Laarman Lesson Plan

Class: Earth Science Unit: Earth’s Resources Standards: ESS3-6

Topic: Keystone Pipeline Date: 2/13/17

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| **Objective** | Students will learn to analyze both sides of an argument and make conclusions based on evidence and scientific thinking, not previously-held bias. |
| **Procedure** | 1. Students set up note sheet with three columns: “neutral facts,” “arguments for,” and “arguments against.” 2. Introduce energy-related controversies: Keystone XL pipeline    1. Read overview at <http://www.bbc.com/news/world-us-canada-30103078> 3. Dakota Access Pipeline: <http://www.bbc.com/news/world-us-canada-38924160> and <http://www.bbc.com/news/world-us-canada-37863955> |
| **Closure** | Class debate: Pipeline or not? |

Topic: Fracking Date: 2/14/17

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| **Materials, Prep** | Fracking opinion articles |
| **Anticipatory Set** | 1. Introduce fracking issue: natural gas burns cleaner than other common fossil fuels, but the practice of fracking is raising concerns 2. View fracking videos:    1. <https://www.youtube.com/watch?v=WP5wSfD0fk4>    2. <https://www.youtube.com/watch?v=2AnUq3L1PzU> |
| **Procedure** | Students, as a class, read op-ed pieces on both sides of the fracking issue and summarize key points   1. <http://www.usatoday.com/news/opinion/editorials/2011-06-06-Josh-Fox-Ban-fracking-now_n.htm> 2. <http://usatoday30.usatoday.com/news/opinion/editorials/2011-06-06-Our-view-Fracking-with-care-holds-key-to-energy-future_n.htm> |

Topic: Issue Analysis Date: 2/15/17

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| **Materials, Prep** | Issue position paper rubric, computer cart, research graphic organizer. |
| **Anticipatory Set**  **-connection, motivation, relevance** | 1. Students summarize arguments on both sides of Keystone XL pipeline and fracking controversies.  2. Sand farming in Wisconsin for fracking: <http://www.cbsnews.com/news/fracking-debate-turns-to-wisconsin-as-sand-mining-for-drilling-booms/> |
| **Procedure** | 1. Introduce paper: students choose one issue (Keystone XL or fracking) and write a position paper. 2. Students begin research, filling in graphic organizer as they go. |

Topic: Issues Paper Research Date: 2/16/17

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| **Materials, Prep** | Computer cart |
| **Procedure** | Students have class time to conduct research for their papers. |
| **Homework** | Paper outline due Friday! |

Topic: Issues Paper Research Date: 2/18/17

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| **Materials, Prep** | Computer cart |
| **Procedure** | Students have class time to conduct research for their papers. |
| **Homework** | Paper due Tuesday! |