**NSCI 115: Research & Opinion Project**

Overview

The goal of this project is for you to explore how we can modify our use of natural resources through (1) individual choices and (2) group choices. The project is broken down in to several parts that will be completed throughout the semester. Completion of each part will count toward your overall project score (worth 25% of your course credit). ***If you do not complete the project, you cannot pass the course.***

**Part I: Individual Behavior Change**

*Note: This assignment is modified from a similar assignment written by Prof. Criss Wilhite*

(1) Behavior Definitions due Tuesday, September 23 (10 points)

Define one behavior, either one you will you will eventually decrease or one you will eventually increase.Be sure the behaviors are defined by ***what you actually do in a way that can be measured*** (number of times, number of minutes, number of bottles in recycling, ounces consumed, miles driven etc.). The definitions or procedures should meet the specifications of operational definitions as you learned during our class lecture from Prof. Wilhite. Target one activity in your life. For example: riding my bike (behavior to increase) or minutes in the shower (behavior to decrease).

**FOR NOW, ONLY DEFINE BEHAVIOR; DO NOT ATTEMPT TO CHANGE THEM.** Next week, you will do a baseline for your behavior. You will use the data from baseline to develop a change strategy, so you should not begin to change your behavior for a few weeks.

On last page are some ideas about behaviors to target for change. Changes in each behavior should eventually contribute to sustainable use of natural resources. So any behavior that you engage in on a regular basis that adds to use of natural resources (e.g. using petroleum products – gas, oil, plastics, petrochemicals) or increases consumption (buying only new items) can be targeted for decrease. Any behavior you could learn to do more that would decrease use of natural resources (e.g. recycling, walking, reusing) could be targeted for increase.

Please define your behaviors and turn them in ***Tuesday, September 23 in class***. Fill out the form below and bring to class.

**Behavior Definition**

**Check one** increase ☐ or decrease ☐

**Measurement Procedure** (e.g. record each time I turn off a light with a note page and hash mark on my cell phone, check phone time when I turn water on and when I turn water off; record time on a paper taper to the bathroom wall)

(2) Collect Baseline Data: Submit Data by Friday, October 10 (20 points)

This is a baseline recording of one behavior, designed to reduce your use of natural resources. You will count the number of times you engage in one behavior that you will eventually decrease or one that you will eventually increase. But this week, **you only count the behavior as it occurs; do not attempt to change it**. Be sure the behavior is defined by what you actually do in a way that can be measured (number of times, number of minutes, number of bottles in recycling, ounces consumed, etc.) **and** that you define each count or hash mark you record in terms of what it represents (each mark = 5 minutes of water running, each mark = 1 bottle put in recycling, each mark = 1 mile riding a bicycle, etc.). You should target one activity in your life. For example: riding my bike (behavior to increase) or minutes in the shower (behavior to decrease).

**Record your behavior on your phone or a separate sheet of paper that you keep with you.** This allows you to record behavior as it occurs (we know that relying on memory at the end of a day, let alone the end of a week, is not accurate). **At the end of the week, neatly transfer the data to the charts below. Staple your original data to the back of this sheet and hand it in on Oct 10th.**

**Behavior (to increase or decrease?)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Each mark = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Date: Totals

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Note here any ideas you have about what to do that may increase/decrease the behavior. You only need to pick one. Describe what you will actually do next to the possible idea.

**\*\*\*But do not do them this week\*\*\***

**Antecedents:**

Reminder notes:\_\_\_\_\_\_\_\_\_\_

Move furniture or items:\_\_\_\_\_\_\_\_\_\_\_

Use a timer (alarm, song list, TV show):\_\_\_\_\_\_\_\_

Change/use schedule:\_\_\_\_\_\_\_\_

**Consequences:**

Do more probable behavior after this one (Premack): \_\_\_\_\_\_\_

Cash-in recycling:\_\_\_\_\_\_

**Other reinforcer**:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(3) Behavior Intervention: Submit Data and Reflection by Friday, October 24 (30 points total)

**\*\*Use the following outline headers to complete a formal write up.\*\***

*This assignment will be graded for (1) completeness, (2) writing & presentation of ideas, (3) documentation and presentation of data, (4) thoughtfulness of reflection.*

**I. Introduction:** Introduce the purpose of this project and briefly discuss how you met the goals of the activity. Define your behavior and measurement procedure.

