

## Section 4 The Mountains Region

### INTRODUCE

#### Outline

- A. The Blue Ridge
- B. The Appalachians
- C. Mountain Streams and Rocks
- D. The Mountain Economy

#### Materials

Textbook, pages 28-36

#### Blackline Masters

North Carolina's  
Geographic Regions, page 5  
North Carolina's Major Rivers,  
Lakes, and Sounds, page 6  
Key Terms: Chapter 1, page 7  
North Carolina's Geographic  
Regions: Summarizing  
Main Points, page 8

#### Spanish Workbook

Regiones geográficas  
de Carolina del Norte  
Principales ríos, lagos y  
rías de Carolina del Norte  
Términos clave: Capítulo 1

#### Teacher CD-ROM

#### Transparencies

[www.mystatehistory.com](http://www.mystatehistory.com)

Online textbook

### Getting Started

The Mountains region was historically separated from the rest of the state because of its geography. Ask students to consider what impact that separation had on the development of the people and culture of this region.

### TEACH

#### Character Education

As students examine the Mountains region, have them discuss ways in which this area may become endangered. List both citizen and government responsibilities that we need in order to protect this region.

## Section 4

# The Mountains Region

**Opposite page, above:** The Blue Ridge Parkway, begun during the New Deal era of the 1930s, takes tourists to most of the famous sites in the Mountains region. It has a 45 mile-per-hour speed limit.

**Below:** The views of the nearby mountains from parkway overlooks can be spectacular.

#### As you read, look for:

- the features of the Mountains region
- vocabulary terms **elevation**, **bald**, **cove**



Travelers from the east see North Carolina's mountains long before they cross into them. The mountains begin at the Blue Ridge, which sometimes towers from than 1,000 feet over the nearby Piedmont hills.



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### Objectives

There are no specific objectives for this section.

### Economics Activity

As they read this section, have individuals or groups make a mobile for the Mountains region of North Carolina with pictures of major crops, minerals, other resources, and top industries or businesses. Display the mobiles as you cover the chapter.

The Blue Ridge forms the eastern boundary of the Appalachian Mountains, some of the oldest in the world. Running along the ridge top is the Blue Ridge Parkway, a national highway that has some of the best views in the United States. The Blue Ridge divides the Piedmont from the Mountains region in the state. To the east are the foothills, a series of progressively higher hills, and to the west are different ranges of mountains that make up the western third of the state. The Continental Divide runs along the Blue Ridge. Streams flowing down its eastern slopes eventually became part of the Atlantic Ocean. Streams on the west side send water into the tributaries of the Mississippi River.

### The Blue Ridge

The Blue Ridge gets its name from the fact that, at a distance, the mist evaporating off its slopes shimmers an aqua blue. The Blue Ridge runs from New Jersey into the Deep South. In North Carolina's western area, the Blue Ridge curves westward before nipping the very western edge of South Carolina.

Like the barrier islands, the Blue Ridge is really just one long landform, with peaks of various heights and gaps that, like inlets, both allowed and discouraged travel back and forth. For years, places west of the Blue Ridge were even more isolated than the barrier islands. Early settlers to the state had to cross lower points of elevation like Deep Gap



### Teacher Notes

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### Technology Activity

Using the Internet, have students find the official web site of the Blue Ridge Parkway. They should make a list of five places on the parkway that they would like to visit and give reasons why they are interested in these particular places.

### Economics Activity

What is the economic impact of the Blue Ridge Parkway on the state of North Carolina? Students should use hard data from various sources (web sites, Parkway brochures, etc.) to support their answers.

### Multidisciplinary Activity

**Science:** What scientific reason can students think of that would explain why the Blue Ridge mist appears to be aqua blue? (If students cannot think of a specific reason, ask them for their own ideas.)

### Using Photographs and Illustrations

Based on the photographs on this page, ask students to explain what kind of difficulties early settlers to the Blue Ridge might have faced.

### Transparencies

Transparency 9, North Carolina's Mountains, provides an overview of the higher elevations of the state. This might be especially useful for those students who live in the eastern part of the state. You may want to make copies to hand out to students.

## Writing Activity

Tell students to imagine that they are one of the workers grading and tunneling through the Blue Ridge at Swannanoa Gap in the 1870s. Have them write a journal entry describing the dangers they faced in their work and the conditions in which they lived. Why would they choose to have this type of job?

