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# TEACHER'S GUIDE 2018

# WEEK 1 GAMES

Submitted by Ginny Rohr, retired OKAGE Teacher Consultant, Tulsa

<p>Oklahoma vs Florida Atlantic Oklahoma State vs Missouri State Texas at Maryland</p>	<p><b>GAME SCHEDULE</b> Kansas vs Nicholls State Baylor vs Abilene Christian Texas Tech vs Ole Miss TCU vs Southern</p>	<p>West Virginia vs Tennessee Iowa State vs South Dakota State Kansas State vs South Dakota</p>
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1. In July 2018, twelve boys and their soccer coach were rescued from a flooded cave in Thailand after being trapped for more than two weeks. The international rescue effort was assisted by a company in Norman started in part by graduates of the meteorology department at the University of Oklahoma. OU's Research Campus is home of the National Weather Center. What type of assistance did they provide?
2. Several states where Big 12 games will be played this week have experienced extreme drought conditions over the past six months. What is a drought and what are some of its affects? Using <http://droughtmonitor.unl.edu/>

3. View the U.S. and World Population Clock at <https://www.census.gov/popclock/>. Which states hosting Big 12 games this week are among the top ten in the United States for population? What is the population of each of these states? What is the population per square mile in each of these states? Which host city is among the top ten in population, what is its population and population per square mile?

4. Big 12 schedules are posted "Time (CT)". What does CT stand for? How many time zones are there in the United States? Name them. The Texas Longhorns are playing the Maryland Terrapins in College Park, MA and the game is listed at 11:00 a.m. (CT). In which time zone is Maryland located and what time will the game actually start there?



**U.S. Population**

3

2

8

,

2

1

7

,

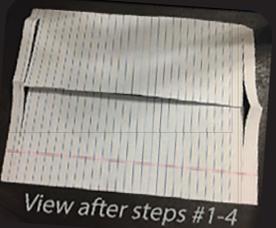
2

4

8

**→ OVERTIME ACTIVITY**  
**Walk Through Notebook Paper**

- Materials:* notebook paper, scissors  
*Directions:*
1. Fold and crease a piece of notebook paper in half lengthwise.
  2. About 1/4 inch from the end of paper, starting at the fold, use scissors to start cutting across and stop cutting just before the edge. (Don't cut all the way through!)
  3. Repeat step 2 on the opposite end of the paper.
  4. Unfold the paper. Cut along the crease of the large middle section.
  5. Refold the paper again.
  6. Cut about 1/4 inch away from your first cut, cutting in the opposite directions. (Don't cut all the way through!)
  7. Continue making cuts along the entire length ALTERNATING sides.
  8. Carefully unfold the notebook paper and gently pull it open.
  9. You should have a giant ring which you can walk through!  
You have expanded the border!



Which Big 12 state shares an international border with Mexico? How long is this border? There are several pedestrian ("walk through") border crossings in El Paso, TX. How many miles is it from El Paso to each Big 12 game played this week in Texas?

**WEEK 1: AUGUST 27-SEPTEMBER 2**

**ANSWER #1:**  
It was the monsoon season in Thailand so the company, Weather Decision Technologies, was asked to track the amount of rainfall expected near that cave. Their 24/7 operation helped provide up to date information. The 12-hour time difference was helpful because their team could send information in the late evening and early morning hours using their state of the art resources. The founders of WDT all came from meteorological research organizations in Norman and some received their Master's degrees in Meteorology from OU.

- <https://www.cbsnews.com/live-news/thai-cave-rescue-soccer-team-all-out-of-cave-in-thailand-2018-07-10-live-updates/>
- <http://www.ou.edu/nwc>
- <https://newsok.com/article/5600835/norman-based-weather-company-aids-in-thai-cave-rescue>
- <https://wdtinc.com/company-overview/>

**ANSWER #2:**  
Drought is a long period of low precipitation resulting in extensive damage to agricultural crops, and a consequential loss of yield. Kansas and Texas are the two Big 12 states most affected by recent drought.

- <http://droughtmonitor.unl.edu/>
- <http://drought.unl.edu/Education/DroughtIn-depth/WhatisDrought.aspx>

**ANSWER #3:**  
Texas – 28,304,596; 108  
North Carolina – 10,273,419; 211  
Houston, TX – 2,312,717; 3,633  
<https://www.census.gov/popclock/>

**ANSWER #4:**  
CT = Central Time  
The U.S. has six time zones: Eastern, Central, Mountain, Pacific, Alaska, and Hawaii Standard Time  
Maryland – Eastern Time; 12:00 noon  
[http://www.big12sports.com/SportSelect.dbml?&DB\\_OEM\\_ID=10410&SPID=13139&SPSID=106580](http://www.big12sports.com/SportSelect.dbml?&DB_OEM_ID=10410&SPID=13139&SPSID=106580)  
<https://greenwichmeantime.com/time-zone/usa/time-zones/>  
<https://www.timeanddate.com/worldclock/usa>

**OVERTIME ANSWER:**  
Texas and Mexico share 1,254 miles of common border.  
El Paso to:  
Houston - 745 miles  
Fort Worth - 604 miles  
Waco - 615 miles  
<https://www.usatoday.com/border-wall/us-mexico-interactive-border-map/>  
<https://www.txdot.gov/inside-txdot/projects/studies/statewide/border-crossing.html>  
<https://apps.cbp.gov/bwt/mobile.asp?action=n&pn=2402>

**TRIVIA ANSWER:**  
Houston, TX - Longitude: -95.36  
College Park, Maryland - Longitude: -76.93  
Charlotte, NC - Longitude: -80.84  
College Park, Maryland, is the farthest east.  
<http://www.big12sports.com/>  
[http://www.big12sports.com/SportSelect.dbml?&DB\\_OEM\\_ID=10410&SPID=13139&SPSID=106580](http://www.big12sports.com/SportSelect.dbml?&DB_OEM_ID=10410&SPID=13139&SPSID=106580)  
<https://gps-coordinates.org/>

# WEEK 2 GAMES

Submitted by Jeff Woolsey,  
OKC Public Schools, Oklahoma City

## GAME SCHEDULE

Oklahoma vs UCLA  
Oklahoma State vs South Alabama  
Texas vs Tulsa

Kansas at Central Michigan  
Baylor at UTSA  
Texas Tech vs Lamar  
TCU at SMU

West Virginia vs Youngstown State  
Iowa State at Iowa  
Kansas State vs Mississippi State



1. The Jaguars of South Alabama play the Oklahoma State Cowboys in Stillwater this week. Compare Alabama and Oklahoma in terms of square miles and population. Which state is larger in total area? Which state has a larger population?
2. The Kansas Jayhawks play the Central Michigan Chippewas in Mount Pleasant, MI this week. The state of Michigan consists of two separate land areas, an upper and a lower peninsula, and is bordered by four of the five Great Lakes. What is a peninsula? Name the Great Lakes that border Michigan.
3. The Penguins of Youngstown State University will waddle in to Morgantown, WV to play the WVU Mountaineers this week. National forests comprise most of West Virginia's eastern border; name them. In what mountain range are they located?
4. When the Bulldogs of Mississippi State University play the Kansas State Wildcats, they must cross the river from which their state gets its name. There are two major tributaries of the Mississippi River. What is a tributary? Name these two major tributaries. How long is the Mississippi River, and where are its starting and ending points?

### → OVERTIME ACTIVITY

The United States is made up of 50 states; for each team that is playing this week, name the state in which each team is located in alphabetical order and list each state's capital.

Photo by Tom A. Heck

## WEEK 2: SEPTEMBER 3-SEPTEMBER 9

### ANSWER #1:

In terms of area, Oklahoma is larger with 69, 898 square miles, compared to Alabama with 52,419 square miles. According to the U.S. Census (2010), Alabama has the greater population with 4,779,736 residents; Oklahoma has 3,751,351 people.

<http://www.ipl.org/div/stateknow/popchart.html>

### ANSWER #2:

A peninsula can be defined as an area of land surrounded by water on three sides. The four Great Lakes that border Michigan are Lakes Superior, Michigan, Huron, and Erie.

<http://www.yourdictionary.com/peninsula>

<https://goo.gl/images/W39V6L>

<https://www.google.com/maps/>

<https://www.nationalgeographic.org/education/mapping/outline-map/?map=Michigan>

### ANSWER #3:

The Monongahela National Forest lies within West Virginia and the George Washington and Thomas Jefferson National Forests form much of the eastern border with Virginia. Both forests are in the Appalachian Mountains.

[https://www.fs.fed.us/recreation/map/state\\_list.shtml](https://www.fs.fed.us/recreation/map/state_list.shtml)

<https://goo.gl/maps/NiccRmc5LzA2>

<https://www.google.com/maps/>

[https://data.fs.usda.gov/geodata/other\\_fs/docs/guide\\_to\\_national\\_forests\\_20060117.pdf](https://data.fs.usda.gov/geodata/other_fs/docs/guide_to_national_forests_20060117.pdf)

<https://1carent.com/map-of-appalachian-mountains>

### ANSWER #4:

A tributary is a stream that flows to a larger stream or other body of water. The Missouri River and the Ohio River are the largest rivers that flow into the Mississippi River. The source (beginning) of the Mississippi is Lake Itasca, MN and flows for 2,350 miles and empties into the Gulf of Mexico.