**II. Change procedures:** Using baseline data, choose the best procedure(s) for changing your behavior. You can use one or several. Prepare and set up the change procedures, then implement them for one week (7 days ). Collect data by keeping a notebook , phone or piece of paper with you at all times so you can measure the behaviors as they occur. *The measures should be the same ones you used in baseline. This allows comparison across baseline and intervention. If you change them you must redo a baseline.*

***Summarize the procedures and how you collected data in this section***. Examples:

1. **Modeling** - I observed my friend Royanne and found that she decreased her use of paper towels by having a box of old, holey tee shirts cut in squares and using those. I did the same thing. I made two boxes of rags and put one on the counter next to the paper towels and the other in the drawer below my paper towel rack. I measured use of paper towels as I did the baseline week, by the number of inches the rolls were reduced per week.
2. **Premack principle** – for every 5 minutes I decreased my shower time, I could have 15 minutes on Facebook before I go to work. I love Facebook but tend to spend too much time (about 25 minutes) before work. (Notice how Premack involves a behavior to increase and one to decrease automatically?) I had my data collection sheet taped to my mirror next to a clock.
3. **\*Stimulus control** – I used two nice cardboard boxes and placed them next to the trash, one for CA Cash Refund material and one for paper recycling. I measured the number of items in the CA Cash Refund box at the end of the week and weighed the paper in the other box at the end of the week
4. **Reinforcement -** when I used reusable bags 15 times, I put aside $1.50 in my book fund. I had a post-it in my car so I could record how many bags I reused as that occurred.

\*Note from Prof. Wilhite: When my grad students and I evaluated past research done in these classes, we found Stimulus Control important for behavior that has built-in reinforcement that is not currently being accessed. You know you can save money by using less electricity, cashing in CA Cash Refund bottles (or if you have the appropriate history of reinforcement, the reinforcer may be being able to say, “I am doing a good thing for others”), but you do not do those things now. Try putting bins next to the trash, posting notes on switches, or moving your multi-plug to the top of the table. These Stimulus Control measures reduce response effort. It may be enough to get you going so you can contact reinforcers already in place. The first three techniques work best for changing our own behavior. Self-reinforcement and self-punishment do not work well, because we often find it difficult to deny ourselves or deliver punishers to ourselves.

**III. Data -- Baseline and Intervention**: Describe the data you collected during the baseline and change weeks using words. Then, compare the two weeks. For example: During baseline, I used 8 inches of paper towels. During my change week I used 1.5 inches of paper towels. I decreased paper towel use by 6.5 inches on the rolls. Be sure to report each week’s data in summary form and compare them. Describe any potential errors in data collection here.

**IV. Summary& Reflection (counts as LL #3):**How effective were the techniques? Discuss how your behavior change did or did not contribute to sustainable use of natural resources. What would you do differently in the future? What would you use again for other behaviors? If you did not have success, can you evaluate how the principles were misapplied? What types of changes might facilitate behavior change at the society level?

**V. Data Tables and Graphs:** In this section, include two data tables, one for baseline (already competed) and one for the intervention week. Make a graph (visual representation) that illustrates the difference between the baseline and intervention measures.

**Ideas for Behavior to Change**

1. Increase picking up trash from a public areas to recycle and dispose appropriately
2. Decrease driving by combining trips
3. Increase riding your bike for trips that you would have driven
4. Decrease shower time
5. Increase recycling things that you have been throwing away
6. Increase re-using things that you would have discarded.
7. Decrease water use while dishwashing
8. Increase unplugging your computer
9. Decrease the number of times you turn on lights
10. Increase the number of times you turn off lights
11. Increase walking to friends’ homes or stores that are within a mile or two
12. Increase purchasing “green” products (but first determine if the claims made by the manufacturers are valid)
13. Decrease purchasing items with excessive packaging
14. Decrease using plastic or paper containers for one use
15. Increase purchasing products with less packaging
16. Increase drying laundry outside
17. Increase composting food and other things that you would have discarded into the trash.
18. Increase using reusable grocery bags
19. Increase the size of your laundry loads
20. Decrease the amount of meat you eat
21. Increase the amount of food you cook so you cook once and have food when you are tempted to eat take out
22. Increase carpooling
23. Decrease the number of cups you buy for soda or coffee
24. Increase letting cool air in at night when it is hot
25. Decrease heat in your house during winter
26. Increase the clothes you wear when it is cold
27. Increase purchasing items you need at thrift shops before you automatically buying new items
28. Decrease using bottled sodas or tea
29. Increase drinking fountain water

**Part IV: Group Behavior Change & The Triple Bottom Line**

The goal of this assignment is for you to reflect on how society/group choices affect our use of resources and to make a recommendation for action (i.e. intervention) on an environmental issue.

***Write a letter*** to someone ‘in charge’ of implementing new rules for group behavior: examples include the University President, Mayor of Fresno, Governor of California, President of the United States, etc. ***Make a recommendation of what action you think should be taken*** related to an environmental issue. Your letter should be written as a formal essay (intro, body, conclusion) that outlines a specific argument (claim, reason, supporting evidence). Reflect on the idea of a triple bottom line, whether, and how it can be implemented for your issue/problem.

