

## Guided Module on Earth Science

This completed activity sheet demonstrates the use of research, writing, and learning skills in analysing concepts associated with the topic of atmospheric pressure and earthquakes

**Subject / Course:** Earth and Space Science / SES4U

**Grade Level:** Grade 12

**Topic:** The complementary nature of atmospheric parameters and the 2010 Haitian Earthquake

**Specific Curriculum Expectations Met:**

- A1.8 synthesize, analyse, interpret, and evaluate qualitative and quantitative data; solve problems involving quantitative data; determine whether the evidence supports or refutes the initial prediction or hypothesis and whether it is consistent with scientific theory; identify sources of bias and/or error; and suggest improvements to the inquiry to reduce the likelihood of error
- A1.9 analyse the information gathered from research sources for logic, accuracy, reliability, adequacy, and bias
- A1.10 draw conclusions based on inquiry results and research findings, and justify their conclusions with reference to scientific knowledge
- F1.1 evaluate the accuracy and reliability of technological methods of monitoring and predicting earthquakes, tsunamis, and volcanic eruptions [AI, C]
- F2.5 locate the epicentre of an earthquake, given the appropriate seismographic data (e.g. the travel-time curves to three recording stations for a single event) [AI]

**Required Resources:**

- Data projector
- Guided module
- One copy of the Journal *Complementary nature of surface and atmospheric parameters associated with Haiti earthquake of 12 January 2010* per student
- One copy of the student assignment that accompanies the article per student
- Instructor solutions

**Content and Teaching Strategy of Lesson:**

- **Overview:** Introduce concept of Journal Articles to students
- **Teaching Strategies:**
  1. Guide students through the “How to Effectively Use a Journal Article” PowerPoint Presentation – provide students with an opportunity to practice paraphrasing
  2. Walk students through the Guide to University Learning to facilitate effective reading strategies
  3. Students read the article *Complementary nature of surface and atmospheric parameters associated with Haiti earthquake of 12 January 2010* and respond to questions in handout
- **Consolidation:** Students review answers with each other and instructor; share paraphrasing strategies; connect content in research article with scientific investigation skills and their current understanding of earthquake predictions

**Title of article analysed:** Singh, R.P., Mehdi, W. & Sharma M. (2010). *Complementary nature of surface and atmospheric parameters associated with Haiti earthquake of 12 January 2010. Natural Hazards and Earth Systems and Science, 10,1299-1305.*

The goal of this exercise is to highlight and demonstrate the transition in Research, Writing and Learning Skills that a student might encounter during the transition from high school to post-secondary education.

*We have provided all the necessary links to the activity on this site. This activity is to be used in conjunction with the downloadable [student template](#)*

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### **Step 1. Getting the Article**

- a) Go to the [research module](#) in order to gain access
  - b) Type in the search terms “Haiti” AND “atmospheric”
  - c) Select above article
- Or
- a) Go to the [Directory of Open Access Journals](#) and select find articles
  - b) Type in the search terms “Haiti” AND “atmospheric”
  - c) Select above article

### **Step 2. Reading the article**

- a) Reading material, highlighting and taking good notes are important skills required in post-secondary education. In order to get an idea of what is required of your students, take them through our [Guide to University Learning activities](#) .

### **Step 3. Filling out the student template**

- a) Plagiarism concerns are highlighted in this exercise. In order to address this concern, take your students through the [Paraphrasing exercise](#).

For a complete solution of this module please email: [learning@uoguelph.ca](mailto:learning@uoguelph.ca)