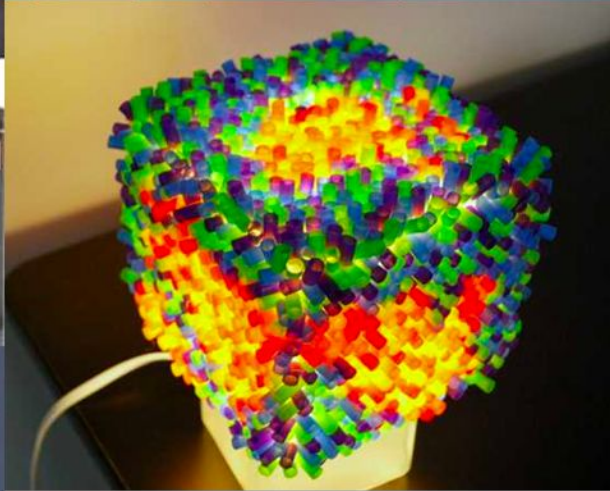


# Upcycling Light

Fanisi, Hannah, Ward

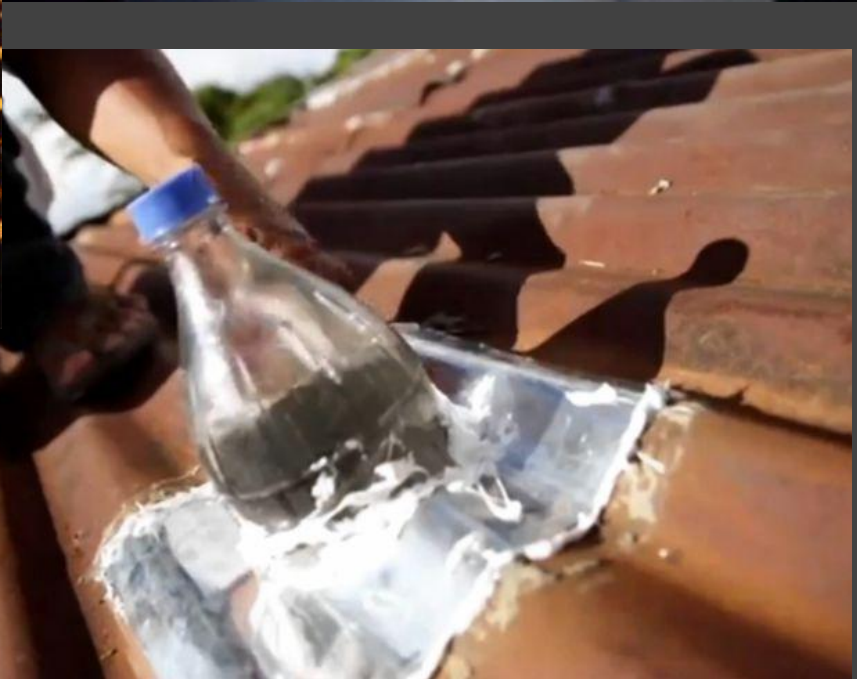
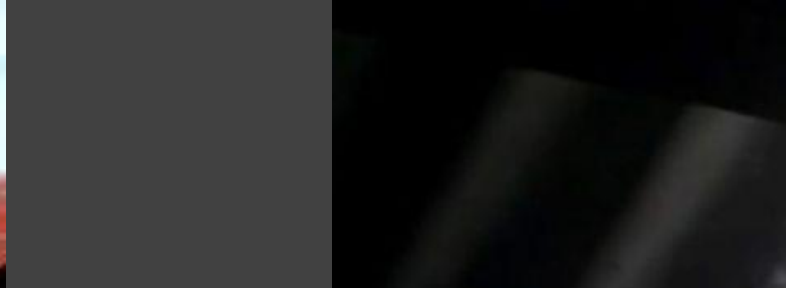




Mood Board







# Project Aims

- To build a light source that is:
  - accessible to all
  - uses no new raw resources
  - is aesthetic as well
- To bring dynamic patterned light into any home or space
- To help provide a reliable source of lighting when electricity is disrupted or when power systems fail



