



NEBRASKA STATE GEOINQUIRIES

A CRUDE AWAKENING? NEBRASKA AND THE KEYSTONE XL PIPELINE

Summary: The proposed Keystone XL pipeline is intended to rapidly transport petroleum from oil fields in Canada to American refineries. Supporters of the pipeline contend it will increase oil production and improve global trade while opponents are concerned about potential negative environmental impacts such as oil spills and water pollution. As such, the Keystone XL pipeline has become controversial and is a major political issue between people focusing on economic issues and people focusing on environmental issues.

Nebraska State Social Studies Standards

This activity has been designed to meet the following Nebraska State Standards...

Primary:SS HS.2.1.a Make decisions by systematically considering alternatives and consequences through the use of cost benefit analysis.

Secondary:SS HS.2.6 Explain how economic institutions impact different individuals and various groups.

Lesson Objectives:

By completing this activity students will have the ability to...

- *Explain the economic and environmental impacts of the Keystone and proposed Keystone XL pipelines*
- *Evaluate the arguments in favor of the proposed Keystone XL pipeline*
- *Evaluate the arguments against the proposed Keystone XL pipeline*

Map URL: <https://arcg.is/1COWKn0>

Activity:

Follow these steps to complete the Geoinquiry



= A Mapping function students will need to complete



= A piece of information or background students will need to know



= A question, or set of questions, for students to answer

Ask a Question: *What is the Keystone Pipeline?*



Click the link above to launch the map.







= In Canada's Northwest, large amounts of oil (the second largest oil field in the world) is trapped in thick layers of sand. In the mid-2000s, prices for gasoline were at an all-time high which made processing of the oil sands profitable. Supporters of oil sands production say this oil will provide large quantities of oil to the global market; critics note that this processing is far more damaging to the environment than standard oil production.







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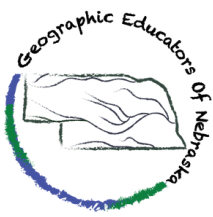
-  Click on the thick magenta line of the Keystone Pipeline and read the popup.
-  What is the Keystone Pipeline and what is its purpose? [Answers will vary, but should include oil sands from Canada being transported to Texas for refining.]
-  Click on the Measure tool on the Toolbar, Click on Distance (2nd option), and measure the Pipeline from Hardisty, Alberta to Steele City, Nebraska, tracing the path of the pipeline, clicking at each point on the pipeline.
-  About how long is the pipeline from Hardisty, Alberta, Canada terminal to the Steele City, Nebraska, USA terminal? [About 1,410 miles / about 2,270 kilometers]

Collect New Information: *What are some possible benefits of the proposed Keystone XL Pipeline?*

-  In the content menu on the left side of the map, click the check box next to Original Keystone XL Proposal.
-  Open the Keystone XL proposed route's popup by clicking on the dashed line of the proposed route. Click the link in the popup to read the Keystone XL Project Overview.
-  According to the website, what are some benefits TransCanada says the Keystone XL pipeline will give? [Answers will vary, but should include property taxes paid, more jobs, and safely transporting energy]
-  According to the website, how long is the distance from Hardisty, Alberta, Canada terminal to the Steele City, Nebraska, USA terminal using the proposed Keystone XL Pipeline? How does this compare to the distance to Steele City using the original Keystone Pipeline? [About 1,210 miles / About 1,950 kilometers; KXL is about 200 miles / 320 kilometers shorter]

Analyze for Trends and Patterns: *Where does the proposed Keystone XL Pipeline cross in Nebraska?*

-  In the content menu on the left side of the map, check the box for the layers Nebraska Sand Hills and High Plains (Ogallala) Aquifer.
-  Click the Nebraska Sand Hills layer and read the popup, clicking on the link for more information.
-  Click the High Plains (Ogallala) Aquifer layer and read the popup, clicking on the link for more information.
-  How would you describe the Sand Hills and the Ogallala Aquifer? [Answers will vary, but may include many species of plants, large water supply for drinking and for farmland, etc.]



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Share what You Have Found: What are some possible drawbacks of the proposed Keystone XL Pipeline?

? Predict some possible drawbacks of transporting crude oil cross-continent. [Answers may vary, but may include high expense, chances for oil spills and leaks, etc.]

🌐 In the content menu on the left side of the map, check the box next to the Keystone Leaks layer to turn it on.

🌐 Click on Bookmarks and click on the bookmark labeled Northern Spills. Click on a few Keystone Leaks to read more information about them in the popups. Click on the Central and Southern Spills bookmarks also; click on other leaks.

🌐 Click on the Keystone Leaks layer title to open the options menu. Click on the second option Show Table. This shows a table of all information on this layer.

? How many leaks did the original Keystone Pipeline have since 2010? [21].

? What are some potential environmental and economic problems that would result in a large oil spill or leak on the Keystone XL Pipeline? [Answers may vary, but may include damage to plant life, drinking water contamination, farm water contamination, high cost of cleanup, etc.]

Develop an Action Plan: What course of action would you suggest with the Keystone XL Pipeline?

🌐 Click on Bookmarks and click on the bookmark labeled Nebraska.

🌐 Click the box next to the Original Keystone XL Proposal layer to turn it off.

🌐 Click the box next to the layer Altered Proposed Keystone XL Route in NE to turn it on.

? What does the Altered Keystone XL Pipeline appear to be attempting to avoid? Does it? [The Sand Hills and the Ogallala Aquifer]

📖 = Click on this link to discover some benefits of the Keystone XL Pipeline: [5 reasons to support TransCanada's Keystone XL](#). Click on this link to discover some drawbacks of the Keystone XL Pipeline: [Problems With the Keystone XL Pipeline - Nature and Environment - MOTHER EARTH NEWS](#)

? Considering the costs and benefits of both sides of the argument, would you support or oppose the Keystone XL Pipeline? Why? [answers may vary] Consider contacting your state representative to voice your opinion on the Keystone Pipeline (see below for Nebraska legislature information)!

Sources and Additional Readings:

Be sure to check out these resources to learn more.

- <https://www.keystonexl.com/>
- <https://www.nrdc.org/stories/what-keystone-pipeline>
- <https://nebraskalegislature.gov/>

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