

OKLAHOMA!



Land of Opportunity

Chapter 1:

Where in the World is Oklahoma?

STUDY PRESENTATION





Section 1: What is Geography?

Section 2: Geographic Regions

Section 3: Oklahoma's Natural Resources

Section 4: Oklahoma's Climate

Section 1: What is Geography?

➤ Essential Question:

- How does geographic location affect our state?



Section 1: What is Geography?

- What terms do I need to know?
 - geography
 - latitude
 - longitude



Introduction

- geography: the study of Earth's physical features and how people interact with them
- all life affected by geography, and geography is affected by life
- helps us learn about ourselves, history, relationships, and the globe



Location

- Oklahoma is located between $94^{\circ}29'$ and 103° W longitude.
- It lies between $33^{\circ}39'$ and 37° N latitude.
- The 1829 Missouri Compromise set $36^{\circ}30'$ N latitude as the boundary where slavery could exist and included the territory that became our state.





Oklahoma Geographic Statistics

Area (mi ²)	About 70,000
Widest (miles)	464
Longest (miles)	320
Rank (U.S. states)	18
# of Counties	77
Relative Location	about halfway between Los Angeles, CA and Washington, DC



Section 2: Geographic Regions

- Essential Question:
 - How do Oklahoma's geographic regions differ?



Section 2: Geographic Regions

- What terms do I need to know?
 - erosion
 - basin
 - topography
 - mesa
 - butte
 - ecosystem
 - plateau



Section 2: Geographic Regions



High Plains

- Panhandle and land along part of the western border
- Black Mesa in Cimarron County formed by prehistoric volcano eruption in southeastern Colorado
- Antelope Hills rise in gypsum peaks south of the Canadian River.
- Region favored by stargazers due to lack of electric lights
- Wildlife: quail, dove, duck, wild turkey, pheasant, deer, elk, antelope, and prairie dog
- Lake Optima and Beaver Dunes State Park: great recreational opportunities
- Guymon: largest city in the region
- Major economic producers: cattle, hog feed lots, farming, ranching, petroleum & natural gas



This marker in Black Mesa State Park and Nature Preserve marks the state's highest point.



Gypsum Hills

- The hills cover a large area from the Kansas border to the southwestern corner of the state.
- Features are a result of the evaporation of ancient seas.
- The area named for the white gypsum buttes.
- Springs and caves found in the region include the Alabaster Caverns and Selman Bat Cave.
- Rich soils produce winter wheat, hay, alfalfa, soybeans, & cotton.
- Cattle are the primary livestock.
- Oil and natural gas are in many areas.



Red Bed Plains

- Red-orange shale and clay soil partly formed from ancient shallow seas; salt deposits were left when the seas evaporated.
- State rock: the *rose rock* is found near Noble.
- [The Great Salt Plains National Wildlife Refuge](#): only place in the world one can dig for hourglass selenite crystals; a major resting site for thousands of migratory birds
- [Roman Nose State Park](#): once a Cheyenne campground
- [Little Sahara State Park](#): over 1,600 acres of sand dunes ranging from 25 – 75 feet high
- Fertile soil ideal for growing wheat, hay, peanuts, and cotton – grasslands for cattle and horses
- Oil and natural gas wells dot the countryside.
- Oklahoma City: state's largest city (532,517) [Regions Map](#)



Wichita Mountains

- 500 million years ago mountains began to form from ancient lava flows.
- Peaks are now eroded by climatic forces.
- Huge granite boulders are popular for rock climbing.
- The [Wichita Mountains Wildlife Refuge](#) was set aside from the Comanche-Kiowa-Apache Reservation in 1901.
- The area around the base of the mountains is a mixed grass prairie.
- Longhorn cattle, elk, deer, wild turkey, and numerous smaller animals and birds
- The town of [Medicine Park](#) is a planned resort of homes and shops made of granite cobblestones.
- Meers began as a mining camp resulting from stories of gold.



A large granite “knob” in the Wichita Mountains is shaped by forces of erosion.



Sandstone Hills

- The Tallgrass Prairie Preserve: north of Pawhuska in the Flint Hills, one of North America's former major ecosystems
- Sandstone and shale are main rocks with sandstone hills up to 400 feet
- Buffalo graze on tall bluestem, Indian grass, and switchgrass
- Oilman, Frank Phillips - responsible for Woolaroc Wildlife Preserve and Museum
- Poultry and egg farms, ranching, oil, and natural gas are important industries.
- 1920s: the Osage Indians among the wealthiest people in the country due to the discovery of oil
- Coal mining spurred growth in the McAlester area.
- Part of metropolitan Tulsa is in the region.

