Upcycle Product Design Project Guide

intel FUTURE SKILLS

PROJECT OVERVIEW:

Transform abandoned materials by upcycling them into a new and unique product.

Project Intro Video: Upcycling Intro

Inspirational Video: A Liter of Light

PROJECT CATEGORY:
Global

DIFFICULTY LEVEL:
Intermediate

TIME RANGE:
60 - 90 minutes

ESSENTIAL SKILLS/ MINDSETS THAT YOU MAY LEARN:
Design Thinking
Business Acumen
Teamwork
Product Design
User Archetype
Material Science
Fabrication
Collaboration

TOOLS AND MATERIALS:
- Reclaimed materials (bike tubes, scrap fabric, recycled containers, etc.)
- Paper, tape, and scissors
- Needle and thick thread
- Additional craft and recycled materials

AT HOME SUBSTITUTIONS:
- Bike tubes and fabric are the easiest to work with for this project. If you can, visit a bike store and see if you can get some old, nice and wide mountain bike tires or other small scrap items. Another great location is the local thrift store, where you can look around and ask, "What could this become?" of all the different items. You could even use an old t-shirt and, say, turn it into a bag.

MATERIAL PURCHASE LINK:
http://tiny.cc/Intelbuylist

Project Steps

Dream it!

This project challenge is all about upcycling, or the process of turning hard-to-recycle materials into new products. So what can you design? What market niche will you service? Could you actually sell what you make and turn your upcycling hobby into a business? What can you make out of trash that could change people's lives?

It all starts with your ideas, your inventiveness, and your innovation. Why not grab that old, discarded item and turn it into something new?

1. Watch the Project Intro and Inspire-To videos to better understand the challenge and get ideas of what you might create. [:07]

2. Write a list of materials that you have available, and brainstorm objects or products that you could create with them. [:05]

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Draw It!

3. Pick two or three ideas and sketch them out. [:05]
4. Make a final drawing of your best upcycled product idea, labeling the parts and how they will be put together. [:05]

Build It!

5. Collect your materials, decide on your measurements, and start building your first prototype. [:10]
6. Iterate your design by making more versions until you are pleased with the end result. [:15]

Share It!

7. Share your prototype (or final object) with others. Gather feedback and think about how you would make it even better next time. [:08]
8. Clean up your area, put away your tools, and save any useable materials for future projects. [:05]

Expand It!

What other products or solutions can you come up with by creating new items with old, discarded things? Here are some ideas to get you going deeper:

- Watch this short video to see how you can save the landfill by design: **youtu.be/RZu3WcWrCI0**
- Make a business. Talk to your local bike shop to see if you can get free tubes to use in your creations. Ask for ideas of what would sell, and make those items. Then, go back and see if the shop will sell your products.
- Read this article to learn more on turning your upcycling into a business: **tiny.cc/lowtechmaking**

BRAINSTORMING 101:

Need help with generating or refining your idea? Use the downloadable guides below for inspiration!

- Action, Materials, Location Guide: **tiny.cc/createcards**
- Method 635 - Design Refinement: **tiny.cc/Method635**

DASH OF DESIGN:

Use design thinking to get your creative juices flowing! Watch our video to learn how you can use this practice to make a better end product.

PRO TIPS:

- If your materials are limited, try making a paper prototype first. This mockup will allow you to fail fast without messing up your limited resources.
- Not sure what material to use? Check out these material stat sheets to learn more about the properties of typical upcycling materials: tiny.cc/MaterialStats
- A needle and thread (we like embroidery floss) are one of the easiest, strongest ways to attach several upcycling materials together.

HELPFUL RESOURCES

- Duct Tape Design Resources and Tutorials:
  Simple Duct Tape Life Hacks: **youtube.com/watch?v=a-PDjE72f7Q**
  Duct Tape Wallet Tutorial: **tiny.cc/whitmorewallet**
- Bike Tube Design Ideas:
  Story of a Bike Tube Wallet: **youtube.com/watch?v=4oP2ezQLb9k**
- Repurpose Four Everyday Objects:
  pbskids.org/designsquad/video/repurpose-four-everyday-objects

NEED MORE HELP AND INFORMATION?

Contact us at: **intelfutureskills@intel.com**

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