## Critical Thinking

Ask students why there are different types of trees in different geographic regions (soil needed, rainfall, temperatures, etc.).

## Writing Activity

The text explains how the Smoky Mountains got their name. An old Cherokee legend tells another version of the story. Have students make up their own story about how these mountains became known as the Smokies. Encourage creativity and originality.

## Differentiated Instruction— For English Language Learners

Have students “interview” each other, pretending to be early settlers of the Appalachian Mountains. Have them ask basic questions such as if they like their home, what is hard for them, etc. Then have them share their answers with the class.

in Watauga County (to the east of the town of Boone today) to venture into the mountains.

Until the building of railroads in the late 1800s, travel over the Blue Ridge was expensive and laborious. One of the greatest feats in state history was the long effort in the 1870s to grade and tunnel through the Blue Ridge at Swannanoa Gap. More than 100 men died in the effort. The long wind of Interstate 40 up and down the Blue Ridge from Old Fort to Black Mountain parallels that route.

## The Appalachians

The Appalachian range runs from New York to Alabama but spreads out the most and has its highest peaks in North Carolina. Forty-three mountaintops in the state are more than 6,000 feet above sea level. The highest **elevation** (height above sea level) east of the Rocky Mountains is Mt. Mitchell at 6,684 feet, although a half dozen other peaks are just about as tall.

There are more than a dozen different mountain ranges within North Carolina. Among the more notable are the Black Mountains, located just to the west of the Blue Ridge. The Black Mountains get their name from the dark shadows the mountains cast when summer thunderstorms threaten. Mt. Mitchell is the highest point of the Black Mountains.

Even more notable are the world-famous Great Smoky Mountains. They get their name from the evaporation of resin-filled dew off the needles of spruce and fir trees. When the mist rises, the resin makes

**Below:** This view from Craggy Gardens on the Blue Ridge Parkway shows the dark shadows on the mountainsides that gave the Black Mountains their name.



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the mist look like smoke. The Smokies have one of the greatest variety of plants found anywhere in the world outside of the rain forest. More than four thousand different species have been identified. Two of the highest mountains in the state, Clingman's Dome and Mt. Guyot, are located in the Smokies.

South of the Smokies are the Balsams, home to a large number of the most mysterious places in the mountains, the balds. **Balds** are places, usually above 6,000 feet in elevation, where few trees ever grow. The ones that do take root never rise far above the ground. The bald habitat includes many of the flowers and shrubs found throughout the mountains, including the rhododendron and the mountain laurel. No one has ever explained why trees fail to grow on the balds. Some scientists believe it has something to do with the rocky soil. Others say the cold winds keep the plants from thriving. North Carolinians once believed that the Cherokee kept livestock on the mountain tops, which in turn kept plants from growing. But the Cherokee are long gone from parts of the mountains, and the balds have stayed the same. One of the best-known balds is Wayah Bald, just off the Blue Ridge Parkway. *Wayah* is a Cherokee word for "wolf."

### Mountain Streams and Rocks

The Mountains, like the rest of the state, has interesting waterways. Where rivers on the Coastal Plain run east, and the Piedmont rivers turn south, mountain rivers run north and west. The New River starts just west of the Blue Ridge and flows straight north out of the northwestern corner of the state. Also flowing north is the French Broad River, which starts in the Balsams and meanders its way across a broad valley between

**Above:** The bluish haze that gives the Great Smoky Mountains their name can be seen from the Blue Ridge Parkway.

### Did You Know?

**Geologists believe the New River is actually very old; in fact, it may be the oldest river in the United States.**

## Research Activity

The text states that more than 4,000 different species of plants have been identified in the Smoky Mountains. Have students conduct research, using sources of their choice, to discover some of these types of plants. Have them prepare a list of 20 plants, along with a brief description or fact about each, and prepare their results on a poster to display in the classroom.

## Class Discussion

Why do students think that very few trees grow on the balds? Write down all the students' ideas and talk about which one is the most likely reason for this phenomenon.

## Multidisciplinary Activity

**Art:** Tell students to choose one of the mountain ranges described in this section and create an artistic representation of it. This can be done using paint, modeling clay, crayons or markers, etc. They should pay particular attention to including the details mentioned in the text (e.g., the Blue Ridge Parkway, balds, and vegetation).