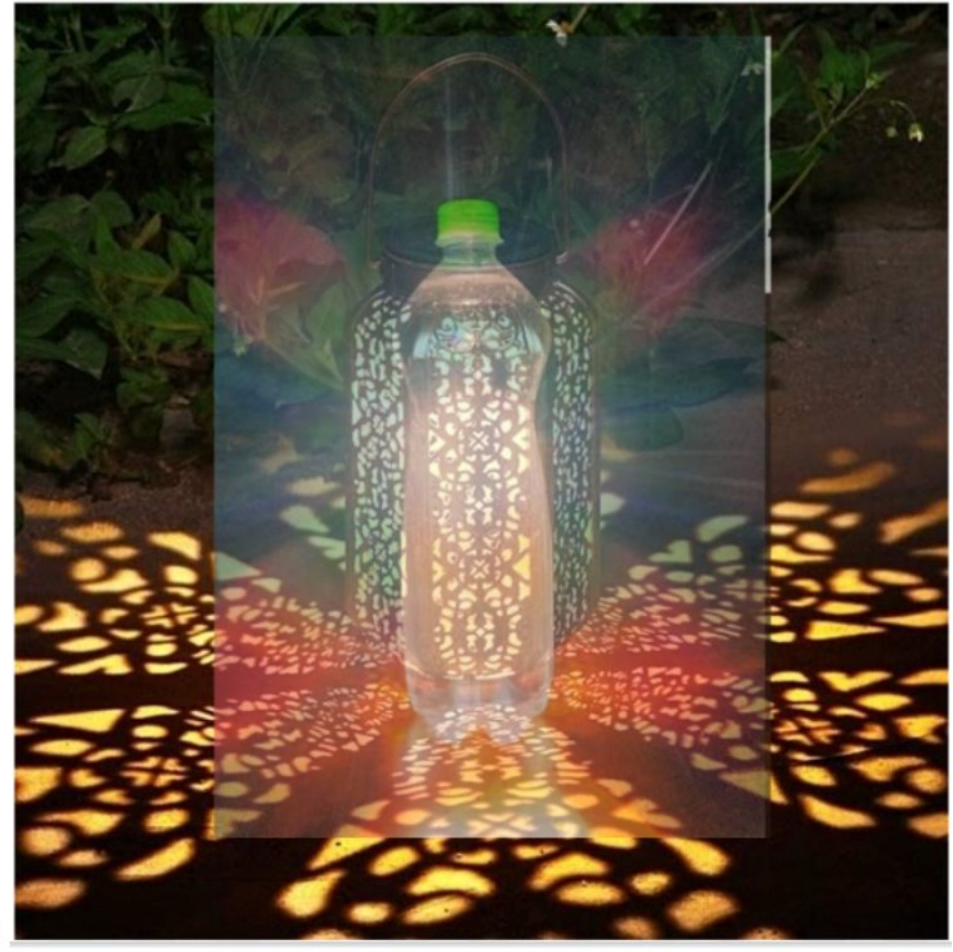




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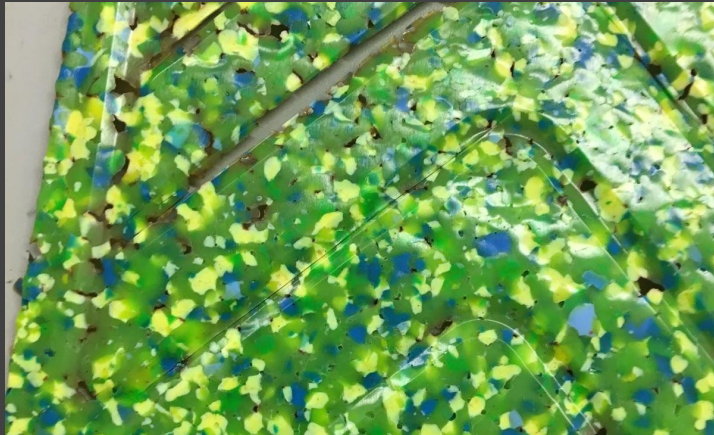
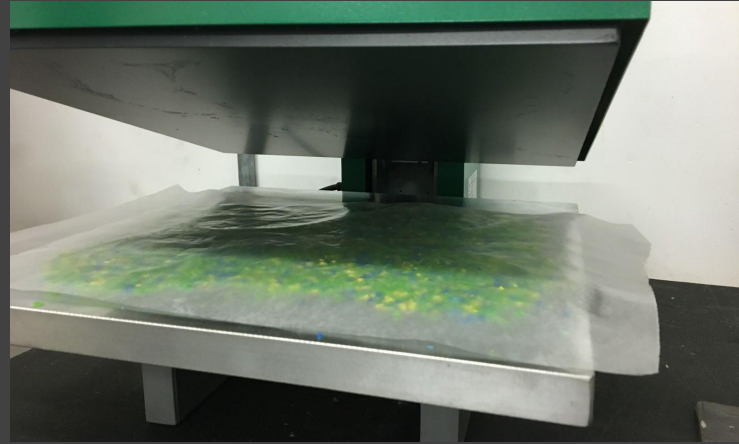


