3Doodler EDU
Design Challenge

Trash to Cash

Participant's Guide

⚑ The Challenge

Collect everyday disposable materials and old machine and electronic parts, then design a new product using the 3Doodler to adapt, connect and add new life to old stuff.

⧖ Challenge Background

☑ Notes

Fig.1

Fig.2

Fig.3

Upcycling or repurposing trash and discarded machines is a growing trend in product design. It is estimated that the repurposed product market is worth over $4B in the United Kingdom alone. Trash and old machinery and electronic parts are made into furniture, jewelry, accessories, toys, office organizers and home decor and sold on sites like Etsy.com. Not only is it profitable; it also saves on space in the landfill!

✎ Materials & Tools

① Before You Start Doodling
We recommend using a DoodlePad or clear tape placed over paper as a foundation to keep your Doodles in place and so that you can peel them off with ease.

A.

B.

C.

D.
E.

F.

G.

A. 3Doodler Pens and Plastic Strands
B. Tools (from your 3Doodler box) plus needle-nose pliers or scissors for snipping plastic ends
C. Clear plastic tape or DoodlePad for Doodling foundation
D. Paper for Doodling foundation and extra sketching/note-taking space
E. Drawing utensils (markers, pens or pencils)
F. Camera or video recording device to document the Challenge and results
G. Various machine and electronic parts and materials slated for the trash bin

📋 Challenge Organization

📷 **Challenge Documentation**
Take photos & videos of your process using a camera. Document what to do and what not to do. Share your experience with the online community using #3DoodlerEDU!

Challenges are organized into 50-minute periods so they can fit into a traditional classroom structure, or be combined into a single workshop with breaks in between activities. This Challenge is designed to have participants work in short sprints to quickly explore the concepts.

🖥 Class 1: Imagine, Present & Discuss
🕐 **Total Time: 50 min.**

🔍 Imagine (🕐 20 min.)

Step 1: From the materials provided, select 4-5 materials and inspect their size, shape, texture and material type (wood, metal, plastic, paper, cloth, etc.).

Answer the following questions:
- How can the 3Doodler plastic strands be used to modify or connect the materials?
- Can you cut the materials?
- Are there holes or slots that can be used?
- Is the material flexible or rigid?
- Is the material transparent or opaque?

Step 2: Next, think about the types of products you, a family member, or a friend might want that can be made out of a combination of these materials.

Step 3: Sketch or write out 10 quick ideas of new products you can create and present them to the group for feedback.

Tip: When providing feedback to others, you can use these statements, "I Like, I Wish, I Wonder." It will help to bring the best out in the designer.

📊 Present & Discuss (🕐 30 min.)

✂ **Remember to Snip Those Ends**
We recommend pliers or scissors for snipping plastic ends. Make sure to keep your plastic ends clean to prevent clogs and jams. Snip plastic after removing it from the 3Doodler pen to make sure it's clean for the next time.

Step 1: Now it's time to present your product. Take 5 minutes to prepare a product pitch. Your pitch should include the name of your product, who it's made for and what problem it solves or solution it creates. Also discuss the types of materials that made the product and how the plastic strands are used.

Step 2: Take turns presenting your products and use the "I Like, I Wish, I Wonder" model for providing feedback. Don't forget to take pictures of your product prototypes.

🖵 Class 2: Design, Build & Present
🕐 Total Time: 50 min.

💬 Design & Build (🕐 30 min.)

Step 1: From the feedback received, select a product that you want to make. Make sure you have the tools you need to cut or manipulate the materials and the color and type of plastic strands ready for use.

Step 2: You will be making a prototype. A prototype is a working model of a final product, meant to bring the idea to life. Experiment and try things out. It's OK if it's not perfect. In fact, it's encouraged! The goal is to be able to demonstrate your ideas and how it works.

👤 Present & Reflect (🕐 20 min.)

Present your completed product to the group:
- What did you improve or change from the first presentation?
- What new ideas came to mind while making your product?
- How would you improve in the future?

🖵 Optional Class 3 & 4: Re-iterate & Pitch
🕐 Total Time: 100 min.

👤 Re-iterate & Pitch (🕐 100 min.)

Step 1: If you have time or another class period to work on your challenge, take your product prototype to the next level. Incorporate the feedback received in the last presentation, add new materials, clean up the connections and modify the colors to personalize or brand the product.

Step 2: Present your product in a "Shark Tank" pitch to see if your product is a viable business opportunity. Look at Guy Kawaskaki's 10 Slides You Need in Your Pitch (http://guykawasaki.com/the-only-10-slides-you-need-in-your-pitch/) and create a presentation to pitch your business idea.

✎ **Notes**

⑦More Information:

For further upcycling and repurposing information and inspiration, visit:

- http://www.upcyclethat.com/
- http://www.etsy.com

For pitch presentation advice, review Guy Kawaskaki's 10 Slides You Need in Your Pitch:
- http://guykawasaki.com/the-only-10-slides-you-need-in-your-pitch/

Images:

Cover Page: http://goo.gl/H6x7BB

Fig.1: https://c1.staticflickr.com/3/2932/14258398038_05af6bfed3_b.jpg

Fig. 2: https://c1.staticflickr.com/5/4119/4819195622_5eb2497320_z.jpg

Fig. 3: https://goo.gl/HBYOKp