

Geology 106
Homework #4
Feedback Loops and Global Warming
Part I

Consider the two interactions noted below. Diagram their interactions using arrows as in class – remember there must be a forcer and a responder, but the number of step might vary. Decide if they are positive or negative, and state why you think so. Write your diagrams/ answers to the right of each sketch (a couple of sentences is fine).

CO₂ and vegetation

CO₂ and water content of air

Bring this sheet to recitation on Friday.

Homework #4: Feedback Loops and Global Warming

Objective: To understand the difference between positive and negative feedback loops in natural systems, and what role they play in contributing to uncertainties about global warming.

Task: Supplement class information to write a 1-2 page essay addressing: **Which feedback loop studied in recitation introduces more uncertainty into the analysis of future global warming trends?**

Audience: A group of U.S. senators on a fact-finding mission. They are well educated but are not scientists.

Guidelines: Two-page maximum length, 1-2 references (do not need in-text citations unless you use a direct quote). Emphasis is on convincing the reader that your main thesis is correct.

READ THIS: Remember to state your answer to this question (i.e. your main thesis) in the **first paragraph** of your paper.

READ THIS TOO: The paper should be a collection of arguments supporting your main thesis, and evidence for them. It should **not** be just a step-by-step description of what you did (the reader (your TA) already knows what you did!).

Evaluation:

This paper is worth 100 points:

- ___ 1. (10) Paper is not plagiarized. Automatic zero if plagiarized.
- ___ 2. (14) Paper enters the discussion at the appropriate level for the target audience.
- ___ 3. The paper develops its thesis with a subthesis structure that
 - ___ (8) has relevant subtheses supporting each other.
 - ___ (8) is a coherent piece of reasoning linked by logical transitions.
 - ___ (8) addresses other interpretations or weaknesses
- ___ 4. For each subthesis, the writer furnished evidence/information that
 - ___ (8) is as great in quantity as is appropriate
 - ___ (8) is as specific/concrete as is appropriate
 - ___ (12) is relevant.
- ___ 5. (8) The conclusion is thoughtful and cogent; it contributes more to the question than a mere summary.
- ___ 6. (8) Spelling/punctuation and correct grammar.
- ___ 7. (8) Proper citations.