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A Conceptual Visualization

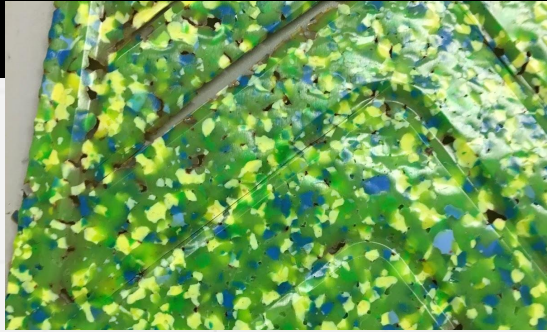




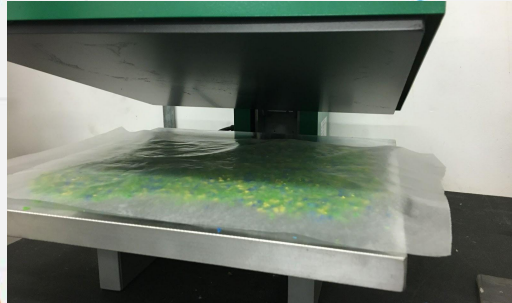
# Process

- Experiments to create solid rectangles and then examine how malleable they were and how light propagated through them.
- To create an ordinary, solid lantern, we knew that light would have to be able to travel directly through the material; or to create a patterned design, the solid portions need to be impermeable to light and the cut-out portions must allow light to pass through.
- Experimenting with different methods to form solid rectangular panels (an oven-melted baking sheet filled with shredded plastic; and a heat-pressed shredded plastic layer) and a flexible rectangle out of fused plastic bags.
- We then experimented with cutting designs out of these plastic sheets and we tested shining a lightbulb through them. Based on whichever plastic sheet was the most successful, we will construct the final lantern design and affix it to the bleach-and-water light source bottle.





Shredded plastic (#2)



Heat Press method

- Step One: 20 minutes in the oven
- Step Two: Apply pressure and cool overnight
- Step Three: Cut out thinner sections from mold design using knife
- Step Four: Heat with heat gun and bend into a cylinder, hold until cool

- Step One: Spread thin layer of plastic on heat press
- Step Two: Heat until melted fully
- Step Three: Measure rectangles, perforate and heat to fold into rectangle
- Step Four: Heat screwdriver and add holes for light to pass through each panel

Plastic bags

Iron bags together

- Step One: Adhere bags together
- Step Two: Fold a square portion into triangular eighths
- Step Three: Cut out slots as if making a paper snowflake
- Step Four: Attach snaps to make into a cylinder