## Writing Activity

Have students choose one animal, flower, and tree that they particularly like and that can be found in North Carolina. Write a paragraph about each, giving a description and telling what it is that they like about it.

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## Using Photographs and Illustrations

Elisha Mitchell was a New Englander, a descendant of the Puritans who came to the New World in the 1600s. He was educated at Yale University in his native Connecticut.

One of Mitchell's projects in Chapel Hill remains very visible into the twenty-first century: He directed the construction of the famous stone walls—a rarity in North Carolina, but common in New England—which distinguish the University campus.

## Multidisciplinary Activities

**Art:** Have students draw a comic strip showing the steps Dr. Mitchell took to determine the exact height of Mt. Mitchell.

**Science:** Using what they know about the scientific method, have students show the steps Dr. Mitchell took to prove his hypothesis that Mt. Mitchell was the highest mountain east of the Mississippi River.

## Research Activity

Tell students to select one of North Carolina's many state parks or historic sites to research. They should create a brochure or web site that encourages tourists to visit the park or site they've selected.

## Tar Heel Trivia

Whiteside Mountain near Highlands (pop. 909) has the tallest sheer vertical cliffs in the eastern United States, at 400 feet to 750 feet.

# CAROLINA CELEBRITIES

## Dr. Elisha Mitchell

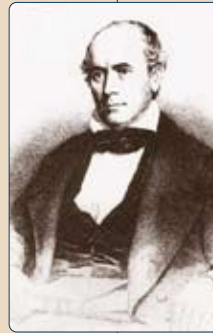
**Most North Carolinians know that the highest point in the state, and the highest in the eastern half of the United States, is Mt. Mitchell. Some state residents remember that the mountain is 6,684 feet above sea level. Often, North Carolinians do not know just how hard it was to figure out that number, and how Elisha Mitchell, for whom the mountain was named, literally gave his life in the effort.**

In 1817, Mitchell came to the University in Chapel Hill to be its mathematics and natural philosophy professor. At that time, "natural philosophy" meant anything connected to science, so Mitchell had to teach a wide range of subjects. He also conducted religious services on Sundays (he was also a Presbyterian minister) and during the week kept the books and groomed the grounds of the University.

Mitchell also worked to connect the two sections of the state—east and west. In 1846, Mitchell surveyed a route that would connect Raleigh to Asheville. Although the road was not immediately built, North Carolinians today enjoy its more modern version: Interstate 40.

While in the west in the 1840s, Mitchell put his math and geology skills to work studying the Black Mountains. He soon concluded that the highest part, then known as "the Black Mountain," was higher than Mt. Washington in New Hampshire. Three times he made measurements with surveying instruments and calculations by hand. He believed the peak was 6,708 feet above sea level.

Not every North Carolinian believed Mitchell. Residents around Asheville believed that the Great Smokies might be higher. Like a good scientist, Mitchell went back to the Black Mountain to recheck his results. In June 1857, he was alone on a lower slope of a mountain and was caught in a



thunderstorm. His companions found him drowned in a pool at the bottom of a waterfall. Apparently, he had slipped on wet rocks and fallen to his death.

Professor Mitchell was buried at the top of Black Mountain in 1858. Soon after, North Carolinians began to call the peak "Mt. Mitchell." In 1882, government scientists used better instruments to prove that Mt. Mitchell was the highest peak in the eastern United States. In the early 1900s, North Carolina made the mountain a state park. It also remains a place where education never ends, as Professor Mitchell would have liked. Scientists are currently studying its trees to learn the effects of acid rain on the environment.



**Top: Dr. Elisha Mitchell. Above: These dead trees on the peak of Mt. Mitchell may be due to beetles. Opposite page: Oscar M. Lewis's lithograph of the falls where Dr. Mitchell fell to his death shows his ghost standing nearby.**

