

Oil Production: Texas and Saudi Arabia

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INTRODUCTION

Our world is absolutely dependent on oil, and it has been since its discovery. In the early 1900s, Texas had a large oil boom and the Gulf of Mexico became the center of the world's oil supply. Today, the Middle East is the core of oil production for the world. The abundance of oil in the Middle East ensures that the United States, and most of the world, will be dependent on the area for this precious resource. This reliance on oil has an impact on foreign relations. In recent history, the United States has had a volatile relationship with many of the countries in the Middle East. Many people blame conflicts such as the war in Iraq on the presence of oil. At the end of my unit, I would like students to be able to contemplate the economic and political consequences of oil presence.

My seventh-grade students at Lanier Middle School are vanguard/gifted and talented students who will benefit from seeing the interconnectivity of the world economy. Students will be able to see how the world changed with the abundance of oil. The price of oil is the object of much discussion in the United States. When teaching Texas history to my students, I want them to be able to look beyond Texas. As the world today is becoming a global community, I think it is important that in Texas History class, we try and see how Texas fits into the global community.

If we only focus on what happened in Texas during the Texas History course, we are doing our students an injustice. I hope that the unit I create can be used by more than just Texas History teachers. I would like to create a unit that incorporates a global perspective that can be used by World History or U.S. History teachers as well. The world is becoming a global community, and with this change it is important for students to see the societal, economic, and political connections that Texas has to the world. I would like to create a unit that makes this connection through the examination of oil.

OBJECTIVES

TEKS: Social Studies 7

The students will:

History

- Identify the effects of Spindletop.
- Identify major eras in Texas History.
- Describe defining characteristics, events and individuals from eras in Texas History.
- Explain the political, economic, and social impact of the oil industries.
- Define the impact of “boom and bust” and trace the boom-and bust cycle of leading Texas industries throughout the 20th century including oil and gas.
- Analyze the political, economic, and social impact of major wars, including World War I on the history of Texas.

Geography

- Interpret data about geographic distributions and patterns in historic Texas.
- Analyze how human factors have affected events in Texas.
- Locate places and regions of importance in Texas during the 20th century.
- Identify ways in which Texans have modified the environment and analyze the consequences of the modifications.
- Explain ways in which geographic factors have affected the political, economic, and social development of Texas.

Economics

- Explain economic factors that led to the urbanization of Texas.
- Trace the development of major industries that contributed to the urbanization of Texas.
- Analyze the impact of national and international markets and events on the production of goods in Texas.
- Analyze the impact of significant industries in Texas such as oil and gas.

Science, Technology, and Society

- Compare types and uses of technology, past and present.
- Analyze the effects of scientific discoveries and technological innovations such as oil and gas on the developments of Texas.
- Evaluate the affects of scientific discoveries and technological innovations on the use of resources such as fossil fuels.
- Analyze how scientific discoveries and technological innovations have resulted in interdependence among Texas, the United States, and the world.
- Make predictions about economic and environmental consequences that may result from future scientific discoveries and innovations.

RATIONALE

In the early 1900s, Texas was the center of the oil world, and still today it is Houston's main economic industry. I think that comparing the history and future of oil in the Middle East with that of Texas will help students understand how the economy dictates political decisions and, therefore, social outcomes. In particular, the unit that I create will help students evaluate the effects of scientific discoveries on the use of resources such as oil and will also allow students to analyze how these discoveries have resulted in the interdependence among Texas, the United States, the Middle East, and the world. The unit will allow students to make predictions about economic, social, and environmental consequences that result from world-wide oil production.

I would like my unit to start with the discovery of oil in Texas and show how this discovery helped move technological capabilities forward. For example, show that the discovery of oil allowed for the average American to have a car and be able to travel beyond their small town or state and why it is such a vital resource. Students can then research the impact of oil on the world economy. How did the discovery of oil help modernize countries around the world? I am interested in examining how oil has changed the history of Texas and the United States and how this was affected by the discovery of oil in the Middle East.