Lantern to surround illuminated bottle

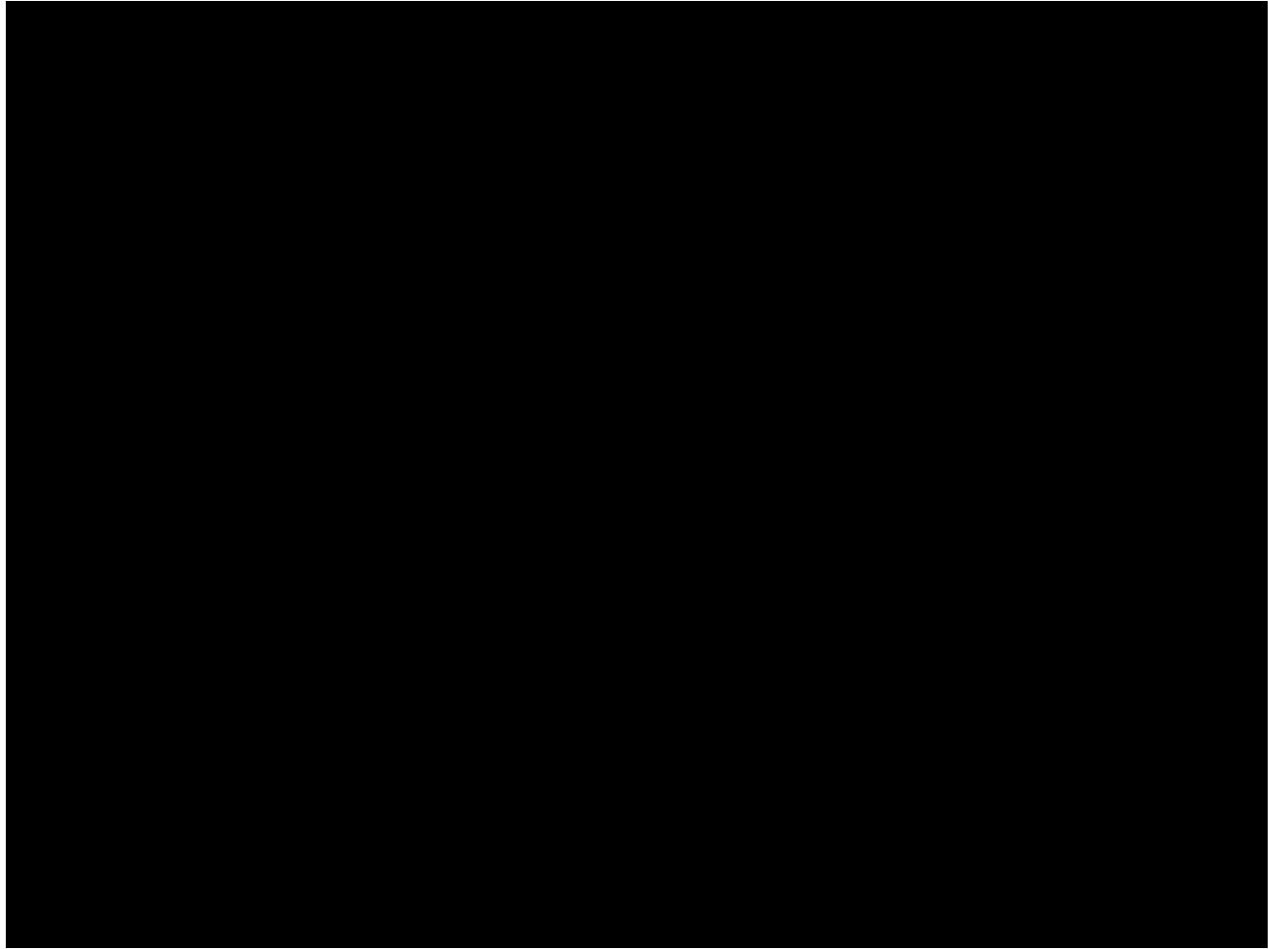


# CHALLENGES

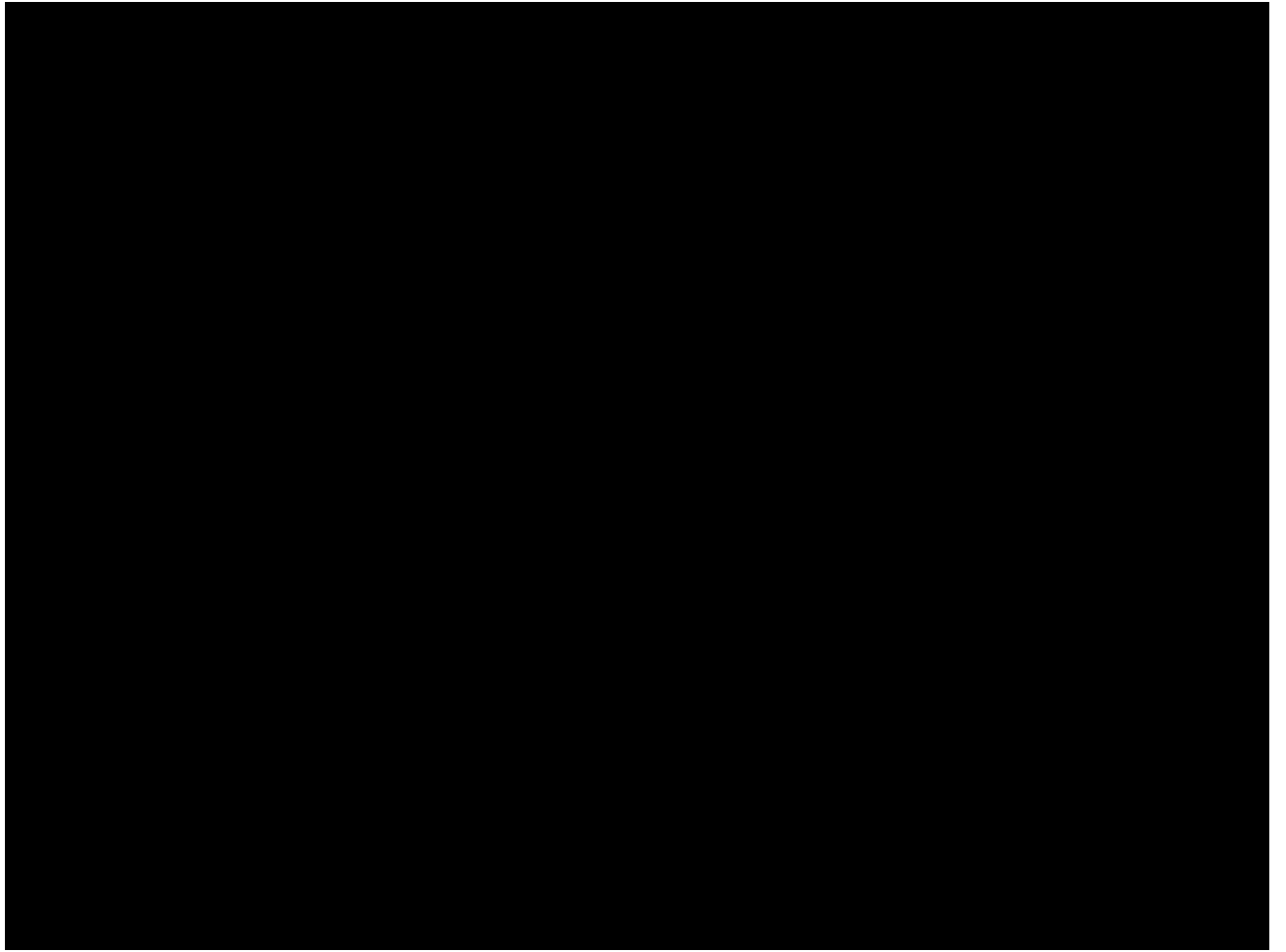
- Thickness of plastic
- Shaping of plastic
- Paper sticking to plastic

















# Citations for mood board:

- Solar panel: <https://www.wur.nl/en/Research-Results/Research-Institutes/Environmental-Research/Programmes/Green-Climate-Solutions/Climate-smart-agriculture.htm>
- Disasters: <https://www.wionews.com/india-news/double-crisis-natural-disasters-dont-stop-for-coronavirus-308890>
- Garden bottles: <https://www.thisiscolossal.com/2013/02/urban-vertical-garden-built-from-hundreds-of-recycled-soda-bottles/>
- Plastic Chandelier: <https://www.bouf.com/vendors/sarah-turner-eco-art-design/>
- Bottle top lamp: <https://smartrecycleideas.wordpress.com/2014/08/13/creative-plastic-recycling-ideas-for-plastic-straws-1/>
- Rubble image with tree: <https://www.weforum.org/agenda/2019/12/extreme-weather-climate-change-displaced/>
- Colour palettes: <https://www.color-hex.com/color-palette/45299> and <https://www.schemecolor.com/earthy-green-and-brown.php>
- Street light: <https://www.ready.gov/power-outages>
- Liter of light street light: <https://revolve.media/circular/liter-of-light-repurposes-bottles-rural-communities>