[Regions Map](#)



Arbuckle Mountains

- The range runs east to west and is part of a very old mountain system.
- Exposed granite in Murray County is 1.4 billion years old.
- The region is composed of limestone, dolomite, sandstone, and shale.
- Mineral resources are limestone, dolomite, glass sand, granite, sand and gravel, shale, iron ore, lead, zinc, tar sands, oil and gas.
- Initial Point Mark: established in 1870 to divide most of the state into townships and sections.
- [The Chickasaw National Recreation Area](#) is the oldest park in Oklahoma.
- Turner Falls Park has two natural swimming pools and a 77-foot waterfall.



Turner Falls is in south-central Oklahoma.



Prairie Plains

- The prairie plains contain many hard sandstone hills and ridges.
- Rich soil grows everything from strawberries to tomatoes.
- Water is a major feature of region.
- Eufaula and Oologah are important lakes.
- The Oklahoma Aquarium is in Jenks.
- Port of Catoosa: international shipping port and the most inland, ice-free port in the United States.
- The McClellan-Kerr Arkansas River Navigation System covers 445 river miles.
- The region includes Tulsa, the state's second largest city.
- Major coal areas and most is surface mined.



The Eufaula Dam was constructed by the U.S. Army Corps of Engineers.

Ozark Plateau

- The plateau is part of the Ozark Mountain chain of Missouri and Arkansas.
- Much of the region is heavily wooded with oak, hickory, and elm.
- Many fruits, berries, and vegetables are grown in area.
- Lead and zinc were mined in past.
- The Illinois and Grand are two main rivers.
- The Pensacola Dam created the Grand Lake O' the Cherokees.



Ouachita Mountains

- The region has towering pine and hardwood trees and is some of the roughest land in the state.
- Ouachita-Ozark was once a part of a mighty mountain range from the Appalachian Highlands to southwest Texas.
- Rich Mountain is the highest peak in the region at 2,666 feet.
- The mountains once provided safety for Indian people and hideouts for outlaws.
- Very popular parks in the region: Beavers Bend, Robbers Cave, Spiro Mounds, Heavener Runestone, Talimena, Clayton Lake & Lake Wister.
- Talimena Drive is known for its fall foliage.
- Grazing lands, small farms, and lumbering are important to the region's economy.



Red River Plains

- The Red River Plains is a southeastern region that lies along the Red River and has rich, sandy soils and a long growing season.
- The area was ideal for melons, squash, corn, and pumpkins used by early Indians.
- Red River dams provide better flood control and more area available for farming.
- The eastern part of region includes cypress swamps and forests.
- Lakes include the Texoma, Murray, and Hugo.
- “Great Raft”: 150-mile jam of logs & debris along the Red River in early 1800s
- Forts Towson, Washita, and Arbuckle became centers for Choctaw and Chickasaw cotton plantations.



Section 3: Oklahoma's Natural Resources

- Essential Question:
 - How do Oklahomans make use of the state's natural resources?



Section 3: Oklahoma's Natural Resources

- What terms do I need to know?
 - natural resources
 - irrigation
 - drought
 - fossil fuels
 - wildcatter
 - aquifer



Soils

- One of state's important natural resources
- Soil: composed of organic matter, loose rock material, water, and air
- Mollisols: largest soil group of Oklahoma
- Port silt loam soil: named as one of Oklahoma's state symbols
- Good for growing alfalfa, grains, cotton and other sown crops, range, pasture, and woodland
- Soil types: sand, silt, or clay
- 1920s: new technology produced more crops
- The Dust Bowl (1930s) affected the panhandle of Oklahoma.
- U.S. Soil Conservation Service (1935) was created to manage erosion and use soils wisely.



Vegetation

- Western part of the state - early settlers found grasses as tall as the wagon bed
- Paths cleared: allowed children to walk to school
- Climate changes and humans cause a tug-of-war between grasslands & woodlands
- 20% of the land about 10 million acres forested about 140 tree species native to the state
- 6 million acres of commercial forest
- Oak & pine: most valuable timber commercially
- Trees: milled into fiberboard, plywood, & paper
- By 1956 the U.S. Forest Service estimated only 15% of original hardwoods remained.
- Forests slowly being reforested with new trees, better management, and wildlife containment.
- Cedar wood products: mulch, litter box chips, lumber, and insect repellent



Mineral Resources: Oil and Natural Gas

- First oil seepages spotted by Indians; petroleum produced in 1882
- Nellie Johnston No. 1 (1887) near Bartlesville: first major oil discovery; wildcatters streamed in the territory
- 1901: Red Fork field near Tulsa first well to be financially significant
- The Glenn Pool (1905): another early successful oil well
- Tulsa became known as the “Oil Capital of the World”
- By statehood, Oklahoma produced 40 million barrels of oil a year.
- 1920: production up to more than a billion barrels a year
- 1928: oil boom moved to Oklahoma City
- 1930: “Wild Mary Sudik” began gushing out oil and natural gas
- Oklahoma: ranks in the top six states in the nation in oil production and top three in natural gas
- 2004: output = 171,000 barrels a day



