals like mountain lions, bears, deer, coyotes, and bighorn sheep. Mountain lions, bears, and deer live mainly in our cooler mountain areas. Many animals were used for food by Nevada’s early native people.

Memory Master

1. Name three of Nevada’s natural resources.
2. How is climate different from weather?
3. Name two ways early Native Americans used sagebrush.
Our Ancient Land

Nevada’s land was formed over millions of years by volcanoes, earthquakes, glaciers, water, and wind. It’s been called the land that was never finished. Rivers flow for miles and disappear into the earth. Mountains push up across the land. Rocks lie scattered as if sprinkled from the sky.

Today, Nevada is a desert and mountain region. But it has not always been that way. Millions of years ago, the area we call Nevada was part of a giant ocean. As time passed, the ocean dried up. Great periods of drought followed. Volcanoes erupted and earthquakes caused mountains to rise. Over time, mountains were eroded, or worn away, by wind and rain. Water covered Nevada once again.

Many animals and sea creatures lived here then. The ichthyosaur swam in warm waters. Horse-like animals, sloths, and mammoths also roamed the land.

As the earth became warmer the waters dried up, leaving only one large lake in the Nevada area. It was called Lake Lahontan. It covered much of the west-central part of Nevada.

Weather patterns continued to change in ancient Nevada. The climate that was once hot and wet, like in tropical areas, later became hot and dry, like the desert we see today. Many prehistoric animals living in the area disappeared when the plants they ate stopped growing. Eventually, Lake Lahontan turned into two smaller lakes. Today, we know these lakes as Pyramid and Walker Lakes.
**Shaking Things Up**

Let's see how erosion really works. Try this experiment. Record your findings in as much detail as possible.

Put a few small limestone rocks about the same size into three plastic bottles. Cover them with water and cap the bottles. Put a few rocks aside to look at later.

Shake one bottle for 3 minutes. Shake the second bottle for 5 minutes. Shake the third bottle for 10 minutes.

Compare the rocks in the three bottles with each other. What has happened to them? Compare the rocks from the bottles with the rocks you set aside.

What kinds of things have you learned from this experiment? Do you think water has had the same effect on the land in Nevada?

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**What do you think?**

What kinds of landforms are near home? If you had to rename them using a landform, what would you name it?

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**A Land of Change**

Because much of Nevada is without plant life, it's easy to see how nature has affected the land. Our state has had many volcanoes and earthquakes. Some scientists study the movement of the earth's crust. They call this study **plate tectonics**.

The earth's crust is split into many sections called plates. Each plate is many miles thick and millions of miles wide. Two plates affect Nevada and the states nearby. The North American and Pacific plates come together in several places in our region. Scientists call the place they touch a **fault line**. As the plates rub against each other, it puts great pressure on the earth's crust. This underground pressure can lead to earthquakes and volcanic activity.

Huge forces of nature have shaped Nevada, leaving many strange and interesting **landforms**. A landform is a natural feature of the earth. Mountains, valleys, hills, and plateaus are examples of natural landforms. Lehman Caves, Cathedral Gorge, and the Valley of Fire are some of Nevada's most interesting landforms. Rivers and lakes are sometimes called landforms. They help shape the land too.

Nevada, Our Home
Nevada Today

The histories and stories of a place are almost always connected to its land. Nevada's land is part of what makes our state a great place to live. People live in many different parts of our state. Sometimes these places are called *regions*.

Regions are places that are alike in some way. A region can be as large as a continent or as small as your neighborhood. Regions have their own unique natural and human features. Unique means to be different in some way. Can you think of some features that make your town or city unique?

Natural Nevada
The Great Basin

Nevada is part of a very large land region called the Great Basin, or the Basin and Range region. It covers more than half of our state and parts of Utah, Oregon, Idaho, Wyoming, and California. The region was given its name by explorer John C. Fremont. He named it that because of its very large bowl shape.

Sometimes the Great Basin is called a cold desert. It's the only one of its kind in the United States. In the winter, temperatures drop and the ground is often dusted with snow. Summers are mostly hot, dry, and dusty. Sheep and cattle graze across the sagebrush-covered land. Ghost towns, old mines, and mountain ranges also dot the region.

One of the world's oldest living trees grows in the Great Basin. It's also one of our state symbols. Can you guess which one? If you guessed the bristlecone pine, you guessed right!

Sagebrush, saltbush, and many types of grasses grow here too. Riverbeds of the Great Basin are often lined with cottonwood trees. During the spring, beautiful wildflowers, like Indian paintbrush, lupines, sego lilies, and sunflowers, cover the ground. Lake Tahoe, Nevada's second largest lake is part of this region. Many farmers, vacationers, and industries draw water from the lake.
Animals of the Great Basin have had to adapt to a harsh climate. You might see pronghorn, bobcat, coyote, badger, and fox. Miles of open land are home to birds, ducks, and geese. Rabbits, squirrels, rats, mice, and the Great Basin rattlesnake are also at home here.

Reno and Carson City are just two of the larger cities in the Great Basin region. Ely, Elko, Fallon, Wells, Lovelock, and Virginia City are some of the smaller towns that spread across our state.

People from many different ethnic groups live in our towns and cities. Ethnic groups are people of the same race or heritage. Some of them are immigrants. An immigrant is a person who lives in a country other than where he or she was born.

To keep their traditions alive, immigrants celebrate their heritage in a number of ways. People of all cultures look forward to the Basque festivals held each year in our state.