I am very interested in examining political relations between countries and how the presence or lack of oil may dictate international relations. How do other countries take the presence of oil into account when dealing with the Middle East? With global warming and the knowledge that one day we will run out of oil, I would like students to make predictions about the future. Where should the world go from here? Are we doomed to be oil dependent forever? What are the historical, current, and long-term consequences of oil reliance on the world?

I would like to organize my unit into four lesson plans. The first lesson will show students how dependent they are on oil for their everyday lives. Oil has become such a staple resource that we fail to recognize that it affects all aspects of our lives from the food we eat, the clothes we wear, the cosmetics we use, to the way we travel. The first lesson will show students that the lives they lead are completely reliant on oil. I would like students in this lesson to try and imagine a world without oil and brainstorm what will happen when we run out of this nonrenewable energy source. The second lesson would explain to students the geological and chemical aspects of oil. Students will learn how oil was created, and about the different types of oil reserves that are found around the world such as domes, anticlines, or folds. In this same lesson we will discuss the different types of extraction techniques and see maps that show the locations of the most dominant oil reserves throughout the modern world.

In the third lesson, we will discuss the Spindletop discovery in Texas. Not only would students become acquainted with the who, what, why, and how of Spindletop, but they will also investigate the ways that Spindletop changed Texas. For example, before the discovery of oil in Spindletop, Texas was an agricultural center. Texas was made up of rural agrarian citizens. The most immediate change that came to Texas was the creation of railroads. Many of the Texan workers left the farms and went to work creating miles of rail that was able to transport not just oil, but cattle and agricultural products very quickly to all areas of the United States. This discovery changed Texas from an agricultural state to an industrial state and immigrants poured into Texas to take advantage of the new opportunities.

The final lesson will examine international relations and the role that oil reliance has played on foreign policies. Students can role play countries that dominate the oil supply, and those who are completely dependent on importing oil. I would like to have students simulate the oil embargo of 1973 and have students representing different opinions and countries throughout the world. This simulation can help students understand the interconnectedness of the global economy and how the dependence on oil affects the different nations in our world.

UNIT BACKGROUND

Oil

Millions of years ago oceans covered areas that are land today, and billions of tiny plants and animals swam these oceans. When the plants and animals died, they sank to the muddy bottom of the ocean floor. When the sea level fell, rivers brought sediment that created a layer over the decaying plants and animals. As time went on, the sediments hardened into sandstone, which is a type of rock that has pores (Anderson 454). When the sea level increased again, another layer of muddy ocean floor bottom was created on top of the sandstone, which created a seal.

As the different layers were created, the heavy weight caused the seafloor to sink, and pressure, temperature, and time changed the partially decayed plants and animals into oil and gas. Because the oil and gas was underneath the porous sandstone, over time it was able to rise until it was trapped by the seal and created pockets of oil – or oil reservoirs (Anderson 455). The downward layers of rock that trap the oil is known as an anticline, and anticlines are a kind of structural trap that resembles an upside down bowl (Nawwab 178). The folds of rock do not always show from the surface of the ground. In order to search for these traps, geologists use

satellite images to create geologic maps that show potential areas of oil-bearing traps (Nawwab 179).

While it is generally accepted that the oil industry began in the 1800s, the earliest reports of people using oil dates back to the Fertile Crescent. The Sumerians and the Assyrians used petroleum to attach blades, treat the sick, and use as mortar for their structures (Nawwab 176). Marco Polo wrote about fountains of oil near the Caspian Sea, and Byzantine commanders used the oil as an accelerant to light their enemies on fire in warfare. There are also accounts of Native Americans in North America using the substance long before the 1800s. There are records as early as the 1500s that have Native American tribes using oil for medicinal purposes as well as caulking for their boats. The Seneca Indians drank petroleum to cure digestive problems and rubbed it on their skin to cure skin diseases (Giddeons 5). In later times, Anglo Americans used oil to grease the axles on their wagons. During the Revolutionary War, soldiers used the black sticky substance to lubricate their weapons.