<http://www.dictionary.com/browse/tributary>

<https://www.nps.gov/miss/riverfacts.htm>

### OVERTIME ANSWER:

Alabama – Mobile;

California – Sacramento;

Iowa – Des Moines;

Kansas – Topeka;

Michigan – Lansing;

Mississippi – Jackson;

Ohio – Columbus;

Oklahoma – Oklahoma City;

Texas – Austin;

West Virginia – Charleston

<https://state.1keydata.com/>

### TRIVIA ANSWER:

Fans of the UCLA Bruins will drive most of the way on Interstate 40, from Los Angeles, CA to Norman, OK for the OU-UCLA game, a distance of about 1,365 miles.

<https://goo.gl/maps/ZFxy2AizL662>

<https://www.google.com/maps/>

# WEEK 3 GAMES

Submitted by Pam Merrill, retired OKAGE Teacher Consultant, Edmond & Janet Hall, Bethany Public Schools, Bethany

## GAME SCHEDULE

Iowa State vs Oklahoma  
Oklahoma State vs Boise State  
Texas vs USC

Kansas vs Rutgers  
Baylor vs Duke  
Texas Tech vs Houston

TCU vs Ohio State  
West Virginia at NC State  
Kansas State vs UTSA

- The football stadium at Oklahoma State University is named for a wealthy alumnus, T. Boone Pickens, who graduated in 1951 with a degree in geology. What was the name of Oklahoma State University in 1951 and what did the name mean? How did Mr. Pickens become a multimillionaire?
- Residents of Idaho watched the construction of irrigation dams on the Boise and Snake Rivers during the first decade of the 20th century. Most arable land became cultivated, but soon fertilizers and pesticides began to pollute the rivers. What federal law has helped to eliminate these pollutants that threatened fish and other wildlife?
- Rutgers University is located in New Brunswick, NJ, located next to the Jersey Shore. In 2012, a massive 'superstorm' caused over \$30 million of damage to communities near and around New Brunswick. The Jersey Shore suffered the most



severe winds from this storm and experienced the second highest flood in its history. What was this storm called? Over what body of water did this storm begin?

- Durham, NC is the home of Duke University, founded in the mid-1800s by Methodists and Quakers. In the mid-20th century, Durham became a hub for research and technology. Today, experts in many fields have migrated to work together, study, and solve major problems in society, health, and engineering. What is the nickname of this region? One of the early companies to locate in this area was Chemstrand; what product later used on football playing fields was invented by Chemstrand?



Photo by Mario Tama/Getty Images

### ➔ OVERTIME ACTIVITY

Imagine the year is 2012. You are a news reporter working at a television station in New Jersey. You carefully followed the events of the devastating storm that struck the area in October and its aftermath. Prepare a three-minute news story in which you report on the effects of this "superstorm" on humans and their environment. Describe the use of weather technology to provide warnings of the storm, the role everyday citizens played in helping to rescue neighbors, and the services provided by government agencies to help citizens of the Jersey Shore recover. **Use the following websites to prepare your story.** When finished, deliver the news story in a simulated broadcast to your classmates or create a digital recording of your story for playback to your class.

- <https://tinyurl.com/y9m2bwp6>
- <https://tinyurl.com/yaottsxv>
- <https://tinyurl.com/yd69vtul>

## WEEK 3: SEPTEMBER 10-SEPTEMBER 16

### ANSWER #1:

Oklahoma Agricultural and Mechanical (A&M) College. It was established to focus on degrees related to agriculture and mechanical skills. Mr. Pickens borrowed money, invested carefully, and built an empire as one of the largest independent natural gas and oil companies in the United States.

- [http://www.boonepickens.com/?page\\_id=253](http://www.boonepickens.com/?page_id=253)
- <https://www.orangeconnection.org/s/860/Hybrid/index.aspx?sid=860&qid=1&pgid=5600>

### ANSWER #2:

Clean Water Act  
<https://www.snakeriverwaterkeeper.org/water-quality/>

### ANSWER #3:

Hurricane Sandy was directly responsible for at least 147 deaths in the United States, Canada, and islands in the Caribbean Sea where the hurricane began.

- <https://www.weather.gov/okx/HurricaneSandy>
- <https://www.cnn.com/2013/07/13/world/americas/hurricane-sandy-fast-facts/index.html>

### ANSWER #4:

The area around Durham and Raleigh, North Carolina's capital, became known as Research Triangle Park. Chemstrand invented an artificial turf, first called "ChemGrass," later popularly called "AstroTurf."

- <https://www.rtp.org/about-us/>
- <http://www.premierartificialturf.com/articles/the-history-of-artificial-turf.php>

### OVERTIME ANSWER:

- <https://oceanservice.noaa.gov/hazards/sandy/>
- <https://www.livescience.com/24380-hurricane-sandy-status-data.html>
- [https://www.nasa.gov/mission\\_pages/hurricanes/archives/2012/h2012\\_Sandy.html](https://www.nasa.gov/mission_pages/hurricanes/archives/2012/h2012_Sandy.html)

### TRIVIA ANSWER:

Rutgers University (Piscataway, New Jersey – home stadium location) and the University of Southern California (Los Angeles, California) are the farthest away from each other at about 2800 miles.  
<https://goo.gl/maps/SoyXeXDrKXq>

# WEEK 4 GAMES

Submitted by Pam Merrill, retired  
OKAGE Teacher Consultant, Edmond

## GAME SCHEDULE

Oklahoma vs Army  
Oklahoma State vs Texas Tech

Texas vs TCU  
Baylor vs Kansas

West Virginia vs Kansas State  
Iowa State vs Akron

1. Today's nickname for the U.S. Military Academy's athletic teams is the "Army Black Knights" but most people refer to them as just "Army." The military academy is located on the grounds of the oldest occupied military post in the United States, on the shore of what river? This river serves both as a major waterway for the region, as well as a political boundary between what two states?
2. The U.S. Military Academy was once the only school of engineering in the nation. Its cadets learned firsthand about the construction of canals when a navigable waterway was

built connecting the New York cities of Albany and Buffalo. What was the structure called? When was it begun and when was it completed? How long is this waterway?

3. Founded in 1870, the University of Akron's athletic teams are known as the "Zips" and their mascot is named "Zippy". What is Akron's mascot and how did it get its name?
4. Iowa State University is known for its science and engineering education. Its sports teams are known as the "Cyclones". A

cyclone is a weather event created by rotating masses of air occurring on the plains of central Iowa during the spring and early summer. Occasionally, "mesocyclones" also form into severe thunderstorms over land and can lead to what dangerous weather events? What is the area called where most of these events occur?

### ➔ OVERTIME ACTIVITY

All graduates of the U.S. Military Academy at West Point serve as officers in the U.S. Army for five years if active duty. Graduates may be assigned to many Army bases in the United States or abroad. Check out the interactive map of our Army bases found at <https://www.goarmy.com/about/post-locations.html>. What special training and preparations are made at such bases as Yuma, AZ; San Antonio, TX; Fort Sill, OK; Norfolk, VA; and Fort Benning, GA? Which base do you think would be most interesting to visit and why?



By USMA Public Affairs Office [Public domain], via Wikimedia Commons

## WEEK 4: SEPTEMBER 17-SEPTEMBER 23

### ANSWER #1:

The U.S. Military Academy is on the west bank of the Hudson River; the river forms the boundary between New York and New Jersey.

<https://www.britannica.com/place/Hudson-River>

<https://goo.gl/maps/uik4P2m2EyJ2>

### ANSWER #2:

Construction on the Erie Canal began in 1817 and New York Gov. Dewitt Clinton officially opened it in 1825. The canal is 363 miles long.

<https://eriecanalway.org/learn/history-culture>

<https://www.history.com/topics/erie-canal>

### ANSWER #3:

Zippy is a kangaroo, named after the nickname for a popular rubber overshoe, called "zippers," made by the B.F. Goodrich Tire Company, headquartered in Akron, Ohio. In addition to these rain boots, automobile tires were produced in Akron factories.

<https://www.uakron.edu/zippy/>

[https://www.uakron.edu/about\\_ua/history/athletics\\_history\\_traditions.dot](https://www.uakron.edu/about_ua/history/athletics_history_traditions.dot)

### ANSWER #4:

The most severe mesocyclones are known as tornadoes. Many of these storms occur in "Tornado Alley," an area stretching from Texas through Oklahoma, Kansas, and Nebraska, but can occur anywhere in the United States.

[http://severewarningsystems.com/about\\_meso.html](http://severewarningsystems.com/about_meso.html)

### OVERTIME ANSWER:

Answers vary

### TRIVIA ANSWER:

The Chisholm Trail was named for Jesse Chisholm (1805-1868), a trader of Scotch and Cherokee heritage, who is buried near Left Hand Spring, northeast of Geary, Oklahoma.

