Recycled Bottles into Lifesavers

By Arwen Malavong

What is my plan with this project?

1. Create a floatation device that’s cheap and sustainable,
2. Look into where this device could be used and be helpful in.

The Problem in Real Life

Globally over 1.3 billion plastic bottles are used every single day. Which is an alarming rate as a study done by Science Advances estimates that 79% of all the plastic ever made is either in a landfill or polluting the environment.

Design Concept

My design concept initially was using zip ties to connect the middle of the water bottles I have collected, but it didn't work out as I thought, so instead I used masking tape to wrap around the bottle's midsection and the bottoms. After connecting them together with tape, I lined them up horizontally for a bigger surface area.

Testing the concept

Does the concept work well enough as a replacement?

- The plastic bottles floated well without aid
- It held a good amount of weight for the amount of bottles I have collected(12)


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My discoveries

What did I learn after testing?

1. Putting the bottles together horizontally isn’t as buoyant as constructing them vertically
2. Masking tape is alright as a connecter but not for the long term
3. The plastic inside the bottles made it less buoyant

Should this project be implemented?

- Cost effective
  - The cost to make these floats at most is $15 depending on what is wanted to be used to connect the bottles
- Impacts the environment
  - Reduce plastic waste by repurposing trashed plastic bottles
- Replicable
  - The floats can be recreated and adopted in areas prone to floods