The Start of Oil in the United States

Samuel Kier used the idea from the Seneca Indians and started bottling and selling oil as a medicine in 1874. In the 1840s a Canadian scientist, Abraham Gesner, discovered how to make kerosene fuel from petroleum (Anderson 459). Kerosene lamps give off much better lighting than candles. The demand for kerosene grew immensely. By 1850, Kier had created a distilling process and started experimenting with other uses for the petroleum. He found that the petroleum he had been skimming from the water of Oil Creek was a very effective and clean illuminant. Kier began calling it “carbon oil” and the demand soon exceeded the supply (Giddeons 5). Kier had been working with the Brewer, Watson and Company for bottling and selling the petroleum from a spring he had found in Titusville, Pennsylvania. In 1859, Edwin Drake decided to try drilling as a way of accessing the oil. Along with his partner James Townsend, Drake created the Seneca Oil Company and leased the farm where the oil spring was. Drake drilled 69 feet before striking oil (Giddeons 6).

The earliest oil wells were drilled by suspending a large sharp drill bit at the end of a rope and then repeatedly lifting it and letting it drop to create a hole in the ground (Nawwab 180). The rope was attached to a long board and passed over a pulley. The board acted as a lever. The earliest oil men used man power to lift and lower the drill bit, but as drilling techniques advanced, they created a steam powered drilling tool to lift and drop the bit. In 1909, Howard Hughes, Sr. created a more advanced drill bit called the cone bit. The cone bit used a rotation movement and had hard durable teeth that rotated through the layers of rock instead of the lift and drop method that had been used previously (Nawwab 180). Oil became a very popular means of illuminating homes and businesses in the North East. Coal, which had previously been the main source of energy, was much dirtier. World War I brought an immense increase in petroleum demand. In addition, the creation of the automobile made gasoline a necessity in the American life (Day 5). With the advancement and effectiveness of the new drilling techniques, oil became very abundant.

Because of the huge supply of petroleum, inventors started creating new uses for it. The most significant invention in the United States was the internal combustion engine. Henry Ford created the Model T and suddenly there was a huge demand for petroleum. In 1900 only 4,000 cars were produced; in 1910, 187,000 cars were produced (Nawwab 184). Industrialization, automobiles, and electrification of households in the 1920s propelled the demand for oil in the United States. Eventually, the United States was beyond its production capacity and it had to start looking abroad for overseas reservoirs to supply the enormous demand for oil (Oren 410).

Oil in Texas

Three decades after the oil rush in Pennsylvania, the Texas oil industry developed. Starting as early as the de Soto expedition, there has been evidence of liquid and gaseous petroleum reserves in Texas. When oil started being drilled successfully in Pennsylvania in the 1850s, men started digging wells in Texas, hoping for the same success. One of these men, Lyne Barret, drilled a well in 1866. The well flowed ten barrels a day (Rundell 18). At the time, it was decided that oil could be produced easier and cheaper in Pennsylvania and major oil ventures in Texas were given up for another twenty years.

With the advancement of drilling techniques and storage, more men were willing to explore petroleum options and wells were dug in Louisiana, Alabama, and Tennessee. In 1890, a Pennsylvanian oil company, The Petroleum Prospecting Company, came to Texas and revived the Oil Spring well where Barret had drilled years before in Nacogdoches. This well started a trend throughout Texas, and wildcatters, independent men who looked for oil and sold their leases to bigger companies, began drilling all over Texas hoping to strike it rich (Rundell 20). One of these men, Patillo Higgins, changed Texas forever.

Spindletop

Patillo Higgins lived in Beaumont and always believed that Big Hill, later called Spindletop, near the Neches River and about fifteen miles from the Gulf of Mexico, was filled with oil. He believed that the elevation combined with the gas seeps and mineral springs in the area were evidence that oil was under the hill (Rundell 21). Growing up he swam in the warm springs at the base of the hill and often wondered as an oilman if there could be black gold under that hill. The children of Beaumont claimed that the Big Hill was haunted and that the pirate Jean Lafitte had buried some of his treasure there. The sulfuric smell that the hill emitted helped spur this rumor (Burrough 1). Until this discovery, Beaumont had been a lumber town and most people believed it was fruitless to search for oil in Texas because the major supplies were back east. Despite the cynics, Higgins hired Curt and Al Hamill and Peck Byrd to drill the Big Hill (Burrough 2).

