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| **Natural Gas in Arkansas WEB Quest Tasks**  **Task 1: What is Natural Gas?**  Go to: <http://www.energyfromshale.org/hydraulic-fracturing/shale-gas> and review the poster titled, “What is Natural Gas?”  Complete the following:   1. What is natural gas? 2. What are the 4 primary gasses that make up natural gas? 3. Name four ways natural gas in used?   **Task 2: Why is Natural Gas Production Important to Arkansas?**  Go to: <http://www.aipro.org/EconomicImpactStudy.pdf> Complete the following:   1. In 2008, there were \_\_\_\_\_\_\_\_\_\_\_\_employees working in \_\_\_\_\_\_\_\_\_\_oil and gas industry establishments in Arkansas. 2. The average annual pay for the oil and gas industry was $\_\_\_\_\_\_\_\_\_\_\_ in Arkansas in 2008 while the annual average for the state was $34, 909.00. 3. How much severance tax revenue did Arkansas collect from natural gas during the first half of 2009?   Go to: <http://www.aipro.org/AIPROfactsheet2010.pdf>  Complete the following:   1. In 2008 the market value of oil and natural gas produced in Arkansas was **greater than** the combined market value of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.   **Task 3: What is shale and why is it Important?**  Go to: <http://www.kidsloverocks.com/html/types_of_rocks.html>  Find the following:   1. Is shale an igneous, metamorphic or sedimentary rock? 2. Sedimentary rocks are formed at the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, either in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. They are layered accumulations of sediments—   fragments of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ material.  Go to: <http://www.shaletec.org/whatis.htm> Find the following:   1. Shale gas refers to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that is trapped within shale formations. Shales are fine-grained \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that can be rich resources of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Sedimentary rocks are rocks formed by the accumulation of \_\_\_\_\_\_\_\_\_\_\_\_ at the Earth's surface and within bodies of water. Common sedimentary rocks include sandstone, limestone, and shale.   Go to: <http://lingo.cast.uark.edu/LINGOPUBLIC/about/index.htm>  Complete the following:  1. The Fayetteville Shale is a deposit of sedimentary shale rock formation. The Fayetteville Shale play stretches across Arkansas from approximately \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ east to beyond \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, Arkansas. The Fayetteville is approximately \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ wide and is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_feet deep. *A single mile is 5,280 feet.*  **Task 4: What is fracturing?**  Go to: <http://ngm.nationalgeographic.com/2013/03/bakken-shale-oil/fracking-animation-video> and watch the National Geographic Video, “What is Fracking.” This video gives a brief overview of fractured drilling in South Dakota.  Go to: <http://issuu.com/aipro/docs/arkansasoilandgasbook> and read about hydraulic fracturing on pages 6 and 7.  Complete the following:   1. What is in fracturing fluid? 2. Does hydraulic fracturing cause earthquakes in Arkansas? Explain your answer. 3. Is hydraulic fracturing safe? Explain your answer. 4. What are the four benefits of horizontal drilling and hydraulic fracturing?   **STUDENT ASSESSMENTS:**  **Natural Gas in Arkansas WEB Quest**  Assessment #1:  Go to: <http://walrus.wr.usgs.gov/ask-a-geologist/>  After completing this web quest each student will compose a question to ask a geologist to extend their knowledge. The response must be printed and turned in as an assignment. Students will receive an answer within 4 days and will share with the rest of the class.  Assessment #2:  Students will complete a persuasive essay from the viewpoint of the natural gas industry explaining why Arkansas should continue drilling for natural gas using the current technologies. |