<https://www.fortworth.com/blog/post/10-things-to-know-about-the-chisholm-trail/>

<https://www.travelok.com/listings/view.profile/id.3935>

<http://www.okhistory.org/publications/enc/entry.php?entry=CH045>

# WEEK 5 GAMES

Submitted by Jeff Woolsey,  
OKC Public Schools, Oklahoma City

## GAME SCHEDULE

Oklahoma vs Baylor  
Kansas vs Oklahoma State

Kansas State vs Texas  
Texas Tech vs West Virginia

TCU vs Iowa State

1. Several Big 12 teams will have to travel out of state to play this week. Which team has the shortest distance to travel and what is the most direct route they can take?
2. The OSU Cowboys and their fans ride into Lawrence, KS, this week to challenge the Kansas Jayhawks. Of the two states, which state capital is larger in total area? That city covers how many square miles? Which state capital has a larger population? How many more people live there than in the other state capital?
3. Population density is defined as the number of people living in each unit of area (such as a square mile). This measurement allows for a broad comparison of settlements across geographic

areas. Of the five states in the Big 12, which state has the greatest population density? Which state has the lowest?

4. Each of the states with colleges in the Big 12 has a place identified as the spot with the greatest elevation above sea level. Name the highest point in each Big 12 state and list the states in order of elevation from highest to lowest.

### ➔ OVERTIME ACTIVITY

At the present time, the United States gets 81% of its total energy from fossil fuels: oil, coal, and natural gas. The U.S. depends on these natural resources for everything from heating our homes to fuel for our vehicles, as well as providing electricity for industry and manufacturing. Of the five states with Big 12 teams, which state produces the most coal? Which state produces the most crude oil and natural gas? For the production of each of these fossil fuels, where does Oklahoma rank? Which Big 12 state produces virtually no fossil fuels? Which Big 12 state produces the most ethanol as an alternative to fossil fuels?



<http://texashillcountry.com/beautiful-sunsets-oil-fields-video/>



## WEEK 5: SEPTEMBER 24-SEPTEMBER 30

### ANSWER #1:

At a distance of about 270 miles, the Baylor Bears in Waco, TX, will travel to Norman to play the OU Sooners; the most direct route is north on I-35.

<https://goo.gl/maps/HTu5dNVXuqF2>

### ANSWER #2:

Oklahoma City is the second largest state capital in the nation with a total area of 607 square miles. Also, Oklahoma City, with a population of 653,865, has more than a half million more people living there than in Topeka, the Kansas state capital, with a population of 125,838.

<http://worldpopulationreview.com/states/state-capitals/>

<https://www.worldatlas.com/articles/the-10-largest-state-capitals.html>

### ANSWER #3:

Texas has the greatest population density with 104.9 people per square mile, while Kansas ranks last among the Big 12 states with 35.6 people per square mile.

<https://state.1keydata.com/state-population-density.php>

### ANSWER #4:

Texas – Guadalupe Peak – 8,751 feet above sea level  
 Oklahoma – Black Mesa – 4,975 feet above sea level  
 West Virginia – Spruce Knob – 4,863 feet above sea level  
 Kansas – Mount Sunflower – 4,041 feet above sea level  
 Iowa – Hawkeye Point – 1,671 feet above sea level

<https://state.1keydata.com/highest-point-by-state.php>

## OVERTIME ANSWER:

West Virginia produces the most coal among Big 12 states, while Texas produces the most crude oil and natural gas. According to current data from the U.S. Energy Information Administration, Iowa produces almost none of these fossil fuels, although it ranks first in the nation in the production of ethanol (from corn) as a gasoline additive. Oklahoma ranks third in the nation in the production of natural gas, fourth in the production of crude oil, and 21st in the production of coal.

<https://www.eia.gov/state/rankings/#/series/48>

<https://www.eia.gov/state/rankings/#/series/46>

<https://www.eia.gov/state/rankings/#/series/47>

<https://www.eia.gov/todayinenergy/detail.php?id=31832>

**TRIVIA ANSWER:** California tops Texas in population with about 12 million more people, while Alaska is more than twice the size of Texas in area measured by square miles.

<http://www.ipl.org/div/stateknow/popchart.html#statesbysize>

# WEEK 6 GAMES

Submitted by Ginny Rohr, retired OKAGE Teacher Consultant, Tulsa

## GAME SCHEDULE

Oklahoma vs Texas

Oklahoma State vs Iowa State  
West Virginia vs Kansas

Baylor vs Kansas State

1. A University of Oklahoma researcher and his team have decoded the DNA of the colorful Painted Bunting songbird. In which Big 12 states are these birds usually found?
2. Wildfires ravage thousands of acres each year. The U.S. Forest Service provides an online interactive visitor map containing layers such as "fire activity" where you can view up-to-date information. Using data from National Interagency Fire Center (NIFC), for each Big 12 team playing this week, list the numbers of acres burned in each state this past year in wildland fires (non-prescribed burns).
3. Volcanology is the study of volcanoes. Kilauea Volcano on the Big Island of Hawaii is one of the most active volcanoes on the planet and has caused much damage over the past few months. Texas, which is hosting two of this week's Big 12 games, is home of an extinct volcano that was active

about 80 million years ago. What is its name and where is it located? Using a Texas Department of Transportation map or mileage grid, what is the approximate distance from this extinct volcano to each of the Big 12 game locations in Texas?

4. Explain the difference between the verbs "immigrate" and "emigrate." In what year was each city hosting a Big 12 game this week founded? From where did those early settlers emigrate?

### ➔ OVERTIME ACTIVITY

#### Balancing Act

1. Raise your arms in a "touchdown symbol".
2. Stand on one leg and raise your other leg while rotating it in circles.
3. Time yourself.
4. What happens after a while?

What is the EPA? According to their website, <https://www.epa.gov/>, what is their mission? When was the EPA established? Concerns have arisen over recent EPA's deregulations affecting the nation's balance between human health and the environment and economic development. Give some examples of these concerns.



Guadalupe Peak and El Capitan; a landscape "lonely as a dream," wrote Edward Abbey. (Bryan Schutmaat)

## WEEK 6: OCTOBER 1-OCTOBER 7

**ANSWER #1:** Painted Buntings can frequently be seen and heard in Kansas, Oklahoma, and Texas.  
[http://www.ou.edu/web/news\\_events/articles/news\\_2018/ou-research-team-identifies-structure](http://www.ou.edu/web/news_events/articles/news_2018/ou-research-team-identifies-structure)  
<https://www.audubon.org/field-guide/bird/painted-bunting>

**ANSWER #2:**  
Iowa - 7,216 acres  
Kansas - 476,306 acres  
Oklahoma - 502,625 acres  
Texas - 734,682 acres  
West Virginia - 6,866 acres  
<https://www.nifc.gov/nicc/>  
<https://www.nifc.gov/fireInfo/nfn.htm>  
[https://www.predictiveservices.nifc.gov/intelligence/2017\\_statsumm/fires\\_acres17.pdf](https://www.predictiveservices.nifc.gov/intelligence/2017_statsumm/fires_acres17.pdf)

**ANSWER #3:**  
The extinct volcano is now known as Pilot Knob in Austin, Texas.  
Austin to Dallas: 192 miles  
Austin to Waco: 102 miles  
<https://volcanoes.usgs.gov/observatories/cvo/volcanologists.html>  
<https://www.nps.gov/havo/index.htm>  
<https://www.jsu.utexas.edu/news/2015/11/looking-back-at-the-life-of-austins-once-explosive-volcano-pilot-knob>  
<http://www.library.utexas.edu/geo/ggtc/ch4.html>  
<http://ftp.dot.state.tx.us/pub/txdot-info/trv/maps/mileage-grid.pdf>

**ANSWER #4:** To immigrate means to enter and usually become established; especially: to come into a country of which one is not a native for permanent residence.  
To emigrate means to leave one's place of residence or country to live elsewhere.

Dallas, Texas, was founded in 1841, by French, Belgians, Swiss, Germans, and African-Americans. Prior to this, the area was occupied by Native American Indians.  
Waco, Texas, was founded in 1849 on the site of a Waco (Hueco) Indian village by George Bernard Erath, an immigrant from Vienna, Austria.  
Morgantown, West Virginia, was founded in 1772 by Zackquill Morgan from Wales who received a charter from the Virginia Assembly in 1785.

Prior to this, the area was occupied by Native American Indians. Stillwater, Oklahoma, was officially founded in 1889, although a group of "boomers" led by William L. Couch attempted to open the area to settlement five years earlier. A wide variety of ethnic Europeans, African Americans, and native-born Americans came during the "run" into the Unassigned Lands that year. Prior to the Civil War, it was land assigned to the Muscogee Creek Nation by the Indian removal treaties.  
<https://www.merriam-webster.com/dictionary>  
<https://tshaonline.org/handbook/online/articles/hdd01>  
<http://digitalcollections.baylor.edu/cdm/landingpage/collection/tx-map-x>  
<https://www.britannica.com/place/Waco>  
<https://www.morgantownwv.gov/239/History>  
<http://www.okhistory.org/publications/enc/entry.php?entry=ST037>  
<http://www.okhistory.org/publications/enc/entry.php?entryname=IMMIGRATION>

### OVERTIME ANSWER:

You lose your balance!  
The United States Environmental Protection Agency, known as the EPA for short, was established by Congress in 1970, because of concerns about air and water pollution, such as oil spills, deteriorating city air, and water supplies contaminated with dangerous impurities.  
EPA's mission "is to protect human health and the environment". Among the concerns expressed by some observers have been: repealing environmental regulations; opening protected lands and waters to oil and gas drilling; withdrawing the United States from the Paris climate accord; shrinking the boundaries of federal monuments; appointment of top officials who have questioned or denied the established science of human-caused climate change.