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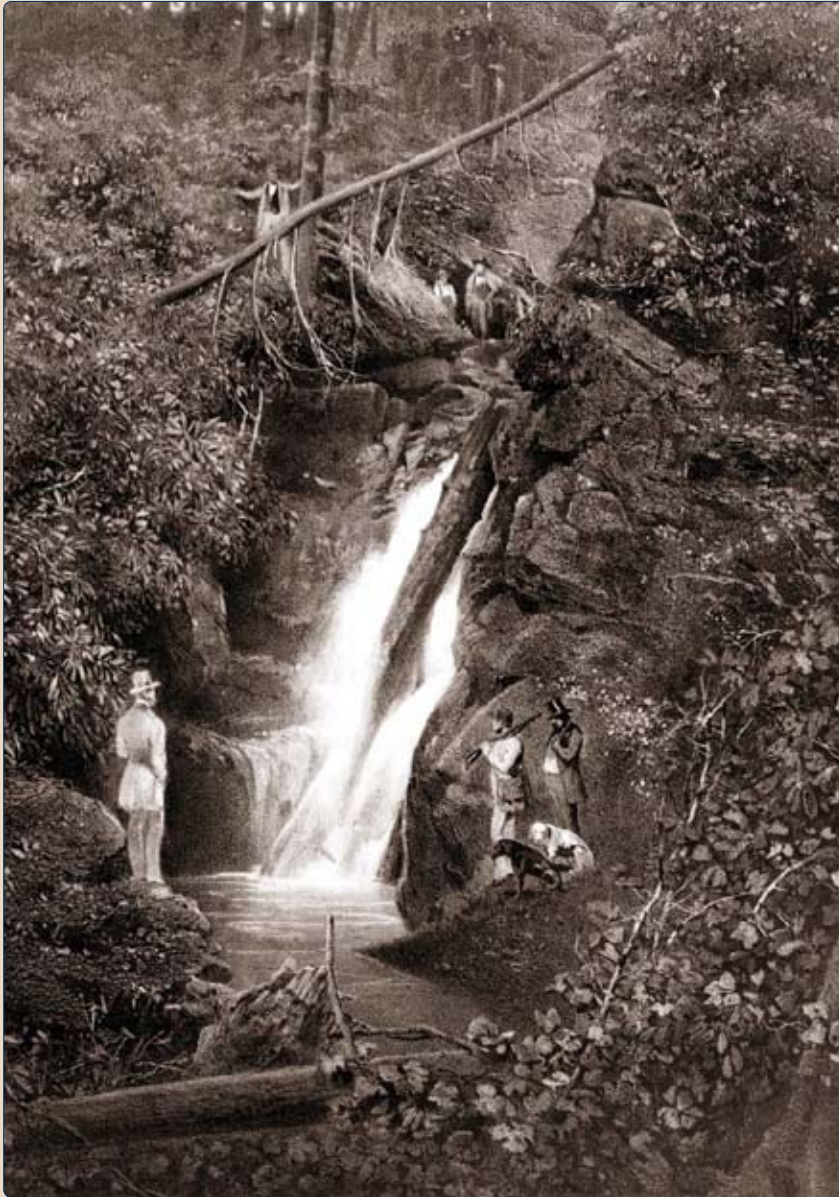
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## Using Photographs and Illustrations

Using the picture for ideas, discuss why measuring the exact height of Mt. Mitchell was so difficult in the early 1800s.

## Addressing Multiple Learning Styles

Using facts from each of the Chapter 1 Special Feature topics and using each of the topics as a separate category, have the class play Jeopardy for bonus points on their upcoming chapter test.

## Writing Activity

Building vacation homes strengthens an area's economy by aiding the construction industry, home decorators, and furnishing suppliers. Have students design a brochure to entice North Carolinians who are planning to build a retirement home or who are looking for a good site to build a second home to move to the Mountains region of North Carolina. Be sure to identify all of the scenic appeals of the area such as major lakes, hiking trails, the Blue Ridge Parkway, and the mountains.

## Technology Activity

People who live in the Appalachian Mountain chain have, over the years, been known as part of Appalachia. Tell students to go to [www.foxfire.org/](http://www.foxfire.org/), select one item of interest, and share their findings with classmates. For example, they might choose a folk remedy for people who lived miles from the nearest doctor, old fashioned recipes for favorite mountain dishes, popular folk songs or musical instruments. Why is such a program so essential?

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## Cooperative Learning

Have students pretend that they are a group of Cherokee who are trying to decide where to build a village. Ask them to come to a consensus to build a village along a tributary of the Tennessee River in western North Carolina.