Mineral Resources: Coal

- Coal dug first by hands of Indians and sold by the basket
- 1873: commercial coal mining began in Oklahoma
- Coal deposits all in the eastern part of the state including Arkoma Basin
- Most mining done in surface operations; nearly 1.6 million tons of coal produced in Hartshorne and McAlester



Mineral Resources: Nonfuel Minerals

- Zinc, lead, manganese, and iron mined in the past
- Sand and gravel are found throughout the state and are used for building construction and roadways.
- Oklahoma granite called “grey gold”: found mainly in the Arbuckle & Wichita mountains
- The state capitol built of granite from Tishomingo and black granite from Cold Springs.
- Limestone is mined in more than 30 counties and used for making cement and fertilizer.
- Clay found in the state is used for making bricks to build homes and buildings and for pottery.
- Glass is produced from silica sands from south-central Oklahoma.
- Oklahoma is 3rd in the country in helium production: a byproduct of natural gas wells.
- Gypsum is used to make drywall and plaster for construction, cement, chalk, dental molds, surgical casts, paint filler, toothpaste, soil additives, tofu, and plaster of Paris.
- Oklahoma is the only state that produces iodine.



Mineral Resources: Salt

- State's salt resources in use for centuries
- Salt plains: contained within several counties in northwestern Oklahoma
- Eastern part of the state: numerous salt springs
- Removing the salt from the springs requires boiling the water until the water evaporates, leaving the salt.
- Salt on the plains: only needs to be loaded



Groundwater

- One of the most valuable resources to human life
- Underground basins called aquifers: porous gravel, rock and sand that hold water that seeps down from rainfall, lakes, and ponds
- Nearly half Oklahoma's water is taken from aquifers.
- Ogallala aquifer: runs from Texas into the edge of South Dakota & from portions of five other states
- Stretches across the Panhandle & part of northwestern Oklahoma
- Ogallala aquifer is perhaps the most important aquifer in the state and provides millions of gallons of water used to irrigate fields.
- Water is being used for irrigation and development faster than it can be replenished by rainfall, a major ecological problem for the future.



Waterways

- More than 500 rivers and streams or 78,578 miles; 34 major reservoirs
- Hundreds of lakes and ponds supply 60% of water consumed
- Much water for used for agricultural irrigation
- Surface water used for municipal water supplies, mining, and recreation
- Manmade lakes and dams were an effort to provide water for city, industrial, & agricultural growth and flood control; more manmade lakes than any other state in the nation
- Eufaula and Texoma are the state's largest lakes.
- The U.S. Army Corps of Engineers, the U.S. Bureau of Reclamation, and the Grand River Dam Authority are responsible for building the lakes.
- Western streams tend to be wide and sandy with high gypsum and salt concentrations.
- Streams in the east receive more rainfall and are generally deeper with rock banks and more rapid flow.
- Rivers in Oklahoma usually flow from northwest to southeast.
- The Arkansas and the Red Rivers have large drainage systems in Oklahoma.



Section 4: Oklahoma's Climate

- Essential Question:
 - How has climate affected life in Oklahoma?



Section 4: Oklahoma's Climate

- What terms do I need to know?
 - weather
 - climate
 - elevation
 - tornado



Temperatures

- Average temperature: about 60°F
- Winters: short and mild
- Below-freezing temperatures about 60 days in the south and 95 days in the north
- January: coldest month averaging 36°F
- Summers: long and hot
- July and August: temperatures exceed 90°F
- Indian Summer: periods that extend high temperatures into fall and provide long growing season for agriculture – 168 days in north to 225 days along the Red River



Precipitation

- Great variation in rainfall influenced by latitude and elevation.
- Southeastern section averages 51 inches of rain per year
- The Panhandle: about 15 inches per year
- Snowfall averages two inches in the southeast and up to 30 inches in the Panhandle.
- Hail storms, torrential rain, and lightning all cause damage.
- Water control projects are a great help to flood-prone areas.
- Severe weather can result in dangerous lightning – about \$1 million/year in Oklahoma



Tornadoes

- Oklahoma is a part of “Tornado Alley.”
- Funnels result with winds rotating counterclockwise.
- They are usually less than a quarter-mile wide but may be two miles wide.
- Average 54 per year
- 1999: most active with 145
- 1988: only 17
- The National Severe Storms Laboratory is located in Norman.



A truck was wrapped around a utility pole as a from a tornado near Moore, OK in 1999.



Climate and the Economy

- Winds are both damaging and appreciated.
- They provide power for windmills to pump water and generate electricity to rural homes.
- Wind “farms” consist of giant wind turbines that generate electricity when the wind blows.
- Transmission lines move electricity to the consumer.



The Blue Canyon wind farm is located near Lawton, OK.





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