<https://www.epa.gov/aboutepa>  
<https://www.npr.org/2017/08/12/542998622/trump-s-epa-rolls-back-dozens-of-environmental-regulations>  
<https://news.nationalgeographic.com/2017/03/how-trump-is-changing-science-environment/>

**TRIVIA ANSWER:** Called the longhorned tick or bush tick, it feeds on cattle, small ruminants, horses, dogs, cats, people, and several common wildlife species. Originally found in East Asia, this tick has also been reported in West Virginia.  
<https://news.okstate.edu/articles/communications/2018/oklahoma-state-veterinary-center-identifies-exotic-tick.html>

# WEEK 7 GAMES

Submitted by Janet Hall,  
Bethany Public Schools, Bethany

Kansas State vs Oklahoma State

## GAME SCHEDULE

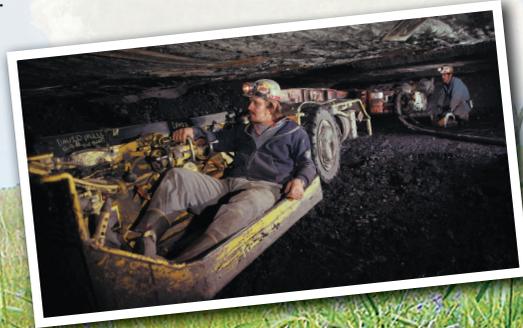
Texas vs Baylor  
TCU vs Texas Tech

Iowa State vs West Virginia

1. What Big 12 team is from a city nicknamed "The Little Apple"? Why did the nickname come into being?
2. Only half of the teams playing this week are located within the Mississippi River Drainage Basin. What is a "drainage basin"? Which of this week's Big 12 teams are in this basin?
3. What is a "coal seam"? Which Big 12 team comes from the state that produces the second most coal in the United States?
4. One of the Big 12 teams playing this week is from "the Midwest." Which team is it? Why is their region called "the Midwest"?

## ➔ OVERTIME ACTIVITY

Half of the schools playing this week were land-grant schools. How is the mission of land-grant universities supposed to be a bit different than the mission of other universities? Using a blank map of the United States, map the location of land-grant universities in at least 15 states.



By Kgw01972 at English Wikipedia. Photo by Edwin Olson [Public domain], via Wikimedia Commons

## WEEK 7: OCTOBER 8-OCTOBER 14

### ANSWER #1:

Kansas State University is located in Manhattan, Kansas. The nickname "The Little Apple" came about because Manhattan, Kansas, was originally named after Manhattan, New York, one of the five boroughs making up New York City. The New York Manhattan has been called "The Big Apple" since the early 1900s.

<http://www.manhattancvb.org/26/Historic-Manhattan>

### ANSWER #2:

A drainage basin is area where any precipitation (in any form) that falls ends up flowing into a single stream or river. The Big 12 teams playing this week that are located within the Mississippi River Drainage Basin are Oklahoma State, Kansas State, Iowa State, and West Virginia University.

<https://www.britannica.com/science/drainage-basin>

<https://slideplayer.com/slide/5335508/17/images/8/Mississippi+River+Drainage+Basin.jpg>

<https://study.com/academy/lesson/drainage-basins-definition-characteristics.html>

### ANSWER #3:

A coal seam is an underground band of coal that is thick enough to mine. In recent history, West Virginia has produced more coal each year than any other state except Wyoming.

<https://www.eia.gov/tools/faqs/faqs.php?id=69&t=2>

[https://energyeducation.ca/encyclopedia/Coal\\_seam](https://energyeducation.ca/encyclopedia/Coal_seam)

### ANSWER #4:

Iowa State is part of the Midwest. Historically, the Midwest includes states created out of the Northwest Territory that was added to the Union by the Northwest Ordinance of 1787; this territory was surrendered to the

United States by Great Britain in the Treaty of Paris of 1783. Because the Northwest Territory lay between the East Coast and what was then seen as Far West, the region was called the "Northwest". As states were added farther west in northern areas added to the U.S. by the Louisiana Purchase in 1803, the name "Midwest" came into usage. Today, the Midwest (sometimes called the Middle West) includes the states of Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.

<https://www.britannica.com/place/Middle-West>

<https://fivethirtyeight.com/features/what-states-are-in-the-midwest/>

<http://www.urbanophile.com/2015/10/29/12-ways-to-map-the-midwest/>

### OVERTIME ANSWER:

The original mission of these institutions, as set forth in the first Morrill Act, was to teach agriculture, military tactics, and the mechanic arts as well as classical studies so members of the working classes could obtain a liberal, practical education.

<http://www.aplu.org/about-us/history-of-aplu/what-is-a-land-grant-university/index.html> <https://www.npr.org/2012/07/05/156301146/land-grant-universities-and-future-of-agriculture>

**MAP SOURCE:** <http://www.dailyonder.com/files/images/land-grant-map-lrg.jpeg>

### TRIVIA ANSWER:

The Baylor Bears will travel about 100 miles to play the Texas Longhorns in Austin.

<https://goo.gl/maps/hocXYfeV8R92>

# WEEK 8 GAMES

Submitted by Jeff Widener, OU Professor, Department of Geography & Environmental Sustainability, Norman

## GAME SCHEDULE

TCU vs Oklahoma

Texas Tech vs Kansas

**1.** As Sooner fans leave the TCU game this week, they will be heading back to the "Oklahoma Borderline." Who is the famous Oklahoman, an exceptional guitar player, who co-wrote and sang this song that reached #9 on the Billboard Hot Country Songs and Tracks? Where was this artist born?

**2.** His songs "Peggy Sue," "That'll be the Day," and "Not Fade Away," among many others continue to inspire rock and roll musicians around the world. Name this musician who was born in 1936 and died in a plane crash in 1959 near Clear Lake, Iowa. Where was he born and how did his hometown honor his legacy?

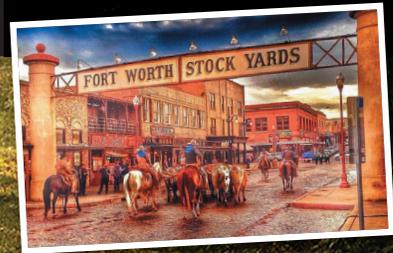
**3.** Centron Corporation was an extremely successful short documentary, educational, and industrial film production company that started in 1947. The company, however, did not get its start in Hollywood. Name the Big 12 college town where Centron began. For this company, what is the significance of the documentary *Leo Beuerman*?

**4.** Although this Big 12 university's team isn't playing this week, a well known popular song entitled "Take

Me Home, Country Roads" was written about this state in the 1970s. The musician's uncle, Abe Deuschendorf, was from Lawton and served in the Oklahoma State Legislature 1994-2006. Name the composer and singer of "Country Roads" and the state about which it was written.

### ➔ OVERTIME ACTIVITY

Oklahoma and Texas have extremely strong ties to agriculture. Fort Worth, which is home to Texas Christian University, and Oklahoma City, located just a few miles north of the OU-Norman campus, have both revitalized their historic stockyards into urban entertainment zones. Historically, however, the Fort Worth Stockyards and the Oklahoma City Stockyards had different names. Visit the official websites of each place. By what name were they initially known? Of the two, which one still functions as working stockyards?



*Country roads, take me home  
To the place I belong...*

## WEEK 8: OCTOBER 15-OCTOBER 21

### ANSWER #1:

Born in Norman, Vince Gill recorded "Oklahoma Borderline." He has been called "Nashville's preeminent guitar slinger," as he is one of country music's greatest guitar players—and singers! He is noted for his unique style that fuses jazz, rock, blues, bluegrass, and country music. Several video clips of Vince Gill are available on YouTube.

<https://www.rollingstone.com/music/music-country-lists/vince-gills-14-favorite-guitar-players-16235/jimmy-page-4-228216/>

<http://www.okhistory.org/publications/enc/entry.php?entry=GI006>

### ANSWER #2:

Buddy Holly was born in Lubbock, Texas, in 1936 and was killed in a plane crash when an inexperienced pilot encountered inclement weather. The City of Lubbock is home to the Buddy Holly Center, which features a museum that honors his legacy. The Buddy Holly Gallery is shaped like a guitar. A statue was made to honor his musical contributions and his induction in the West Texas Hall of Fame. Several video clips of Buddy Holly are available on YouTube.

<https://www.rollingstone.com/music/music-news/the-last-days-of-buddy-holly-93571/>

<https://ci.lubbock.tx.us/departments/buddy-holly-center/buddy-holly-museum/museum-history>

### ANSWER #3:

Centron Corporation got its start in Lawrence, KS, in 1947. The company specialized in the production of educational and short industrial films for companies like John Deere and General Electric. The documentary *Leo Beuerman* earned the company an Academy Award nomination. The inspirational film showed the life of Mr. Beuerman, who was born with a severe disability. The documentary chronicled his inventions that helped him navigate Lawrence. Clips of the documentary are available on YouTube.

