IB Math SL – Final Project **ENGINEERING DISASTERS**

**INTRO:**

As long as humans have been building, there have been engineering disasters. To learn from these mistakes, we need to study what went wrong in these disasters! Engineering failures can be the result of several factors such as: miscalculations, ethical decisions, inadequate design processes, political factors, negligence…

**PROCESS:**

You are to choose a disaster from the list below. You are to work in groups of 1-4 people to research your disaster and develop a presentation for the class. The presentation needs to provide thorough background information about the structure/project, information about the disaster itself. Be sure to discuss (at least):

*What failed, why it failed, & possible corrective actions. Who was at fault, and why. Your particular disaster may have ethical and/or political issues associated with it (or even some conspiracy theories). If so, discuss.*

The presentation should be roughly ***8-10 minutes-ish*** (including time for questions and discussion).

**FORMAT:**

* Present your findings in a suitable format. Pictures/models of the structure are often helpful to the overall understanding of the disaster. You can involve the class in your presentation by developing discussion questions.
* You will be self-grading your group as well as receiving a grade from the class and me.
* You will turn in your presentation (either hardcopy or electronic). You must include a bibliography of your sources. ***You must use at least three sources. TURN THIS IN TO ME, yo.***

**DISASTERS:**

* The Savar Building Collapse (2013)
* **Fukushima Reactor Meltdown (2011)**
* **Deepwater Horizon explosion (2010)**
* **Minneapolis I-35W bridge (2007)**
* New Orleans Levee System (2005)
* [Space Shuttle Columbia](http://en.wikipedia.org/wiki/Space_Shuttle_Columbia_disaster) (2003)
* **World Trade Center (2001)**
* **Concorde Air France Flight 4590 crash (2000)**
* **Eschede Train Disaster (1998)**
* [Space Shuttle Challenger](http://en.wikipedia.org/wiki/Space_Shuttle_Challenger_disaster) (1986)
* [Chernobyl](http://en.wikipedia.org/wiki/Chernobyl_disaster) (1986)
* Kansas City [Hyatt Reg. walkway collapse](http://en.wikipedia.org/wiki/Hyatt_Regency_walkway_collapse) (1981)
* Metrodome roof collapse (1980’s, etc)
* DC-10 Flight 191 (1979)
* [Three Mile Island accident](http://en.wikipedia.org/wiki/Three_Mile_Island_accident) (1979)
* [Citigroup Center](http://en.wikipedia.org/wiki/Citigroup_Center) (1978)
* **Banqiao Reservoir Dam (1975)**
* **Big Dipper Rollercoaster (1972)**
* Apollo 13 (1970)
* Cleveland East Ohio Gas Explosion (1944)
* [Tacoma Narrows Bridge](http://en.wikipedia.org/wiki/Tacoma_Narrows_Bridge_(1940)) collapse (1940)
* **Hindenburg disaster (1937)**
* St. Francis Dam Collapse (1928)
* [Boston molasses disaster](http://en.wikipedia.org/wiki/Boston_molasses_disaster) (1919)
* Titanic (1912)
* [Ashtabula River Railroad](http://en.wikipedia.org/wiki/Ashtabula_River_Railroad_Disaster) (1876)

**GRADING:** This project will be worth **ONE TEST GRADE** so make sure you do a good job!

**Group Evaluation** – you will rate the members of your group (including yourself) based on effort.

**Class Evaluation** – the class will rate your group based on clarity of your presentation and whether they learned from your presentation and “wow” factor.

**Teacher Evaluation** – I will rate your group based on thoroughness/accuracy of content/participation of the group/class engagement in the presentation, and the notes/bibliography that you will turn in to me. I will take into consideration the evaluations of your group members and the class in calculating your final grade.