

# Engineering Design Challenge

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# Design at Hand: Upcycled Garden

My class and I made an upcycled garden using recycled plastic soda bottles like so:



# Implementation Timeline:

1. Introduce the concept and standards that are aligned
2. Talk about the project & supplies needed
3. Bring in supplies and begin designing
4. Actually cut the bottles and begin putting the pieces together
5. Get soil, seeds, and water and begin to plant !

# The Design:

I performed the experiment with my students and this is a picture of the most recent results for one of the successful plantings:



**Design Notebook: See PDF - page 2**

# Reflection

- a. What went well with the engineering design challenge? The challenge was successful! It was great to work with my students to come up with the design and implement it at school.
- b. What did not go well with the engineering design challenge? It was very messy and hard to cut the soda bottles - maybe next time use something that is easier to cut
- c. What concepts were covered (list standards and topics where appropriate) 1-LS1-1: Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.
- d. How did the ED process help teach the science and mathematics concepts? It taught my students about what plants need to survive and it also taught them how we can adapt to fight climate change
- e. Did I choose an appropriate engineering design process? Should I simplify or make more complex? This process was appropriate for high school students
- f. How can I improve this activity to use with future students? I can do a better job about relating this activity to climate change