

Environmental Management Summer Assignment

I am very excited to meet you and help you better understand our environment, how it works and the consequences of our actions within it. As part of the requirement for this class you will be conducting your own research project with an environmental issue or concern. You will need to have a good understanding of the scientific method and peer reviewed science journals.

Over the summer you should consider possible research questions and experiments that you may wish to conduct that has an environmental issue or concern. The project follows many of the same guidelines and requirements as Science Fair Project, therefore **Science Fair is required** and counted as your Mid-Term grade. I have listed possible topics but it is not limited to this list. Please do not start the project over the summer as we will discuss more in depth upon our return from summer break.

Over the summer please read the attached peer reviewed science journal articles (6 total) and complete the following questions for each article (6 total) to the best of your ability, this is due at the start of our first class.

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List of possible investigations for project proposals in Environmental Management

Soil

- Soil pH and plant growth
- Soil-less culture different materials (coffee grinds, teabags, hydroponics) maybe work with those at ECHO???
- Composting effect on food
- Biodegradable? Test different materials
- Effect of nitrate levels on plants (water or land pollution)

Diversity

- Invasive species (succession, impact)
- Carbon footprints
- Climate change
- Distance from roads and pollution/effect on bird diversity/ wildlife/ plant growth ect)
- Impact of tourism on an ecosystem (trash footprint)
- Biodiversity- effects of urbanization/ roads/ road kill ect

Air

- Air studies comparing particles (maybe during rush hour and off hours, city and state average)
- Biofuels
- Green detergents- do they affect plants less than normal ones?

Plants

- Sunscreen and plant growth
- Impacts of chemicals and plant growth (land or water)
- Organic vs. inorganic fertilizers

Water

- Acid rain on plants/ water/ rocks/buildings
- Use of grey water to health of plants
- Pond/lake/creek pollution (water test, turbidity, clarity, pH)
- Salt water intrusion (effects on lawns, plants ect)

Questions to be answered for each article

- C1 :
Research
and planning**
- a) Is the hypothesis or question clearly stated
 - b) Is there evidence of knowledge through a clear explanation of the principle underpinning the hypothesis or question (is the enough background information given)
 - c) Does the plan includes appropriate methods and they are clearly explained
 - d) Is the plan effective at testing the hypothesis
- C2 : Data
collection
and
presentation**
- a) Is the data observations clearly presentenced in an appropriate format
 - b) Is the data collected and recorded accurately and with appropriate degree of precision
 - c) Is the report organized in a logical order of presentation (information, description, explanation, diagrams).
 - d) Is there a high quality of written work
 - e) Is there suitable statistics used to analyse the data
- C3 :
Conclusion
and
evaluation**
- a) Is there full conclusions drawn and supported and referenced through evidence
 - b) Is there knowledge of environmental and management principles used to explain results
 - c) Does the report discusses its limitations and level of success