

Name: \_\_\_\_\_

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## Up-cycling With Plastic!!!

Your task is to use HDPE and LDPE to build a product. You will be up-cycling, which means that your product needs to have more value in it's final state. You must be creative, and think about what products will benefit from the properties of the reworked plastic. The best projects will look like something that you would actually buy in a store.

<b>Day 1</b>	<b>Day 2</b>	<b>Day 3</b>	<b>Day 4</b>
Questions 1 - 3:  Research and design your product	Questions 3 - 4:  Design and build prototype	Question 5:  Design Review	Build product and incorporate feedback from design review

1. Research up-cycling with plastic. List two websites that helped you think about products that you could create and the process involved.
2. Start brainstorming what your product will be, and how you will make it.
  - a. Materials?
  - b. Tools?

Name: \_\_\_\_\_

Block: \_\_\_\_\_

3. Re-list the materials you will need, and draw a ***detailed*** sketch of your idea.

4. Build a prototype with materials from the shop (e.g., cardboard, paper, items from the prototyping bin, tape, hot glue, etc.).

Name: \_\_\_\_\_

Block: \_\_\_\_\_

5. On Day three of the project we will be doing a design review of each group's ideas.

Your group will be presenting to the class in order to get feedback.  
Put important feedback below.

<b>Completion/Skill Mastery</b>			
4	Built a complete, working design that is ready for implementation by the assigned deadline. It is a finished product and represents the original vision.	3	At the project due date the model works as a proof-of-concept. Functions correctly based on the scientific principles studied in the Scientific Inquiry, but is not a finished product.
1		2	At the project due date the model physically represents a final version but does not work, or, shows most progress toward working but is incomplete.
1			At the project due date the model does not function as intended and is not near completion
<b>Engineering process</b>			
4	Built and tested a prototype based on original design idea, and modified it based on my results so that it functions as intended. Device actually works as expected/intended.	3	I used the information I found to come up with a design, and I built something that sort of works. I tested and modified my design to get it to work better.
2		2	I tried to build something based on a design I found, but it didn't work.
1			I didn't really build anything - I just copied a design I found and didn't actually even try to build it.
<b>efficiency/time usage</b>			
4	Used class time well. Spent every class period building/designing/engineering your build. No time wasted.	3	Most time used efficiently but maybe didn't have materials ready to begin, or missed classes/opportunities to engage in build.
2		2	Missed classes, didn't have materials ready for building promptly, or had materials ready but didn't engage in building efficiently
1			Dawdled, wasted time, delayed, an made little progress
<b>Effort/work ethic</b>			
4	Independently researched, learned about the issue, devised and attempted to implement a solution/new idea/innovative twist on an existing product with a clear, viable purpose	3	researched, learned about the issue. Solution is kind of a new idea but draws heavily from existing projects/products. Could be more novel. Doesn't have the clearest purpose, usefulness or viability
2		2	drew heavily from existing ideas, didn't alter or innovate in any major way. Build quality is good but purpose/intent/viability isn't clear.
1			Dawdled, wasted time, delayed, threw hands up and asked to be told what to do
<b>Communication</b>			
4	Clearly communicated all features of the design through labeled blueprint/sketch, powerpoint presentation, or product demonstration detailed enough for another person to recreate the design	3	Most, but not all, design features were communicated well. Someone else could build it with some assistance
2		2	Blueprint/sketch is has some labels and measurements, but is difficult to interpret and would be difficult to build from
1			Even when prompted, student would not communicate design features, and it would be very difficult/impossible for someone else to recreate the design.

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<b>Week #/ Date</b>	<b>Internal Temperature (°F)</b>	<b>Comments</b>
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