The Hamill brothers gained a reputation for being hard workers in the Corsicana oil fields. They had been drilling at Beaumont for seven weeks when they first saw evidence of oil. When they reported this to Higgins, he instructed them to drill deeper. On the morning of January 10, 1901, the Hamills and Byrd worked the drill bit seven hundred feet into the ground when the oil rig began to dance with excitement (Burrough 2). The drillers jumped and ran out of the way as mud, rocks, and natural gas started spewing from the hole. When things calmed down, the Hamills returned to the derrick to start removing the debris so they could continue to drill. As they approached, a spray of black thick oil erupted a hundred feet into the air (Burrough 9). Over one and a half million barrels of oil spewed from the well before they were able to cap it (Richardson 332).

This discovery changed Texas and the United States forever. The initial well found by the Hamills and Byrd produced more oil than all other American wells at the time – combined (Burrough 10). Spindletop spouted oil for nine days before they were able to get it under control. Before Spindletop, the largest oil well was able to produce 6,000 barrels a day, and Spindletop was producing 70,000 to 100,000 barrels of oil each day (Calvert 245).

After the initial well, Patillo Higgins paid to have more of the land around the Big Hill drilled. Later in 1901, the wells around the Big Hill, what became known as Spindletop, began producing more oil than the rest of the world's oil wells combined (Burrough 10). As word of the big Spindletop strike spread, speculators from all over the United States started rushing to Texas. Some of the largest oil companies in existence, such as Gulf, Texaco, Exxon, and Mobil were all created by the Texas oil discoveries following Spindletop (Richardson 333).

The excessive amounts of oil found at Spindletop changed the way the world used oil. There was so much oil that the price dropped to three cents a barrel, which made it economical for railroad and steamship companies to convert from coal use to oil use. “Everything that today runs on oil and its by-products, from automobiles to jet fighters to furnaces, barbeque grills, and lawn mowers – all of it began at Spindletop” (Burrough 10). The national coal industry went into a decline in the face of such an abundant and cheap energy source (Haley 446). In addition to the discovery of oil in Texas, numerous oil related industries soon came into existence around the state and eventually the nation. These industries included refineries, pipelines, ports for transporting the oil, machine shops, real estate firms, and geology and petroleum engineering firms (Calvert 245). Thus began the United States dependency on oil.

America and Saudi Arabia

Eventually, Texas did not have enough oil to supply the incredible demand that had arisen in the United States, and it forced Americans to start looking elsewhere: this brought them to Saudi Arabia. In 1923, Abd Al Aziz ibn Saud led a militant revolt against the ruling Hashemite government of the Arabian Peninsula. Ibn Saud’s revolt was successful and he declared himself king. The United States did not recognize his government, but this did not bother Ibn Saud. Because of the presence of both Britain and France in the region after World War I, he was not interested in, and in fact resented, Westerners (Oren 408). He did allow American missionaries into his kingdom and actually called on an American missionary doctor who was known in the region for successful medical treatments when a group of his men became ill. This partnership started relations between Saudis and Americans.

Outside of Jiddah, Saudi Arabia in 1933, the Saudi Government and Standard Oil of California (SOCAL) made an agreement that led to the greatest discovery of energy reserves the world has ever seen (Pakka 3). Oil had been found off the Saudi mainland in Bahrain, and an American, Karl Twitchell, convinced Standard Oil to start exploring Saudi Arabia. Standard paid the Saudi government 15.5 million dollars and promised a return on any oil finds, in return for permission to start drilling wells in the deserts of Saudi Arabia (Oren 413). Starting in 1933, geologists explored the desert and over 30 wells were drilled near any hill that could resemble an anticline trap. Unfortunately, Standard Oil did not find any commercial amounts of oil, and because of the depression that had hit the United States, they were running low on funds to continue the project. In 1936, The Texas Company (now Chevron), bought fifty percent interest in SOCAL’s agreement with the Saudi government (Pakka 9).