<https://www.kshs.org/kansapedia/centron-films-camera/10288>

<https://www.imdb.com/title/tt0064581/>

### ANSWER #4:

Born Henry John Deuschendorf, Jr., in 1943, the composer and singer of "Take Me Home, Country Roads" took the professional name John Denver. Among the lyrics of the song are, "Almost heaven, West Virginia, Blue Ridge Mountains, Shenandoah River...Country roads, take me home to the place I belong – West Virginia..."

<http://johndenver.com/about/biography/>

<https://youtu.be/1vrEljMfXYo>

<https://newsok.com/article/3740511/former-oklahoma-lawmaker-abe-deuschendorf-dies-at-77>

### OVERTIME ANSWER:

The Fort Worth Stockyards was originally called Niles City. Niles City was called the "richest little city in the world," as it had a property value of over \$30 million, before it was annexed by Fort Worth in 1923.

The Oklahoma City Stockyards City was originally called Packingtown. Like Niles City, Packingtown was a business district that catered to the stockyards industry—containing hotels, western stores, and restaurants.

Oklahoma City's Stockyards City still operate as a commercial trading center for livestock, whereas the Fort Worth Stockyards only commemorate the livestock trading industry through its heritage markers, museums, and world's only "twice-daily cattle drive."

<https://www.fortworthstockyards.org>

<https://www.stockyardscity.org>

### TRIVIA ANSWER:

Carlos "Chuck" Ray Norris was born in Ryan, Oklahoma, located in Jefferson County just minutes from the Red River. The Tarrant County Courthouse was often featured in Norris' hit show "Walker, Texas Ranger".

<http://www.okhistory.org/publications/enc/entry.php?entry=NO009>

<http://www.fortwortharchitecture.com/courthse.htm>

# WEEK 9 GAMES

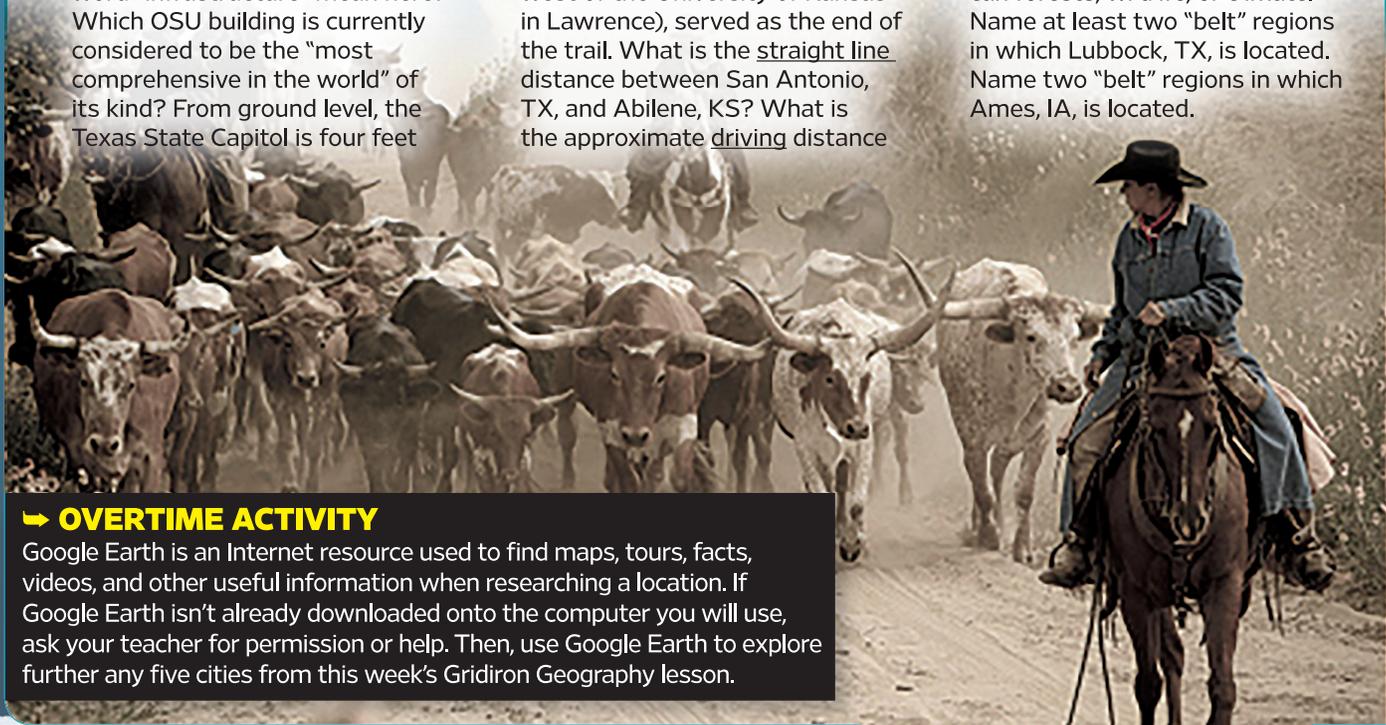
Submitted by LeaAnn J. Wyrick,  
Broken Bow Public Schools, Broken Bow

GAME SCHEDULE		
Oklahoma vs Kansas State	Kansas vs TCU	Iowa State vs Texas Tech
Oklahoma State vs Texas	West Virginia vs Baylor	

1. The Oklahoma Sooners will host the Kansas State Wildcats this week. In general, what is the range of temperatures KSU fans should expect? What is the average number of days of rainfall this month at OU?
2. The Texas Longhorns will travel to Stillwater to meet the Oklahoma State Cowboys this week. Each school has an impressive infrastructure. What does the word "infrastructure" mean here? Which OSU building is currently considered to be the "most comprehensive in the world" of its kind? From ground level, the Texas State Capitol is four feet

3. The TCU Horned Frogs will invade Jayhawk Territory this week. Cattle drivers herded thousands of head of cattle up the famed Chisholm Trail from 1867-1884, starting at San Antonio, TX. Until 1871, Abilene, KS (about 115 miles west of the University of Kansas in Lawrence), served as the end of the trail. What is the straight line distance between San Antonio, TX, and Abilene, KS? What is the approximate driving distance

4. The Cyclones and the Red Raiders are scheduled to battle it out this week. Each school location is part of a region. Region is defined as an area of land that has common features, either natural or cultural. Language, industry, government, or religion can define a region, as can forests, wildlife, or climate. Name at least two "belt" regions in which Lubbock, TX, is located. Name two "belt" regions in which Ames, IA, is located.



### → OVERTIME ACTIVITY

Google Earth is an Internet resource used to find maps, tours, facts, videos, and other useful information when researching a location. If Google Earth isn't already downloaded onto the computer you will use, ask your teacher for permission or help. Then, use Google Earth to explore further any five cities from this week's Gridiron Geography lesson.

## WEEK 9: OCTOBER 22-OCTOBER 28

### ANSWER #1:

Wildcat fans can expect gameday temperatures to be between a high of 77.4°F and a low of 51.3°F on average. There is usually rain on six days in October in Norman.

<https://www.weatherbase.com/weather/weatherall.php3?s=193643&cityname=Norman+-+University+of+Oklahoma%2C+Oklahoma%2C+United+States+of+America&units=>

### ANSWER #2:

The infrastructure of an organization is its basic framework or underlying foundation, in other words, the buildings on each campus. The OSU Student Union is the largest student union in the world at 543,411 square feet. The University of Texas Tower was built at a higher elevation at 606 feet above sea level; the elevation of the State Capitol is 541 feet above sea level.

<https://union.okstate.edu/about-union.html>

<https://news.utexas.edu/2013/10/07/the-truth-about-bevo-and-9-more-ut-facts>

[http://www.lat-long.com/Latitude-Longitude-2032563-Texas-Texas\\_State\\_Capitol.html](http://www.lat-long.com/Latitude-Longitude-2032563-Texas-Texas_State_Capitol.html)

<https://www.emporis.com/buildings/123142/university-of-texas-tower-austin-tx-usa>

### ANSWER #3:

"As the crow flies," it is about 660 miles from San Antonio to Abilene. Driving along the I-35, the most direct route, the distance is about 732 miles. Marietta, OK, is at about the halfway point.

<https://www.distance-cities.com/distance-san-antonio-tx-to-abilene-ks>

### ANSWER #4:

Lubbock, TX, lies in the Bible Belt, Sun Belt, and Wheat Belt. Ames, IA lies in the Corn Belt and Frost Belt.

<http://www.businessinsider.com/regions-america-bible-belt-rust-belt-2018-4>

### OVERTIME ANSWER:

Answers will vary

<https://www.google.com/earth/>

### TRIVIA ANSWER:

The original Mountaineer Field seated only 38,000 fans and could not be expanded, so the present stadium, built in the late 1970s and expanded several times, now seats more than 60,000. The Monongahela River flows generally northward through Morgantown to join the Allegheny River at Pittsburgh, Pennsylvania, to form the Ohio River.

