Climate Engineering Teaching Module

Lesson 3: Climate Engineering Designs Worksheet

Introduction

Use your content knowledge, the decision matrix, and your creativity to revise your climate engineering design.

Question Set 1 (Use the Decision Matrix to help decide which of your climate engineering designs you should develop further)

Criteria to Consider when Selecting and Revising your Designs	Score 1-5
How well does your design slow global warming and/or climate change? (1 - not well, 5 - very well)	
Does your technology modify or work with an environmental system? (1 - does not, 5 - perfect match)	
What is the cost of your technology (consider materials, resources, and upkeep)? (1 - high cost, 5 - low cost)	
Does your design scale well (can you test your technology on a small-scale, then expand to large-scale deployment)? (1 - not well, 5 - very well)	
Rate the amount of unintended negative consequences of deploying your technology? (1 - many, 5 - few)	
Is your design unique? (1 – other students have similar designs, 5 – it's one-of-a-kind!)	
Total (max 30 points)	

1. What are the ratings of your three designs? Are you able to combine features of your designs to create a unique technology that scores high in all the criteria categories?

Engineering Blueprint Checklist

☐ Title

☐ A descriptive subtitle

☐ Drawings from at least two perspectives

☐ Label and a Table of important features

☐ Label and a Table of the size of your design

☐ Meets all criteria

Question Set 2 (Consider the questions before your final design)

2. Describe how your climate engineering design will function to slow global warming and/or climate change by modifying or working with an environmental system?

3. What materials and natural resources are used for your design to function? Do you think your technology is expensive? Why or why not?

4. Is your technology a solution to *global* warming and/or climate change, or is the technology better suited to resolve *regional* warming and/or climate change? Can your technology be scaled-up to a global scale?

5. Is your technology a long-term solution to global warming and/or climate change? What is the impact if the technology breaks or malfunctions?

6. What may be some unintended negative consequences of deploying your technology?

7. Do you foresee any countries benefiting more from your technology? Do you foresee any countries experiencing negative outcomes from its deployment?