## Geography Activity

Have student teams make and label an elevation map that includes each geographic region. They can use their own choice of colors. To make dough for the map, use  $\frac{3}{4}$  cup white sugar,  $\frac{3}{4}$  cup softened butter, 2 eggs,  $2\frac{1}{2}$  cups flour, 2 teaspoons baking power, and 1 teaspoon vanilla. Chill the dough, then form and shape to show elevation. Bake in a 350-degree oven on a greased cookie sheet for 12-14 minutes. Cool and add land and water features. (You can use boxed or refrigerated sugar cookie mix instead.)

## Critical Thinking

Describe how the industry, economy, and geography of western North Carolina would be different if manmade lakes had not been built.

## Multidisciplinary Activity

**Art:** Have students choose three things they enjoy doing such as sports, hobbies, or music. Using either the Internet, brochures, information from friends, etc., tell students to make a poster depicting those three things along with their choice for the best site in North Carolina to enjoy doing them.



**Above:** The Oconaluftee River flows through the Great Smoky Mountains National Park. **Right:** Beautiful Lake Lure is ringed by mountains, providing a favorite destination for many.



the Black and Balsam Mountains. Asheville, the largest city in the Mountains, is located in this basin. The tributaries of the Tennessee River, in particular the Little Tennessee and the Nantahala, form a river system that flows all the way to the Mississippi River. The long-time inhabitants of the mountains, the Cherokee, built most of their villages along the Tennessee River tributaries.

More than one hundred lakes are to be found in the Mountains, but almost all of them are manmade. Lake Lure, constructed in the 1920s, is considered to be one of the most beautiful lakes in the world. It has been the setting for a number of motion pictures. Fontana Lake is one of the deepest lakes in America, having been built in steep mountain valleys during the 1930s in an effort to produce cheaper electric power. Fontana has the highest dam in the eastern United States.

The Mountains region is also full of scenic wonders, natural formations that are interesting just to see. Blowing Rock is a cliff so high above the nearby hills that updrafts of wind sometimes make rain and

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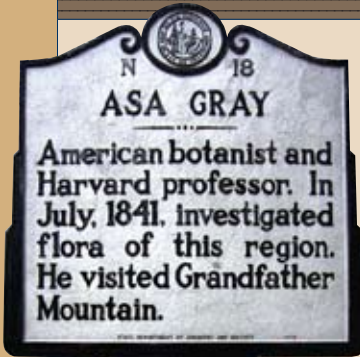
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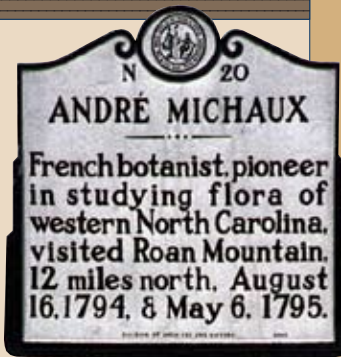
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# HISTORY BY THE HIGHWAY

## Asa Gray and Andre Michaux



From early days, North Carolina has been renowned for the variety of its plants. Some of the pioneers of botany have visited the state, particularly the mountains in the Grandfather Mountain area. Andre Michaux came to locate plants to take back to his native France as proof of the greatness of the new United States. Asa Gray, the first Harvard College botanist, followed in his footsteps a half century later.



Below: Grandfather Mountain, showing a “face” that gave it its name.



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### Research Activity

Divide students into two groups. Have one group research and prepare a presentation on Asa Gray, and the other group on Andre Michaux. Students may present the results of their research in written, oral, or display (poster, etc.) form.

### Multidisciplinary Activity

**Music:** Have students research and find a song with *North Carolina* or *Carolina* in the title with school-appropriate lyrics. Have students write the title of the song they found in descriptive lettering and display the song titles around the room with musical notes.

### Research Activity

There is a History by the Highway feature in every chapter. Take some time to explain the historical marker program. Have students identify the historical markers in your county. You may also want students to research and suggest a location in your area or county that would make a good addition to the program.

### Using Photographs and Illustrations

Ask students to look at the photograph to see if they can discern how the shape gave the mountain its name.

### Tar Heel Trivia

Transylvania County is known as the “Land of the Waterfalls.” It features Sliding Rock, a 150-foot natural waterslide gushing 11,000 gallons of 50- to 60-degree water every minute.