<https://www.collegegridirons.com/stadiums/mountaineer-field/>

<https://www.wvencyclopedia.org/articles/2018>

# WEEK 10 GAMES

Submitted by LeaAnn J. Wyrick,  
Broken Bow Public Schools, Broken Bow

Texas Tech vs Oklahoma  
Baylor vs Oklahoma State

**GAME SCHEDULE**  
Texas vs West Virginia  
Kansas vs Iowa State

TCU vs Kansas State

1. This week, Texas Tech will host the Oklahoma Sooners. The BNSF Railway connects Norman, OK, and Lubbock, TX. How many railway miles are between these two cities? What is the eastern-most city in the United States served by the BNSF? How many total route miles does the BNSF comprise?
2. Oklahoma State will travel to Waco, TX to face the Baylor Bears. The Brazos River runs through Waco. During what unusual weather storm did the temperature fall to 10° below zero in Waco, allowing people to ice skate on the Brazos? By what names is this historic meteorological event called? How many states experienced below 0°F during the storm?

3. The Texas Longhorns and the West Virginia Mountaineers will match up on the gridiron this week. Geological remains of extinct volcanoes lie in both states. Mole Hill Mountain actually lies in what state adjacent to West Virginia? How long ago did it last erupt? How does the extinct volcano near Austin benefit the modern-day Texas farmer?
4. Texas Christian University and Kansas State University both have mascots inspired by the animal kingdom. The "horned frog," TCU's mascot, is actually

a short-horned lizard, also known as a horny toad. What bizarre defense mechanism does this reptile have? Where are horny toads found? Kansas State's mascot, Willie the Wildcat, is actually a gray bobcat. In what diverse habitats are bobcats found, and on which continent?



➔ **OVERTIME ACTIVITY**  
Data-USA < <https://datausa.io/> > and the Census Bureau < <https://www.census.gov/> > are great resources that can be used to learn information about almost any city in the United States. Choose four colleges from this week's Gridiron Geography games. Using the Internet sites above, compare the different towns or cities in areas such as education, industry, demographics, and health and safety. In which college town would you choose to live or start a business, based on the information gained from these sources? Explain your answer.



## WEEK 10: OCTOBER 29-NOVEMBER 4

### ANSWER #1:

There are 466 rail miles between Norman and Lubbock. Most of the BNSF Railway operates west of the Mississippi River, but it does have line that goes east from Memphis through Birmingham to Atlanta. The BNSF has a rail network of 32,500 route miles.

- <http://www.bnsf.com/bnsf.was6/RailMiles/RMCentralController>
- <http://www.bnsffoundation.org/pdf/network-map.pdf>
- <https://www.statista.com/topics/3052/facts-and-figures-about-bnsf-railway/>

### ANSWER #2:

Sometimes called the Blizzard of 1889, the Great Arctic Outbreak of 1889, and the St. Valentine's Day Blizzard, every state in the Union (note: there were only 45 states in the United States in 1889) had sub-zero cold in early February, including Gulf Coast beaches and the Florida panhandle.

- <https://weather.com/storms/winter/news/america-coldest-outbreaks>

### ANSWER #3:

Mole Hill Mountain is near Harrison, Virginia, but much of its geological evidence can be seen in West Virginia. It last erupted at least 47 million years ago. Pilot Knob, near Austin, Texas, provided volcanic material that helped enrich the soil of the surrounding area.

- <http://www.virginiaplaces.org/geology/volcano.html>
- <https://www.atlasobscura.com/places/mole-hill>
- <http://texashillcountry.com/pilot-knob-largest-extinct-volcano-remaining-in-central-texas/>

### ANSWER #4:

The short-horned lizard squirts blood out the corners of its eyes, which can travel up to three feet; they are found in deserts and semi-arid environments of North and Central America. Bobcats are found in forests, swamps, deserts, and sometimes suburban areas throughout most of North America.

- <https://www.nationalgeographic.com/animals/reptiles/s/short-horned-lizard/>
- <https://www.nationalgeographic.com/animals/mammals/b/bobcat/>

### OVERTIME ANSWER:

Answers will vary.  
<https://datausa.io>  
<https://www.census.gov/>

### TRIVIA ANSWER:

Memorial Stadium was dedicated in 1922 to honor the 127 men and two women KU students, faculty, staff, and alumni who lost their lives in the First World War. The first stadium was built in 1892 and named McCook Field. That same year KU defeated the University of Illinois 26-4 in the first football game played there.

- <http://places.ku.edu/buildings/memorialstadium>

# WEEK 11 GAMES

Submitted by Jeff Woolsey,  
OKC Public Schools, Oklahoma City

## GAME SCHEDULE

Oklahoma vs Oklahoma State  
Texas Tech vs Texas

Kansas State vs Kansas  
Iowa State vs Baylor

West Virginia vs TCU

- Several teams this week will play their in-state rivals. Which team has the farthest to travel? If they drive by the most direct route, what highway will they travel? What is the approximate distance?
- The Horned Frogs of Texas Christian University play the Mountaineers of West Virginia University this week. Which state has the higher point of elevation, and which state has the

lower point of elevation? Name each point and its elevation.

- The University of Oklahoma and Oklahoma State University are two of the first three universities established in Oklahoma. In what year were they established and what were their original names? What other university in Oklahoma was established at this time? By what name is it known by today?

- Which state with universities in the Big 12 is bordered by the most states? Which by the fewest states? Name each state and list the states that border it.



### ➔ OVERTIME ACTIVITY

Lines of latitude circle the earth and travel east to west and tell us how far north or south of the equator a place is located. Lines of longitude travel from the North Pole to the South Pole and tell us how far east to west of the Prime Meridian a place is located. Together they form an imaginary grid around our planet. Of all the Big 12 games played this weekend, which game will be played closest to the Equator? Which will be played closest to the Prime Meridian? Which will be played farthest from the Equator? Which will be played farthest from the Prime Meridian?



## WEEK 11: NOVEMBER 5-NOVEMBER 11

### ANSWER #1:

The University of Texas Longhorns, in Austin, will have to travel to Lubbock, TX, by way of US-84, for a distance of about 373 miles.

<http://www.distancebetweenecities.net/>

[http://www.distancebetweenecities.net/austin\\_tx\\_usa\\_and\\_lubbock\\_tx\\_usa/route](http://www.distancebetweenecities.net/austin_tx_usa_and_lubbock_tx_usa/route)

<https://goo.gl/maps/1yEjgtJzK7p>

### ANSWER #2:

Texas has both the higher and the lower point of elevation compared to those in West Virginia. The highest point in Texas is Guadalupe Peak at 8,749 feet above sea level, and the lowest point is at sea level on the Gulf of Mexico.

<https://www.infoplease.com/world/united-states-geography/highest-lowest-and-mean-elevations-united-states>

### ANSWER #3:

OU was established in 1890 as the state university, known as the University of Oklahoma, in Norman. OSU was also established in 1890 as the Oklahoma Territorial Agricultural and Mechanical College in Stillwater. The third university was the Territorial Normal School located in Edmond, now known as University of Central Oklahoma.

<https://www.orangeconnection.org/s/860/Hybrid/index.aspx?sid=860&gid=1&pgid=5600>

<http://www.ou.edu/publicaffairs/oufacts>

<http://sites.uco.edu/about/history.asp>

### ANSWER #4:

Both Oklahoma and Iowa are bordered by six states. Oklahoma shares borders with Texas, New Mexico, Colorado, Kansas, Missouri, and Arkansas. Iowa is bordered by Nebraska, South Dakota, Minnesota, Wisconsin, Illinois, and Missouri. Texas is bordered by only four states: New Mexico, Oklahoma, Arkansas, and Louisiana.

<https://www.infoplease.com/atlas/map-united-states>

<http://www.onlineatlas.us/united-states-map.htm>

### OVERTIME ANSWER:

Closest to the Equator – Texas Tech vs. Texas (Lubbock, TX at 33.59°N)

Farthest from the Equator - Iowa State vs. Baylor (Ames, IA at 42.03°N)

Closest to the Prime Meridian – West Virginia vs. TCU (Morgantown, WV at 79.95°W)

Farthest from the Prime Meridian – Texas Tech vs. Texas (Lubbock, TX at 101.87°W)

<https://www.gps-coordinates.net/>

### TRIVIA ANSWER:

Texas has two National Parks – Big Bend established in 1944, and Guadalupe Mountains in 1966.

