**Lesson Overview**

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| **Grade:** 8th | **Subject:** Advanced Physical Science | | **Classroom Demographics:** Advanced |
| **Topic(s)/Concept(s):** Evaluating the strength of an argument involving global warming and methane production. | | **Lesson Timeframe:** 55 minutes  **Placement within Unit:** End of the unit. | |
| **Necessary frontloading from previous lesson (vocabulary and conceptual information):** Students need to understand how molecules form and interact within the atmosphere. They need to know what methane is composed of and that it is considered a greenhouse gas. They also need to understand how concentration of a substance can determine its effect on the environment. | | | |
| **CCSS: (Grade 8)**  RST.8.1 Cite Specific textual evidence to support analysis of science and technical texts.  RST.8.2 Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.  SL8.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher led) with diverse partners on *grade 8 topics,* *texts, and issues,* building on others’ ideas and expressing their own clearly.   1. Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.   SL8.2. Analyze the purpose of information presented in diverse media and formats (e.g., visually, quantitatively, orally) and evaluate the motives (e.g., social, commercial, political) behind its presentation.  SL8.3. Delineate a speaker’s argument and specific claims, evaluating the soundness of the reasoning and relevance and sufficiency of the evidence and identifying when irrelevant evidence is introduced. | | | |
| **PARCC Assessment Standards:**  SL8.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher led) with diverse partners on *grade 8 topics,* *texts, and issues,* building on others’ ideas and expressing their own clearly.   1. Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.   SL8.2. Analyze the purpose of information presented in diverse media and formats (e.g., visually, quantitatively, orally) and evaluate the motives (e.g., social, commercial, political) behind its presentation.   1. SL8.3. Delineate a speaker’s argument and specific claims, evaluating the soundness of the reasoning and relevance and sufficiency of the evidence and identifying when irrelevant evidence is introduced. | | | |
| **Essential Questions:**   1. Why is it important to recognize the difference between argument and persuasion within a scientific concept? 2. How does an author use claims and proofs to structure his/her argument? 3. Does the use of claims and proofs strengthen the author’s scientific argument? | | | |
| **Text(s):**  **-**Pollution-BioEthics Education Project <http://www.beep.ac.uk/content/221.0.html>  **-** Eating less meat and dairy products won’t have a major impact on global warming. <http://tinyurl.com/mfuo2zh> | | **Other Materials Needed:**  -Projector  -Internet Access  -Computer  -Pens/pencils/highlighters | |
| **Lesson Resources:**  -Video #1 The Ozone Layer- The Children of Tomorrow <http://youtu.be/JwO8w9Ku-g0>  -Video #2 Global Warming Commercial <http://youtu.be/hAqnihFm3bk>  -Video #3 An Awareness for Global Warming <http://youtu.be/Zib_T2SvnyA>  -Video #4 Global Warming Facts <http://youtu.be/ROZJmX73FF4>  -Claims and Proof T-Chart (see Graphic Organizers) | | | |
| **Lesson Breakdown:**  10 minutes: Reviewed first two video clips and modeled my scientific thinking. Identified if they were more persuasive or argumentative in nature.  15-20 minutes: Have students review the next two clips. They filled out the claims/proofs T-chart and had time to collaborate after each one.  10-15 minutes: Have student evaluate the articles. I split the class to where half the groups got one article and the other half got the second article. They filled out the claims/proofs T-chart and had time to collaborate.  10 minutes: Group discussion and closure. | | | |
| **Assessment for Understanding:** Walked around the room and monitored the status of the class. Checking in with a few groups and asking them about their thoughts. I then checked their T-Charts for understanding of the process. | | | |
| **Lesson follow up in succeeding lesson (further assessment, i.e. writing, research):** Have student groups present their findings on the articles from the previous days. They will use a large piece of post-it paper and to show how the claims and proofs are connected in the articles. They will also evaluate and write a conclusion for both articles detailing if the author supported their overall claim effectively. The groups will hang the posters around the room and the students will perform a gallery walk. They will tour each poster and see what the rest of the groups thought about the articles. | | | |