## Earth and Space Science Final Project Description Investigating Human Impact on Earth’s Systems

## Essential Question: ​How have humans impacted Earth's systems, and what can be done to limit future impacts?

**Standard HS-ESS3-4:**

**Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.**

**Final Exam Project: Requirement for Creating an Interactive Website**

* + **Informational Website** 
    - **Introduction:** Introduce the topic (background information that describes/explains topic, introduction to challenges/issues/problems)
    - **Connections:** Explain the connections of your topic to the other spheres of Earth (hydrosphere, atmosphere, geosphere, biosphere)
    - **Human Impact:** Describe how this human activity is affecting your system/topic or causing it
    - **Impact on Maine’s Environment:** Describe how Maine’s environment is impacted by human activities associated with your topic.
    - **Possible Solutions:**
      * Describe **one** technological solution or idea for solutions for your topic
      * Identify the scientific knowledge and reasoning on which the solution is based
      * Describe how the technological solution functions and may be stabilizing or destabilizing the natural system
      * Describe that the solution comes from scientists and engineers in the real world who develop technologies to solve problems of environmental degradation
      * Include images if possible
    - **Pros and Cons of Solution:**
      * Describe the benefits of the solution to the problem
      * Describe the downsides, side effects, or negative implications of the solution to the problem
      * Include images if possible
    - **Examining Solution & Evaluating Refinements:** 
      * Evaluate or Refine a technological solution that reduces human impacts your system and how it might also impact other systems
      * Describe how the refinement will improve the solution to increase benefits and/or decrease costs or risks to people and the environment.
      * Evaluate the proposed refinement for:
        + Their effects on the overall stability of and changes in natural systems
        + Cost, safety, aesthetics, and reliability, as well as cultural and environmental impacts.
  + **Your Reflection on Your Research:** 
    - Why it is important for humans to be aware of this problem/issue?
    - What questions still need to be answered by science? Or could not be answered?
    - How aware do you think people are of this issue? Do you think people need to be made more aware of this?
    - What would you do if you had to “solve” this or make decisions about this issue/problem? What would you recommend to people?
    - How does your topic connect to the other systems/spheres of earth? What do these connections imply?