<https://www.nps.gov/index.htm>

<https://www.nationalpark-adventures.com/united-states-national-parks.html>

# WEEK 12 GAMES

Submitted by Jacob Rosecrants, OK State House District 46 Representative, Norman

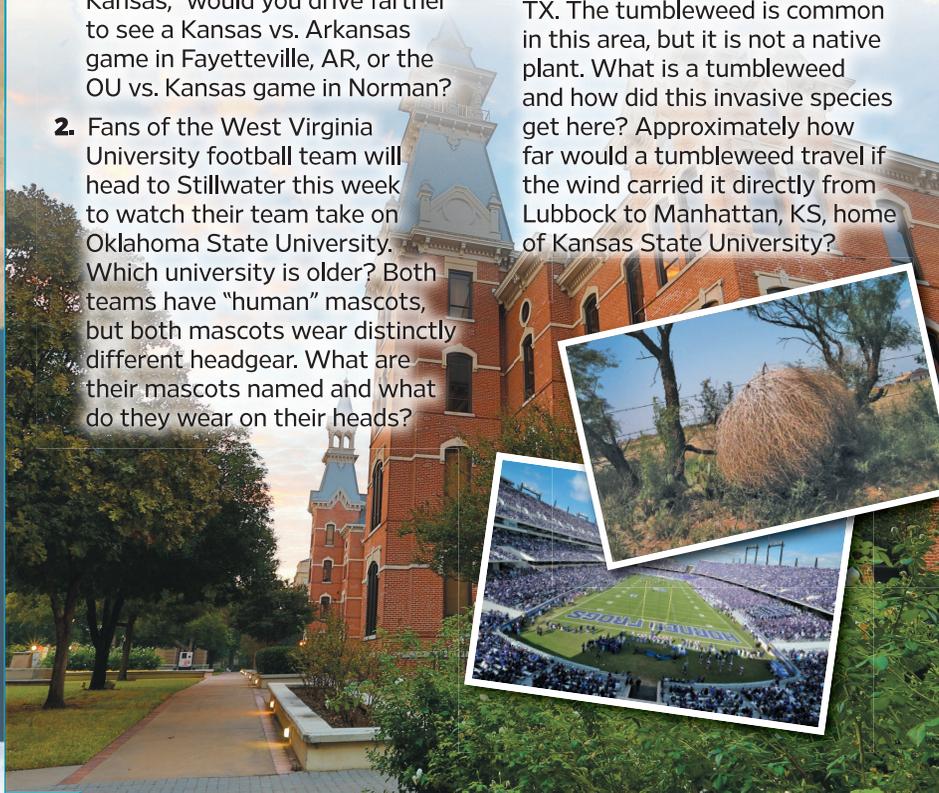
Oklahoma vs Kansas  
Oklahoma State vs West Virginia

**GAME SCHEDULE**  
Texas vs Iowa State  
Baylor vs TCU

Kansas State vs Texas Tech

- The University of Kansas Jayhawks will play the OU Sooners in Norman this Saturday. You probably didn't know this, but there is a town in Oklahoma named Kansas, sometimes called "Little Kansas." In what year was this town platted? Was this before or after Oklahoma became a state? If you lived in "Little Kansas," would you drive farther to see a Kansas vs. Arkansas game in Fayetteville, AR, or the OU vs. Kansas game in Norman?
- Fans of the West Virginia University football team will head to Stillwater this week to watch their team take on Oklahoma State University. Which university is older? Both teams have "human" mascots, but both mascots wear distinctly different headgear. What are their mascots named and what do they wear on their heads?

- Baylor University and Texas Christian University, whose teams play each other this week, are both private Christian universities founded by Protestant denominations. With which denomination is each university affiliated? When was each university founded?
- Texas Tech is located in Lubbock, TX. The tumbleweed is common in this area, but it is not a native plant. What is a tumbleweed and how did this invasive species get here? Approximately how far would a tumbleweed travel if the wind carried it directly from Lubbock to Manhattan, KS, home of Kansas State University?



**➔ OVERTIME ACTIVITY**

**Part 1:** Not all tornadoes are "created equal." While all can do damage, tornadoes are rated in regards to the degree of damage due to the intensity of the wind. Meteorologists classify tornadoes according to what is called the Enhanced Fujita Scale, popularly known as the EF-Scale. How many levels of the EF-Scale do meteorologists recognize today? What wind speeds are associated with each?

**Part 2:** Tornado Genesis Project: We've discovered that tornadoes are caused by supercell thunderstorms with a well-defined circulation called a mesocyclone. Now it is your turn to create your own "tornado!"

**You'll need:**

- Water
- A clear plastic bottle with a cap (that won't leak)
- Glitter
- Dishwashing liquid

**Directions:**

1. Fill the plastic bottle with water until it's about 3/4 full.
2. Add a couple of drops of dishwashing liquid.
3. Sprinkle in a few pinches of glitter (this will make your tornado easier to see).
4. Put the cap on tightly.
5. Turn the bottle upside down and hold it by the neck.

Quickly spin the bottle in a circular motion for a few seconds, stop and look inside to see if you can see a mini tornado forming in the water.

**WEEK 12: NOVEMBER 12-NOVEMBER 18**  
**ANSWER #1:** Kansas, OK, was platted in 1902, five years before statehood in 1907. "Little Kansas" is less than 50 miles from Fayetteville, AR, but it is nearly 200 miles from Norman, so you would travel about four times as far to see the OU-Kansas game in Norman.

<http://www.okhistory.org/publications/enc/entry.php?entry=KA002>  
<https://goo.gl/maps/6gr9JLG7ywo>  
<https://goo.gl/maps/SnPjTzHN54m>

**ANSWER #2:** Oklahoma State University was founded as the Agricultural and Mechanical College of Oklahoma Territory in 1890, while WVU was founded in 1867, so WVU is 23 years older than OSU. The mascot of WVU is the "Mountaineer" who wears a "coonskin" cap, consisting of the skin and tail of a North American racoon. OSU's mascot is called "Pistol Pete," named for an early Oklahoma cowboy and U.S. Marshall; the student chosen to be Pistol Pete each year wears a much larger-than-life fiberglass "head" that weighs 35-40 pounds.

<http://wvpublic.org/post/february-7-1867-west-virginia-university-founded#stream/0>  
<http://timeline.okstate.edu/>  
<https://www.alumni.wvu.edu/traditions/mountaineer-mascot>  
<https://library.okstate.edu/oralhistory/digital/pistol-pete-collection/about-pistol-pete>  
[https://www.tulsaworld.com/sportsextra/everything-you-want-to-know-about-pistol-pete/article\\_4caa9204-eb7e-11e3-96a8-001a4bcf6878.html](https://www.tulsaworld.com/sportsextra/everything-you-want-to-know-about-pistol-pete/article_4caa9204-eb7e-11e3-96a8-001a4bcf6878.html)

**ANSWER #3:** Baylor University is affiliated with the Baptist General Convention of Texas, and was chartered in 1845. Texas Christian University had several names since it was founded in 1873; TCU is associated with the Christian Church (Disciples of Christ).

<http://www.sbc.net/colleges/>  
<http://www.tcu.edu/90.asp>  
<http://www.tcu.edu/96.asp>

**ANSWER #4:** A tumbleweed is actually a type of Russian thistle that is believed to have been brought into the United States in the 1870s accidentally by Russian immigrants who had with them flax seed that was apparently contaminated by thistle seed. Each winter after Russian thistle plants die, the brittle bushy parts snap off at the roots and blow away, dispersing seeds wherever they tumble.

A tumbleweed would travel about 490 miles from Lubbock to Manhattan "as the crow flies."

<https://www.mnn.com/earth-matters/wilderness-resources/stories/everything-you-ever-wanted-know-about-tumbleweeds>

<https://www.distance-cities.com/distance-lubbock-tx-to-manhattan-ks>  
**OVERTIME ANSWER:**

FUJITA SCALE			DERIVED EF SCALE		OPERATIONAL EF SCALE	
F Number	Fastest 1/4-mile (mph)	Second Gust (mph)	EF Number	Second Gust (mph)	EF Number	Second Gust (mph)
0	40-72	45-78	0	65-85	0	65-85
1	73-112	79-117	1	86-109	1	86-110
2	113-157	118-161	2	110-137	2	111-135
3	158-207	162-209	3	138-167	3	136-165
4	208-260	210-261	4	168-199	4	166-200
5	261-318	262-317	5	200-234	5	Over 200

**\*\*\* IMPORTANT NOTE ABOUT ENHANCED F-SCALE WINDS:**  
*The Enhanced F-scale still is a set of wind estimates (not measurements) based on damage. Its uses three-second gusts estimated at the point of damage based on a judgment of 8 levels of damage to the 28 indicators listed below. These estimates vary with height and exposure. Important: The 3-second gust is not the same wind as in standard surface observations. Standard measurements are taken by weather stations in open exposures, using a directly measured, "one-minute mile" speed.*

<https://www.nssl.noaa.gov/education/svrwx101/tornadoes/>  
<https://www.ncdc.noaa.gov/climate-information/extreme-events/us-tornado-climatology/tornado-alley>  
<https://www.spc.noaa.gov/faq/tornado/>  
<https://www.spc.noaa.gov/faq/tornado/ef-scale.html>

**TRIVIA ANSWER:** Texas averages 146.7 tornadoes each year, while Iowa averages 49.2. Ranked from high to low, these are the top ten states for tornadoes (1991-2015): Texas, Kansas, Oklahoma, Florida, Nebraska, Illinois, Colorado, Iowa, Alabama, Missouri, and Mississippi.

<https://www.nssl.noaa.gov/education/svrwx101/tornadoes/>  
<https://www.spc.noaa.gov/faq/tornado/>  
[www.ustornadoes.com/2016/04/06/annual-and-monthly-tornado-averages-across-the-united-states/](http://www.ustornadoes.com/2016/04/06/annual-and-monthly-tornado-averages-across-the-united-states/)

# WEEK 13 GAMES

Submitted by Brenda Chapman, State Department of Education-Social Studies Coordinator, Oklahoma City

West Virginia vs Oklahoma  
TCU vs Oklahoma State

## GAME SCHEDULE

Kansas vs Texas  
Baylor vs Texas Tech

Iowa State vs Kansas State

1. The students at West Virginia University are infamously known for setting couches ablaze across campus after big victories. Morgantown is a relatively small town, so students may want to look elsewhere to replace their burned furniture. What nearby metropolis, known for its three large rivers, might a Mountaineer student visit for a day of fun and furniture shopping? About how far away is this city from Morgantown?
2. Before any Baylor home football game, it is impossible to miss one of their well-known traditions: the Baylor Golden Line. What is the Baylor Golden

Line? What is significant about what they wear?