It took nearly five years, but finally in March of 1938 in Dhahran on the Damman Dome, 56 Americans and 620 Saudis hit massive amounts of oil (Pakka 6). This massive oil find was exactly what the United States needed to continue to support its oil-dependent industries that had been created after the find at Spindletop. This also created a trend of U.S. companies obtaining oil concessions in the region of the Middle East. Not only did United States oil companies maintain concessions in Saudi Arabia, but they also gained rights to some Iraqi oil, and in 1954 Americans obtained forty percent of the Iranian concession (Shwadran 2). The Middle Eastern countries relied on foreign oil companies for their oil industry because of their technical know-how, the huge financial resources necessary to operate and expand the industry, the refining plants, the transportation facilities, and the international markets that were all dominated by oil companies (Shwadran 4).

During World War II, the rampant search for oil in the Middle East was put on hold, but the relationship between Saudi Arabia and the United States remained strong. The Saudis provided oil to the Allied powers, and the United States protected and armed the Saudis (Rossi 89). This agreement between the two countries was one factor that helped the Allies win the war because,

thanks to Saudi Arabia, the Allies still had oil to continue to run their tanks and fuel their ships, while the Axis oil supplies were running low.

After WWII ended, the United States continued the search for Middle East oil, but also got involved in another Middle East matter, the creation of Israel, which seriously strained relations between the two nations (Rossi 89). In addition, during the early sixties, the Organization of Petroleum Exporting Countries (OPEC) formed in order to try and protect the interest of the oil producing nations instead of the large oil companies who had controlled the oil industry (Shwadran 4). Although the co-dependent relationship between Saudi Arabia and the United States continued, allowing the United States to buy Saudi oil for a very cheap price, increasing tensions regarding the creation of the Israeli state came to a head in 1973.

Dependence and the Oil Embargo of 1973

After the atrocities against the Jews during World War II, providing a safe refuge for Jews became a priority on the world stage. Unfortunately for the Palestinians, the Zionists were determined to make their homeland in Palestine. This Zionist desire was supported by the United Nations in their 1947 Partition Plan of Palestine to create two states, one for Jews and one for Palestinians (Rossi 91). The problem with this plan is that it would force Palestinians to move off of land they had been living on in order to create this new Jewish homeland. While the West, including the United States, tended to side with the Jewish movement, the Arab countries in the area rallied around the Palestinian belief that the Zionists had no right to claim Palestine. When the new state of Israel was announced in 1948, a bloody era of history began in the Middle East, and the Arab-Israeli conflict that continues today started with armies from Egypt, Syria, and Jordan marching in to reclaim the land for Palestine. The Arab-Israeli War of 1948 lasted for eleven months, and the Arabs failed miserably in their mission to take the land from the Jews. In fact, the Israelis were able to expand their territory (Rossi 92).

War became a reoccurring theme in many parts of the Middle East after the creation of the Israeli state. On October 6, 1973, Israel and its Arab neighbors battled for the fourth time. The causes of the October 1973 War, similar to the previous wars, were based on the Arabs asserting the “rights of the Palestinians” to restore the territory seized by Israel. However, the consequences of the 1973 War produced more international threats and disruptions than the previous Arab-Israeli conflicts (Sobel 2). The War of 1973 created a U.S.-Soviet nuclear confrontation, set the stage for the cold war, placed an oil embargo from Arab oil-producers to Israel’s supporters, and gave the oil producing countries of OPEC an upper hand in the world economy.

When Egypt and Syria invaded Israel on October 6, 1973, many of the OPEC nations encouraged each other to use oil as a political weapon. Iraq was the only country who did so initially when they nationalized the U.S. oil companies Exxon and Mobil (Stork 222). As the battle continued, more pressure was put on the oil producing nations to try and dissuade countries from coming to the aid of Israel, and so on October 16th OPEC raised their oil prices by seventy percent. The Saudi Arabian King Faisal sent a message to the United States warning them that if the United States sent aid to Israel then Saudi Arabia would give in to the pressures of the other OPEC nations and place an embargo on oil to the U.S. (Stork 224).