**Deadlines**

1. Come to class Tues, Nov. 4 ready to discuss your recommendation.
2. Peer Review in class (for credit) on Tues, Nov. 11.
3. Instructor Draft due in class on Tues, Nov. 25. with cover page.
4. Revised Draft (required if <70% on first draft) due by Dec. 9.

**Guidelines for Research & Opinion Essay -- Tues, Nov. 11 (Peer) & Tues, Nov. 25 (Instr.)**

* Please come to class on Tues, Nov. 11, with ***one paper copy*** of your essay to exchange with your classmates (required for full credit).
* Each student will be assigned at least one other student essay to evaluate and critique. You will conduct the peer review and discuss it with your classmate in class.
* By submitting your peer draft and completing a peer review, you will receive 40 points towards the total essay grade. ***If you do not complete both parts, you will get 0 credit.***
* Based on your peer evaluations, make revisions and submit your paper on Blackboard via SafeAssign by 5pm on ***Tuesday, November 25***. (150 points possible)
* Every student will have the option to re-do the essay and turn it in on **December 9**, the last day of class. If you receive a 70% or below on the first submission, you must re-do the essay. If you do not turn in a first draft, you will not have the option to revise.

**\*\*\*\*\*IMPORTANT NOTES ABOUT PLAGIARISM AND CITATIONS\*\*\*\*\***

* Avoid using direct quotations unless absolutely necessary. The goal of this assignment is for you to demonstrate that you can present scientific ideas and arguments **in your own words**.
* Any time you knowingly or unknowingly present another person’s **words or ideas** as your own, you are committing plagiarism. I will use all resources available to identify possible cases of plagiarism.
* When researching a topic outside your specialty/knowledge base, it can be difficult to phrase the ideas in your own words. Rather than trying to translate individual sentences into your own words, I suggest reading entire paragraphs, then looking away from the resource and trying to recall the key information without looking back at the resource. This method will help you write your essay in your own words and style and not plagiarize another’s work.
* If you must use the exact language/wording from another source, **you must put it in quotations and include a parenthetical reference**.
* When you do rephrase an idea or series of ideas in your own words, you must include a parenthetical reference after the idea(s). **If you do not, you are committing plagiarism**.
* If you have a question about paraphrasing, quoting, or citations, please see me as soon as possible.
* If you commit plagiarism, **you will fail the assignment** and be in danger of failing the course and receiving disciplinary action.

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***You will be graded according to your level of achievement of the criteria and characteristics outlined on the following page. The final essay will be graded out of a possible 150 points total.***

**Characteristics of an *Excellent* Research & Opinion Essay**(Assessment Criteria)

1. **Writing and Presentation of Ideas (45 points)**

* Proper grammar and spelling
* Clear, direct, and concise sentences
* Sentence and paragraph structure do not distract the reader from the main idea
* The paragraphs are presented in a logical sequence
* ***Each paragraph has clear purpose and a topic sentence that states the main idea***
* ***All sentences within a paragraph are necessary and sufficient to support the main idea***
* ***Ideas are supported with details, examples, evidence, reasons, etc.***

1. **Scientific Content & Understanding (45 points)**

* Comprehensible to non-specialists. (Your audience = your classmates)
* Clearly states the significance of scientific information presented
* ***Clearly states a claim and a specific reason that is directly relevant to the claim***
* ***Includes at least two lines of evidence based on scientific data to back up the claim***
* ***Demonstrates a clear understanding of data/evidence presented***

1. **Organization & Structure (30 points)**

* Introduction:
* clearly states the issue and ***why it is important*** (grab the reader’s attention)
* presents a **brief** overview/background of the topic
* final sentence outlines an **argument** for what should be done about this issue. This sentence should include a clearly stated claim and a specific reason.
* Body Paragraph(s)
* Paragraph(s) that explain the supporting evidence and its significance
* Conclusion/Closing
* Summarizes the recommendation and supporting ideas
* Evaluates the possible implications of implementing your recommendation (think about the future of this issue)
* Reiterates how this specific issue is related to, or can affect, broader social and political issues

1. **References & Information (30 points)**

**\*\*\***Failure to properly cite sources will result in zero credit for the assignment.\*\*\*

* Properly formatted within the text and in the list of references
* Paraphrases other authors’ work in own words
* ***Avoids the use of direct quotations unless absolutely necessary to convey idea***
* ***Integrates appropriate information relevant to the main topic from class, reading, and discussions***(must include at least one science-based reference)