People living in the Great Basin region work in factories or mines. Others work as ranchers or farmers. Many people work in state parks, hotels, restaurants, or other places visitors, or tourists, like to go. Providing services for tourists is big business all over our state.
Near the Nevada-Idaho border, a small corner of our state lies in a region called the Columbia Plateau. Some of the land in this corner of Nevada looks very different. Rivers and streams run through deep rock canyons. These layers of rock were left behind by ancient volcanoes.

Only a few small towns are found in this region. Most of the land is wide-open prairie. Like the Great Basin region, cattle and sheep graze the grasslands. Hunting, fishing, and other outdoor activities are an important part of life.

Here, rivers and streams receive more precipitation than in other parts of our state. The increased moisture makes it the perfect place for aspen and juniper trees to grow.
The Sierra Nevada region of western Nevada is our state’s most tree-rich region. The smell of pines and deep green forests fills the air. During summer months, people like to hike, camp, fish, and ride horses in the area. Winter brings skiers, young and old, to the snow-covered slopes. Beautiful vacation homes are built among the trees, and area casinos are alive with tourists.

The people who live and work here find jobs in casinos, ski resorts, and in area shops. Some work in construction, real estate, or in banks. Jobs like these are part of Nevada’s large service industry. Nevada workers serve the needs of visitors and people all over our state.

"Three months of camp life on Lake Tahoe would restore an Egyptian mummy to his pristine vigor, and give him an appetite like an alligator."

—Mark Twain
Living and Learning From the Land

Sometimes people must learn to adapt to new ways of living. To adapt means to change. Sometimes people have to change the way they live when they move to the desert. They may have to eat different foods or wear different clothes.

Nevada’s early native peoples had to adapt to living here. They had very little water and a limited food supply. Hot summers, cold winters, high winds, and blowing dust made life very hard. There were no buffalo and few deer to hunt.

Early native peoples lived on small animals, like rabbits. They learned to eat native plants. They wove mesquite bushes and tree limbs together to make their homes. Native peoples learned how to become part of the land. They didn’t do much to try to change their surroundings, or environment.

Improving Nevada

Today, it is much easier to live in Nevada. Modern tools help make our environment more comfortable. Air conditioners and refrigerators help us stay cool. Highways, railroads, cars, and planes help us travel faster and protect us from bad weather. Wood for homes and other things now comes to our state from other places. Most of these changes are good, but some can harm our environment.

Taking Care of the Land

For many years, we didn’t know we needed to take care of our environment. Now we know that resources will not last if we don’t use them carefully. Nevada will still be a good place to live 20 years from now, if we take care of land, air, and water today. Many people study how to protect these resources. Some groups have set aside special places for endangered animals. Some have created parks where rare plants can grow. Other people study grasslands and forests. Lawmakers pass laws to protect our lakes and rivers from pollution.

Everyone can help. You can put trash in a garbage can. You can recycle paper, plastic, and tin cans. You can save energy by turning off your lights or TV when you aren’t using them. You can conserve water. Everyone can help care of Nevada.

These students are learning how to test water quality and how to reduce erosion.
On the Move

People and goods have always moved from place to place or region to region. Movement is when ideas, goods, or people go from one place to another. Movement connects people and places to each other.

People first came to Nevada in search of gold and silver in our deserts and mountains. They brought with them their own customs, or ways of living, thinking, and acting.

People who moved out of Nevada took ideas and money with them. Cities like San Francisco, California were partly built with money made in Nevada mines. Mining methods used in Nevada are also used in mines around the world. People still come from other places to work in our mines or to learn from them.

Nevada’s gold and silver are shipped to many places in the world. People, ideas, and resources are always moving in and out of our state.

What do you think?

How are goods moved today? How are ideas moved today? What do you think is helpful or harmful about moving goods and ideas?

Memory Master

1. Which lakes in Nevada are all that remains of Lake Lahontan?
2. What are scientists studying when they study plate tectonics?
3. Who named our state’s largest region?

Natural Nevada
Consider Character

On page 42 of this chapter, you’ve read about many ways to show respect for Nevada. Now let’s look at how some of the students in our state are learning about the importance of caring for Nevada’s water resources.

Each September, thousands of students across the United States participate in a national day of water education. It’s called Make a Splash with Project WET. About 200 students were involved in Nevada’s 2005 Make a Splash Festival. Students learned about different water environments through hands-on activities. They learned about conservation and water quality. They talked about underground water, or aquifers, and about protecting Nevada’s wetlands. Take a look at a few of the activities students from West End Elementary School in Fallon participated in.

Technology Tie-In

How many different jobs can you think of where people study the characteristics of regions? Who works to gather information about weather, cities, small towns, land and population? What technology tools do these people use to gather information? How is this information useful to our state?

Nevada, Our Home
As you read *Nevada, Our Home*, you will learn many new things about our state. You might be surprised, though, to find out how much you already know. You know that Nevada is part of a region called the West. In the West there are big cities, small towns, and many farms and ranches. We get rain, snow, wind, and lots of sunny days.

Some people live and work in the city. They live in houses and apartment buildings. Some people live on farms with open fields all around them. Make a list of other things you know about living in the West.

Now pick another region of the United States you might want to explore. Do you know the names of these regions? The map below will help you locate them. Once you choose which region you want to explore, make a list of at least three things in that region that are different from the West. Then make a poster or brochure that shows what types of land, plants, and animals are part of this region. Include other interesting things too, like what your region’s weather is like or the kinds of food people eat. Think about working together with someone else from your class who is interested in learning about the same region. When you are finished, share what you learned with your class.

![Regions of the United States](image-url)