Title: Bottle Rocket

Engineering Challenge

July 20, 2022

Problem Statement: Write the problem statement in your own words and interpretation. What are you trying to achieve? What is being learned through this challenge?

The objective of this challenge is to figure out a way to build a flying rocket using a plastic bottle and other everyday objects. This challenge helps to learn the basics of aerodynamics on practice.

Materials: List the materials given (if any).

Coca Cola 2L Bottle
Tape
Cardboard
Construction paper

Approach: Write a description of your plan to achieve the goal of the problem statement. Add drawings/sketches/CADs if possible.

We started by sketching potential designs. After everyone in our group made such a sketch, we combined the three designs to make the most optimal one. After that we cadded it on TinkerCad and completed the BOM.

Solution: What is your solution to the given problem?

Then we simply used cardboard to make the fins, bottle to make the base, construction paper to make cover and after taping all the elements the rocket was done. On the launch day we filled the bottle with approximately 300g of water and it was ready to fly.

Analysis: After testing, did it achieve your goal? Either way, what could you have done better? If given more time/materials, what would you do differently?

Our rocket failed to fly straight and went backward. In hindsight, I believe this is because of the incorrect placement of fins. Also, I would use plastic to make the fins if we had been given this material.

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