3. Kansas State University is located in Manhattan, KS. On a nearby hill, KSU Wildcat engineering students placed 80-foot-tall letters "KS" beginning in 1921. Why didn't these or later students include a "U" also? On another nearby hill, there are concrete letters about 30 feet tall forming a landmark similar to the famous Hollywood sign in California. What sign appears on this hill?

4. Austin, TX is the state capital, but is also known for being the cultural hub of the Southwest. What long running television show began more than 40 years ago as a series to promote the live Texas music experience in Austin? This show inspired one of the largest music festivals in the country. Name at least three artists who were scheduled to appear at the 2018 festival in Zilker Park during October.



### → OVERTIME ACTIVITY

Students at Texas Tech University are known for an unusual tradition: smuggling tortillas into the stadium to throw when their Red Raiders score. The tortilla highlights the large "TexMex" influence that can be found across the Southwest which stems from the days when Mexico's flag flew over Texas, including Lubbock. What other nations have flown their flags over Texas for even a short time? Make a timeline, using the flags of these countries. (Hint: There may be a popular Texas amusement park that can help you with how many flags to find!)



## 14 GRIDIRON GEOGRAPHY 2018

### WEEK 13: NOVEMBER 19-NOVEMBER 25

#### ANSWER #1:

Less than two hours away (or about 75 miles) is Pittsburgh, PA, a city of about 300,000 residents, known for the fact that three rivers run through it: the Allegheny, the Ohio, and the Monongahela, which also runs through Morgantown.

<https://www.sbnation.com/2015/4/9/8378219/west-virginia-couch-burn-outdoor-furniture-ban>

<https://www.alleghenyfront.org/ourthreerivers/>

<http://popularpittsburgh.com/threerivers/>

<https://goo.gl/maps/HngfHZEBYMw>

#### ANSWER #2:

Freshman students take the field on their way from the tunnel to the student section. They are named the Golden Line after the yellow jersey every student wears with his/her graduation year and a nickname on the back. This jersey is presented to the freshmen in a ceremony at Independence, TX, the birthplace of Baylor University.

<https://www2.baylor.edu/baylorproud/2017/08/what-is-the-baylor-line/>

<https://www.baylor.edu/students/gameday/index.php?id=867039>

#### ANSWER #3:

There is still no "U" today because a large gully lies on the hill where the "U" would go. But the reason why only "KS" was placed there is much more complicated. You can read the many changes and proposals at one of the sources here. On the other hill, formerly known as Bluemont Hill, appears the name of the city: Manhattan.

[http://www.waymarking.com/waymarks/WMJG74\\_KSU\\_Manhattan\\_KS](http://www.waymarking.com/waymarks/WMJG74_KSU_Manhattan_KS)

<https://www.kstatecollegian.com/2013/08/26/manhattan-boasts-many-must-see-free-cheap-attractions/>

<https://www.kstatecollegian.com/2011/06/15/manhattan-hill/>

#### ANSWER #4:

The television show is Austin City Limits broadcast on the Public Broadcasting System. The Austin City Limits Music Festival showcased Paul McCartney, Metallica, Janelle Monae, Travis Scott, and many other musicians/groups.

<http://austincitylimits.com/>

<https://www.acfestival.com/lineup/>

#### OVERTIME ANSWER:

The six flags that flew over Texas since the early 16th century were those of Spain (1519-1685 and 1690-1821), France (1685-1690), Mexico (1821-1836), the Republic of Texas (1836-1845), the Confederate States of America (1861-1865), and the United States of America (1845-1861 and 1865-present).

<https://www.thestoryoftexas.com/education/texas-six-flags>

#### TRIVIA ANSWER:

Texas Tech in Lubbock prides itself with having more than 20 public sculptures on campus, including the iconic "Riding Into the Sunset", depicting Oklahoma native son Will Rogers astride his favorite horse Soapsuds, created by Electra Waggoner Biggs in 1950.

<http://www.ttuhub.net/2015/04/a-guide-to-public-art-on-the-texas-tech-campus/>

# WEEK 14 GAMES

Submitted by Jeff Widener, OU Professor, Department of Geography & Environmental Sustainability, Norman

## Big 12 Championship

1. Just a few years ago, Arlington, TX was the largest city in the U.S. without a public transportation system. The community has struggled to maintain a successful program, just recently dropping its bus route and replacing it with ride share vans. In 2017, however, Arlington launched "Milo." Describe "Milo" and its significance.
2. Since the end of World War II (1939-45), cities around the world have taken part in a program called "Sister Cities" (also called "twinning"). Through Sister Cities programs, different cultures come together at the local level, to

promote trade and commerce, and to aid in community development. Since 1951, Arlington has been a sister city of Bad Königshofen, which is located in what European country? What public gathering place in Arlington is named after this city? Likewise, what public spot in Bad Königshofen takes on the Arlington name?

3. Between 1950 and 1960, Arlington's population grew nearly 500% -- from 7,692 to 44,775. This growth placed considerable pressure on Arlington's ability to provide water to its residents. The city built Lake Arlington to alleviate the water supply

problem. What is the name of the waterway that the city dammed to create Lake Arlington? Why do some residents refer to the project as "Miracle Lake"?

4. Although the best known of the campuses of the University of Texas is in Austin, home of the Longhorns, there is also a campus in Arlington which fields a number of sports teams. What animal serves as the UT-Arlington mascot? In what sports does UT-Arlington have both men's and women's teams?



### ➔ OVERTIME ACTIVITY

Frank Liberto invented a popular stadium food item in Arlington, TX. Can you name this snack, made of corn chips and cheese usually topped with jalapeño peppers, now sold in stadiums all across the United States and explain why he is given his nickname as the "Father" of this popular food item?

GRIDIRON GEOGRAPHY 2018 15

### WEEK 14: NOVEMBER 26-DECEMBER 2

**ANSWER #1:** In 2017, Arlington, Texas, became the first city in the United States to offer an autonomous (self-driving) shuttle program open to the public. The shuttle service is called Milo, which takes passengers to and from parking in the Arlington Entertainment District (stadium areas). Its name represents mile zero—"the point at which guests arrive at their event destination." The shuttles are leased through EasyMile, a company based out of Toulouse, France. Rides are free and are pre-programmed to follow off-street trails.

<http://www.arlington-tx.gov/visitors/milo/>  
<https://www.dallasnews.com/business/technology/2017/02/03/future-self-driving-cars-may-get-tested-arlington>

**ANSWER #2:** Bad Königshofen is located Germany. Arlington and Königshofen have had a great relationship since being "sistered" in 1951. Königshofen is located a few miles west of the border that once divided East and West Germany before they became one country again in 1990. Being near the border, many refugees escaped East Germany to Königshofen. Arlington residents wanted to help and adopted Königshofen as a sister city—supporting the new residents of Königshofen with clothing, food, and gifts. The Bad Königshofen Aquatic Center in Arlington pays respect to Königshofen by mimicking characteristics of its "agrarian style" and design. Arlington Park in Königshofen, is a recreational park that boasts a monument designed by artists and sculptors from Arlington, TX, and Königshofen, Germany.

<https://naturallyfun.org/pools/bad-konigshofen#about>  
<http://www.arlington-tx.gov/history/arlington-history/1950-1977/>

**ANSWER #3:** The City of Arlington dammed Village Creek to create Lake Arlington. Project engineers estimated that it would take over two years to fill the lake to capacity. A rainy season, however, blessed the town and Lake Arlington filled in 26 days. The city named

it "Miracle Lake" as a result.

<http://www.arlington-tx.gov/history/arlington-history/1950-1977/>

**ANSWER #4:** The official mascot of the University of Texas at Arlington is the maverick, referring to an animal (or a person) that blazes its own trail, usually depicted as a horse. The UT-Arlington campus has men's and women's teams in basketball, cross country, golf, tennis, and track and field.

<https://www.uta.edu/uta/about/traditions/history.php>  
<https://utamavs.com/news/2018/7/10/baseball-mavericks-officially-a-part-of-teamua.aspx>

### OVERTIME ANSWER:

Stadium nachos were invented by Frank Liberto in Arlington, Texas. Though he's not the one who invented "restaurant-style nachos," he is given credit for being "The Father of Nachos." What was revolutionary to his invention was the cheese-pump that dispenses the "orange product" (the FDA does not call the product cheese, as it's mostly a blend of ingredients) on top of salty, tortilla chips. Frank first launched his invention at a Texas Rangers game in 1976 and then at a Dallas Cowboys game.

<https://www.smithsonianmag.com/arts-culture/the-history-of-baseball-stadium-nachos-53046650/>  
<http://naconline.org/2017/11/ricos-products-founder-frank-liberto-passes-away-at-age-84/>

**TRIVIA ANSWER:** The Texas Rangers, a major league baseball team in the American League (AL) West Division, plays their games in Globe Life Park in Arlington, Texas. The team moved to Arlington from Washington, D.C., after the 1971 season. The franchise started in 1961 as the Washington Senators.

<https://www.baseball-reference.com/teams/TEX/index.shtml>  
<https://tshaonline.org/handbook/online/articles/xot02>



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