

EXPLORING THE THREE MAIN CLIMATE DRIVERS IN SNC 2P

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This activity was developed for the Earth and Space Science strand (Earth's Dynamic Climate) of the grade 10 Science, Applied course. It was designed to identify the principal components of Earth's climate system (sun, oceans, atmosphere and topography of land masses) and to create links between human and natural factors and their impact on climate change and global warming. When developing this activity, I was trying to make the topic of climate change more engaging to students. I wanted them to create their own knowledge and make connections between the many variables involved.

Introduction to the unit

The unit was started by viewing a video of Donald Trump that showcased his opinion on the topic of climate change. Students were then asked if they agreed with Trump's views. A classroom discussion about climate change followed where students presented their opinion on climate change. Since climate change is an ever-present topic in the news, students come to the classroom with significant prior knowledge about this issue. To explore their prior knowledge, poster paper was displayed around the classroom with the following headings:

- What is climate change?
- How do we know climate is changing?
- What affects the climate?
- What are the impacts of climate change?

Students were provided with post-it notes and were asked to write down what they knew about each of these questions and to post their response on the proper poster. This activity highlighted the many misconceptions students have about climate change and helped in the discussions later in the unit.

Explanation of the Activity

In groups of two or three, students were asked to pick one of the seven guiding questions for climate drivers (see attached worksheet). Students needed to research and plan an experiment that would answer their assigned question. They also needed to determine the relationship between the variables they were studying and describe how it related to climate. In order to accomplish this, students were provided with two class periods: a day to research and a day to conduct their experiment and determine the relationship. On the third day, students presented their findings to their peers in an informal setting. Their presentation needed to include a description of their experiment, the variables studied, the relationships between the variables and the links to climate or climate change. A class discussion followed each presentation and the main ideas were identified and included in a Google document to share with the students. To ensure students had a proper understanding of the content, review questions were assigned that covered all the presentations done.

Student Feedback

Many students commented that they enjoyed this way of learning. They enjoyed the multiple demonstrations and the hands-on approach. It helped them create links in their learning and made it easier for them to remember the many relationships. Some students were concerned about the absence of teacher handouts (notes). However, the document created highlighting the main ideas and their links to climate helped them structure their learning.

Post-Activity Reflection

Overall, this activity was well received by the students. They enjoyed this new approach to learning. It did help students create meaningful relationships between the many climate drivers. As a teacher, I've also quite enjoyed this experience. It was fun to see students so excited about developing and conducting an experiment. It was rewarding to see the students create their knowledge and making links for themselves instead of simply being receivers of information. The climate change unit was perfect for this as the experiments are simple and safe, and the content is not overly difficult.



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RESOURCES

- Presentation Summary (https://connex.stao.ca/sites/default/files/climate_drivers_summary_2.docx)
- Original activity handout (https://connex.stao.ca/sites/default/files/guiding_questions_for_3_main_climate_drivers_2.doc)
- Review Questions (https://connex.stao.ca/sites/default/files/climate_drivers_review_questions_3.doc)
- Brainstorming activity (https://connex.stao.ca/sites/default/files/image1_2.jpg?width=1632px&height=1224px&iframe=true)
- Sample Experiment (https://connex.stao.ca/sites/default/files/image3_1.jpg?width=1632px&height=1224px&iframe=true)
- Research Day (https://connex.stao.ca/sites/default/files/image4_1.jpg?width=1632px&height=1224px&iframe=true)
- Sample student response (https://connex.stao.ca/sites/default/files/image7_1.jpg?width=1632px&height=1224px&iframe=true)
- Sample Experiment (https://connex.stao.ca/sites/default/files/image5_1.jpg?width=1632px&height=1224px&iframe=true)
- Sample Experiment (https://connex.stao.ca/sites/default/files/image6_1.jpg?width=1632px&height=1224px&iframe=true)

ELEMENT

- Inquiry (/expert-elements/inquiry)



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