**Ecology Project: How Does Human Activity Affect the Environment? (42 points)**

**You may work alone or with ONE other person.**

1. **Select a large scale human activity:**

Agriculture –monoculture Mining

Oil and Gas extraction Production of Nano particles

Water bottling plant Fish farming

Any Coal burning factory Any Factory dumping waste into nearby water

Proposed Site C Dam Clear cutting forests for pipeline development

Other

1. **Describe the Activity: (5 points)**
   1. Name the activity/industry (eg fracking)
   2. What product is produced/What resource is exploited/harvested? (oil extraction from ground)
   3. Where is this done? (Fort MacMurray, Northern Alberta)
   4. What type of companies do this? (Shell)
   5. Why is this done? (what is the driving need for this product. Eg oil and gas to power our automobiles, fish farming to feed growing populations)
   6. Who benefits from this activity? (people use gas to drive cars but a few people who own the companies get very rich from selling the oil)
2. **What is the effect on the environment? (13 points)** 
   1. What waste product(s) are created from this activity? (bitchumen)
   2. What happens to the waste? (released to atmosphere, dumped into streams, leached out of soil, water run off, landfill) (tailing ponds, CO into atmosphere)
   3. What type of ecosystem does this affect (ocean, rivers, soil, forests, atmosphere)?
   4. How is the ecosystem affected? (habitat/ food source depleted/damaged) Oxides released into atmosphere combines with other chemicals to produce acid rain. Habitat loss, surrounding water and soil contamination…)
   5. What organisms (plant/animal) are most affect directly?
   6. What organism are affected indirectly? (eg if all predators die, prey population will increase…different plant species may take over).
3. **What nutrient cycle is most affected (carbon, nitrogen, phosphorous, water)? ( 7 points)**
   1. Describe and Draw a balanced nutrient cycle, indicate sinks and stores. (5)
   2. With different colored arrows, indicate how the cycle is disrupted (movement of more/less nutrients and/or pollutants and what this causes) (2)
4. **Prediction: (3 points)**
   1. Describe what do you think will happen to the environment if the activity progresses at the same rate.
   2. Describe what you think the environment would look like if activity were to increase due to increased demand?
   3. How will the species in your scenario be affected?
5. **Solution: (5 points)**
   1. Can you come up with a better, more efficient or alternative method of producing/harvesting?
   2. Can you think of an alternative product?
   3. Do we even need this product?
   4. How have you benefitted (directly or indirectly) from this product?
6. **Cite your work (2 points)**
   1. Minimum of 3 sources (text books, magazines, websites –wiki is NOT a reliable source)
   2. If using a website, you may copy the URL.
   3. Use your own wording. No plagiarism.
   4. <http://www.easybib.com/> or any other cite machine
7. **Use complete sentences (except in diagrams) (3 points)**

**Self Assessment: (4 points)**

What I did well in this project:

What I could have done better:

How well I cooperated with my partner: poor 1 2 3 4 excellent

How well my partner cooperated with me: poor 1 2 3 4 excellent