Israel was unprepared for the force that the Arabs brought to the 1973 war and asked the United States for aid, informing the U.S. that if they did not provide arms, Israel was prepared to use nuclear force against the invading Arab nations (Rossi 103). In an effort to avoid a nuclear conflict, the United States ignored the oil threat made by Saudi Arabia, and President Richard Nixon requested \$2.2 billion in military aid from Congress in the form of fighter planes and missiles to be sent to Israel (Stork 224). As promised, one day after Congress authorized military aid to Israel, Saudi Arabia declared an embargo against the United States. By October 22nd, all

OPEC producers had embargoed shipments to the United States. Some countries also placed an embargo on Holland who had additionally sent aid to Israel (Stork 224).

The result of the oil embargo in the United States was devastating. There were gas shortages, sky high prices, gas station lines that extended several blocks, and eventually gas rationing. Oil prices worldwide were at a new high; they went from five dollars a barrel to nearly thirteen dollars (Shwadran 1). The oil embargo lasted for five months, altered modern economics and political history, and caused a U.S. recession. For the first time in history the OPEC nations had more control over the industry than the oil companies, and they used this control as a political weapon. Most of all, the oil embargo revealed the United States' incredible dependence on Arab oil.

The 1973 October War ended on October 25th and Israel was victorious once again. The oil embargo against the United States lasted until March 18th and Saudi Arabia insisted the embargo be lifted without conditions. The United States and Saudi Arabia had reached an agreement that if Saudi lifted the embargo, the United States would help to modernize Saudi, which now had plenty of money to spend (Stork 224). The oil embargo left OPEC countries in control of oil producing operations and the OPEC countries worked together to set price standards for oil. This resulted in an enormous increase in revenue for oil producing countries. For example, in 1973 the Saudi oil revenue was \$6.4 billion, and in 1975, the Saudi oil revenue was \$27.7 billion (Cleveland 383). A year after the embargo, United States-Saudi relations were stronger than ever because of their strong economic ties and the United States dependence on oil.

LESSON PLANS

Lesson Plan One: Why Are We Dependent on Oil?

Objective

The students will be able to explain the social and economic impacts of the oil industry.

Materials and Resources

The teacher will need to print and cut strips of facts and illustrations related to oil and life before and after oil dependency and put them into plastic baggies. The teacher will need large sticky notes for students to brainstorm ways that they use oil or oil products in their everyday lives, as well as for students to hypothesize about how their lives will change once this nonrenewable energy source runs out. Teacher will also need the documentary *A Crude Awakening: The Oil Crash*.

Procedures and Activities

Teacher will hand out a plastic baggie filled with strips of paper that have facts and illustrations about life with and without oil. Teacher will give one baggie to groups of four students. Teacher will ask students to organize the strips of paper into two groups. The teacher does not tell the students how they should group the strips – students must decide on their own what criteria they will use to separate the papers. The handouts should include things such as a picture of a car, a horse drawn carriage, a tractor, an ox driven cart, a computer, a pen and paper, a refrigerator, a description of someone dehydrating meat, an air conditioner, a hand held fan, the cost of a barrel of oil in 2008 (\$150), the cost of a barrel of oil in 1973 (\$2.74), the amount of cars produced in the United States in 1900 (4,000), the amount of cars produced in the United States in 1910 (187,000), the amount of cars produced in the United States in 2008 (7.1 million), the number of barrels of oil consumed for transportation fuel in the United States in 2006 (10.2 billion), the hours of physical labor of one man to produce the same amount of energy contained in one barrel of oil (25,000), and the cost of extracting one barrel of oil from the ground in Iraq (\$1). Students

will separate these items into two groups and will then explain to the class the criteria they used for creating the two different groups.

After students have come to the conclusion that we are dependent on oil in our everyday lives, students (in their groups of four) will brainstorm and list on large sticky notes ways that oil or products made with oil affect their everyday life. Students will share their findings with the rest of the class.

Teacher will then show the first twenty-five minutes of the documentary *A Crude Awakening: The Oil Crash* to the class. This documentary describes in detail all of the products we use that need oil for their production, including the food we eat, the clothes we wear, cosmetics, transportation, and electricity. After watching the movie clip, students will add to their previous list anything that was mentioned in the movie that they had not listed earlier. Students will recognize how oil affects their everyday lives.

