

## **Math Final Summative Experiential Exam**

### **Objective:**

**To use mathematics to form an argument about the impact of human activity on the environment.**

### **Guiding question:**

How do we get our voice heard? Is it best through language, science or math?

### **Area of Interaction:**

Environment  
Health & Social Education  
Approaches to Learning

### **Task:**

Collect environmental data, presumably from the websites provided, and process it using scatter plots (and other types of graphs), best fit line, correlation coefficient, chi<sup>2</sup> test, and use knowledge of lines to make predictions of the future based on current data. This information should then be published in a format which is useful for the trial we will be having on Friday. At the end of the experience, you should write a final reflection about your work in mathematics for the trial.

### **Resources:**

Some data sources:

<http://www.iaea.org/inisnkm/nkm/aws/eedrb/data/DO.html>

[http://www.paho.org/english/dd/ais/cp\\_214.htm](http://www.paho.org/english/dd/ais/cp_214.htm)

<http://epi.yale.edu/Countries/DominicanRepublic>

<https://www.cia.gov/library/publications/the-world-factbook/geos/dr.html>

Official data from UN:

<http://unfccc.int/resource/docs/natc/domrepnc1.pdf>

<http://www.cep.unep.org/about-cep/spaw/marine-ecosystem>

### **Evaluation:**

Criterion A: Knowledge and understanding

**0** - The student does not reach a standard described by any of the descriptors given below.

**1 or 2** - The student attempts to make deductions when solving simple problems in familiar contexts.

**3 or 4** - The student sometimes makes appropriate deductions when solving simple and more-complex problems in familiar contexts.

**5 or 6** - The student generally makes appropriate deductions when solving challenging problems in a variety of familiar contexts.

**7 or 8** - The student consistently makes appropriate deductions when solving challenging problems in a variety of contexts including unfamiliar situations.

#### Criterion C - Communication in Mathematics

**0** - The student does not reach a standard described by any of the descriptors given below.

**1 or 2** - The student shows basic use of mathematical language and/or forms of mathematical representation. The lines of reasoning are difficult to follow.

**3 or 4** - The student shows sufficient use of mathematical language and forms of mathematical representation. The lines of reasoning are clear though not always logical or complete.

The student moves between different forms of representation with some success.

**5 or 6** - The student shows good use of mathematical language and forms of mathematical representation. The lines of reasoning are concise, logical and complete. The student moves effectively between different forms of representation.

#### Criterion D - Reflection in Mathematics

**0** - The student does not reach a standard described by any of the descriptors given below.

**1 or 2** - The student attempts to explain whether his or her results make sense in the context of the problem. The student attempts to describe the importance of his or her findings in connection to real life.

**3 or 4** - The student correctly but briefly explains whether his or her results make sense in the context of the problem and describes the importance of his or her findings in connection to real life. The student attempts to justify the degree of accuracy of his or her results where appropriate.

**5 or 6** - The student critically explains whether his or her results make sense in the context of the problem and provides a detailed explanation of the importance of his or her findings in connection to real life. The student justifies the degree of accuracy of his or her results where appropriate. The student suggests improvements to the method when necessary.