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## Critical Thinking

Ask students to think about the region of the state in which they would most like to live. Have them list five reasons for their choice.

## Addressing Multiple Learning Styles

Have students make a pennant of their favorite geographic region including the name, visual depiction of the physical land area, and at least two additional facts such as crops, cities, famous festivals, historic sites, etc.

## Writing Activity

Have students choose one region and write a brochure about it entitled, "North Carolina Has Something for Everyone." They should use drawings or color pictures in the brochure to accompany the text.

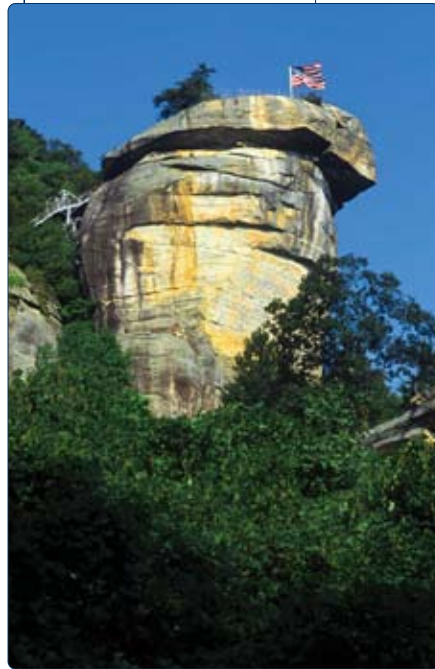
## Lesson Closure

Have all students stand in no special order. Each should give one thing they learned about the state's geographic regions. If a response is correct, the student may sit after calling on another student. No two responses can be the same. The activity takes about 9-12 minutes but is a good closure review and allows some movement after sitting all class period.

## ASSESS

### It's Your Turn

1. Streams that begin on the east side eventually flow into the Atlantic Ocean; streams that rise on its west side eventually flow into the Mississippi River.
2. Mt. Mitchell at 6,684 feet
3. Places, usually above 6,000 feet, where few trees grow



**Above:** Chimney Rock sticks out over the Hickory Nut Gorge south of Asheville. It has recently become a state-owned tourist site.

snow reverse course. Chimney Rock, a towering granite spire above Hickory Nut Gorge in the southern mountains, has been a great attraction for almost a century. Grandfather Mountain, in the northwestern corner, has habitats that attract thousands of tourists each year. Sometimes the natural wonders are helped by humans. There is an elevator deep inside Chimney Rock to help tourists get to the top, and Grandfather Mountain is noted for its "mile-high swinging bridge" that connects its twin peaks. The Nantahala River Gorge features some of the best rafting anywhere, which is made possible by the daily discharge of water from a power dam upstream.

## The Mountains Economy

The Mountains region historically was never as populated or developed as the other regions of the state. The first settlers generally lived in **coves**, valleys where streams cut out swathes wide enough for farming. In coves like Valle Crucis, west of the town of Boone, little communities had schools, churches, stores, and mills. Yet, it was hard to get from one cove to the next, and even harder to get goods in and out of the mountains. Early on, farmers grazed livestock on lush mountain grass and then drove the cattle to coastal markets each fall. Because the mountains had a variety of plants, mountain families made money selling "roots, barks,

berries, and herbs," plants with medicinal properties. More than two thousand "yarbs," as they were called, could be found. Ginseng, used as a spring tonic in China, was the best seller.

In more recent times, tourism has become the largest part of the Mountains economy, with an increasing part given to people who actually retire to the region. Both retirement and vacation homes seem to be sprouting up everywhere. The most distinctive recent economic development has been the Christmas tree industry. This has been concentrated in Ashe and adjoining counties in the northwest corner of the state. The leading seller has been Fraser firs. Some tree farms even allow customers to cut their own and take them directly home during the holidays.

### It's Your Turn

1. What is the significance of the Continental Divide?
2. What is the highest point in the state?
3. What are balds?

## Geography Activity

**Have each student draw a map of North Carolina, showing the natural regions, the city in which he or she lives, the capital city, the states that border North Carolina, and the region in which each of the following is found: the barrier islands, the highest peaks of the state, and the fall line.**

## Blackline Masters

**Use Blackline Masters North Carolina's Geographic Regions (page 5) and Key Terms: Chapter 1 (page 7) as reviews of the first four sections of the chapter.**