Teacher should discuss with students that oil is a nonrenewable energy source, and that one day oil supplies will run out. As a class, students should hypothesize how life would be different if oil were to run out tomorrow and what steps we as a society should start doing to prepare for the day that it happens.

Assessment

Students will write a one-page reflection on how we are dependent on oil. Students should focus on how they use oil in their everyday life to make it personal for them. Students should also reflect on what life was like before oil and how it might change after we run out of oil. The teacher can grade this reflection for thoughtfulness, accuracy, the use of proper grammar, and thoroughness.

Lesson Plan Two: What is Oil?

Objectives

The students will be able to analyze the effects of scientific discoveries such as oil and gas, and interpret data about geographic distributions.

Materials and Resources

The teacher will prepare a PowerPoint presentation about the geological and chemical aspects of oil. The PowerPoint presentation should include what oil is made of, how it forms, where it forms, and the different kinds of reservoirs where oil gets trapped. The PowerPoint should also include a map that shows which countries in the world have the largest oil reserves, as well as a map that shows the countries that are the highest consumers of oil (such as the United States, Japan, China, Germany, and Russia). The PowerPoint can also include information about how oil is drilled, onshore and offshore, and how the refining process works. The teacher should make a handout for students that has the basic information from the presentation in bullet form for the students to use as a reference. The teacher will want to have paper and art supplies and examples of informational tri-fold brochures for students.

Procedures and Activities

The teacher will present the PowerPoint presentation to students. While watching and listening to the PowerPoint, students should take notes about the presentation on the handout that was given by the teacher. The handout should have the basic information, and students can fill in the details during the PowerPoint.

Students will use the information they learned in the presentation, as well as their notes, to create an informational tri-fold brochure about the geology and chemistry of oil. The brochure should have a title page that includes their name, the title of their brochure, and an illustration that

represents the oil industry. The tri-fold should include the information learned in the presentation including how oil is formed, where oil is found, which countries use and produce oil, and information about the drilling and refining process. Student tri-folds should include illustrations to support the facts presented.

Assessment

The tri-fold brochures can be assessed based on the following criteria: craftsmanship, accuracy, the use of proper grammar, thoroughness in detail, inclusion of relevant illustrations, is informative, and for quality.

Lesson Plan Three: Spindletop

Objective

The students will be able to identify the effects of Spindletop and describe a defining era in Texas History.

Materials and Resources

Teacher should provide the students with copies of different first and second hand accounts of the Spindletop gusher. For example, this is an excerpt from Rupert Richardson's *Texas: The Lone Star State* that could be one of the accounts given to students to read:

The discovery of oil on January 10, 1901, was on Spindletop Hill south of Beaumont. The well, drilled by Captain Anthony F. Lucas, began spewing oil more than 100 feet in the air. Before it was finally capped, the gusher roared out with nearly one-half million barrels of oil, and a new age in Texas was at hand. At least two giant oil companies and many smaller ones were born out of the Spindletop boom. Oilmen began to search for discoveries in other parts of the state, and refining and marketing operations were soon providing jobs and profits for Texans. (331)

Another example could be found in James Haley's *Passionate Nation: The Epic History of Texas*:

It was 10:30 a.m., January 10, 1901, the tenth day of the new century. The ground shook, and roughnecks working the rig fled for their lives as six tons of four inch pipe began shooting javelins out of the well, shattering the crossties of the rig. There was an explosive eruption of mud and rocks and natural gas, and after a few moments of pregnant silence, a geyser of greenish-black crude oil shot out of the hole, topping the derrick by more than a hundred feet and falling back to earth like rain. Texas tea had arrived. (444)

Bryan Burrough's book *The Big Rich* has a very detailed account of what the initial eyewitnesses Curt and Al Hamill and Peck Byrd first saw the day that Spindletop erupted:

As the Hamills watched, dumbstruck, reddish brown drilling mud began to bubble up from the hole, slowly at first, then faster, till the entire drilling platform was awash. With the rush of mud came a hissing sound, then a gurgling, as if some giant beast below was spitting up. Beneath them the Big Hill began to rumble. The flow of drilling mud began to jump and leap creating a fountain right there in front of them. Then, suddenly, the fountain exploded, an eruption of mud that shot straight up into the morning sky high above the derrick. (2)

It is important that the teacher provides the students with many different accounts of the Spindletop gusher, including eyewitness accounts and pictures. There should also be information presented to students that will give them a sense of what happened as a result of the find, including new oil companies coming to Texas, wildcatters starting to look for oil and economic

changes brought about because of the discovery of the Spindletop reserve. The teacher will also need paper and art supplies for students.

Procedures and Activities

Students will read many different accounts of what happened the day that Spindletop erupted, as well as how Texas changed as a result of the discovery. Using the information that they learned through the different readings and pictures they have seen, students will create a newspaper article reporting their findings. The students will create the front page of a newspaper, and their newspaper should include the name of the newspaper, the date, the title of the article, an article, and an illustration. The article should include details about the Spindletop discovery, the day the gusher erupted, and how Spindletop changed the economic and social climate of Texas in the early 1900s. The newspaper article that the students write should include data, facts, and quotes from the readings provided, as well as citations.

Assessment

The student newspapers can be graded based on the following criteria: craftsmanship; historical accuracy; use of proper grammar; inclusion of eyewitness quotations; proper citation of sources; inclusion of details about the discovery, the actual gusher, and the effects on Texas; relevant illustration; and quality.

Lesson Plan Four: The Oil Embargo of 1973

Objectives

Students will be able to analyze the political, economic, and social impact of major wars and the oil industry. Students will be able to analyze how technological innovations, such as oil, have resulted in interdependence among Texas, the United States, and the world.

Materials and Resources

The teacher will need a way to introduce the conflict to the students and explain why there was an oil embargo, either through a reading, a lecture, or a PowerPoint presentation. The teacher will also need to provide background information/handouts or a way for students to research on their own – either books or computers with internet. The teacher might also want to give students placards with their country names.

Procedures and Activities

This activity will take two-three class periods. The first class period, the teacher will introduce this era in history. The teacher needs to inform the class of the basics of this conflict/crisis. The teacher will ensure that students know about the Arab-Israeli conflict, what OPEC is, as well as the oil embargo that was placed by the Arab countries of OPEC on the United States and the Netherlands. The teacher will then assign students a country that participated in or had vested interest in the October War and/or the Oil Embargo of 1973, and the student will research that country's involvement. The second- third class period, the students will simulate a summit/debate with the countries involved and try to come to a solution. The students will imagine that they are in a summit during the crisis in October 1973 and will debate with the other countries involved to try to come to a resolution of the incident. During the summit, students will represent the voice of the countries involved. Students will not be voicing their own personal opinions; rather they will be a delegate representing a specific country and must voice the opinion of that respective country. In order to do this, students will have to research and find out the opinions and interests of the country they are going to represent. The teacher should have two students represent each of the following countries: the United States, Israel, Saudi Arabia, Iran, Iraq, Netherlands, Kuwait, Syria, Jordan, Egypt, Palestine (this is not technically a country, but it would be

beneficial for students to represent the interest of these people), the Soviet Union, Russia, Lebanon, Japan, Germany, China, and Britain.

Either the teacher can give students a handout with this information, or students can research to find out the following: what their country's involvement was in the conflict, the country's vested interest, what outcome they are hoping for, who their allies are, who their enemies are, and potential solutions that would benefit their country.

Students should turn their research into a position paper that is three paragraphs long. The first paragraph should include the basic information about how their country is involved in the situation. The second paragraph should include what their country thinks about the situation, and what they would like to happen. The final paragraph should include some ideas their country has for a solution. This position paper should guide their discussion during the summit and act as their culminating research tool. If students are nervous speaking out loud, they can read from this paper during the debate.

The goal of the summit should be for students to come up with a resolution that satisfies all of the countries involved. While trying to reach this resolution, students will realize how different each country's goals are. Encourage students to revise their resolution until most countries are satisfied.

Assessment

The position paper can be graded for historical accuracy, grammar, and thoughtfulness of ideas presented. The teacher may also grade students during the summit on their participation and can give extra points to students who are particularly helpful and thoughtful in the resolution created by the class.

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