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Technical Description Samples (note: these samples do not have Results, which you need)

Sample 1

Technical Description of the Final Design

The body of the rocket was not compromised whatsoever. The label of the two-liter bottle was taken off. The fins are rectangular in nature but curved to fit the bottle on one side to allow for easier placement (Figure 1). The straight edge facing the back of the rocket and front of the launcher measures 2 and ¾ inches. The straight edge horizontal to the body of the rocket, but not touching the body, measures 4 and ¾ inches to the point where it slopes. The sloping edge is 2 inches long exactly. When placed on the rocket, the fins start 5 and ½ inches from the very front end of the body and end exactly flush with the end of the rocket. There are three fins each placed 120˚ from each other on the body. They follow horizontally with no angle in certain trials (Figure 2). In other trials, the fins are angled 2.5˚ to the right of the horizontal (Figure 3). The clay mass is a different amount of grams depending on the trial. It is spread over the front of the rocket in the five dents making a star shape following the contour of the body (Figure 4).

Sample 2

Technical Description of Final Design

The Bottle Rocket is a typical 2 L Coca-Cola bottle that has been transformed to increase the length of trajectory. These additions include foam board fins and clay to allow for a longer, more direct flight (Figure 1 and Appendix A). The mass of the assembled rocket without water is 163.7 g.

Materials

The duct tape is lime green with threads running in both the horizontal and vertical direction, and easily adheres to the bottle, foam, board, or clay. The foam board consists of two pieces of smooth stock board with light-weight foam in between, and is 0.25 inches thick (Figure 2). The clay sticks to the bottle and duct tape, and adds weight to the rocket. Although it has been exposed to the air, it is malleable, yet holds its shape. The clay conforms well to the curves of the bottle and nose.

Body/Nose

The bottle is empty, and does not have a label or cap. The top of the bottle is the back of the rocket, which is the end that is placed on the launcher. The mouth of the bottle has a diameter of about 1 inch and the neck is about 1.5 inches. The body of the rocket is 12 inches and has a diameter of approximately 4.25 inches. The plastic is flexible, and only a few millimeters thick, but firm enough that it holds its shape, the weight of the clay and withstands the pressurized air. The nose consists of only eighty-six grams of clay in a cone shape, with a blunt tip. The mass of the clay is distributed evenly.

Fins

There are three identical foam board fins on the rocket. The longest side is 10.75 inches, and the side, which attaches to the rocket, is 7 inches. The third side of the triangle is 5 inches and is the side closest to the back of the rocket (Figure 3). The edges of the fins are straight and come to points. The front tip of the fin is attached to the bottle where the curve of the nose begins. The three fins are evenly spaced around the bottle at 120º (Figure 4). Two pieces of duct tape, each approximately 7 inches long, are on both sides of the fin for stabilization.

Sample Full Rocket Figures (not related to descriptions on prior page)

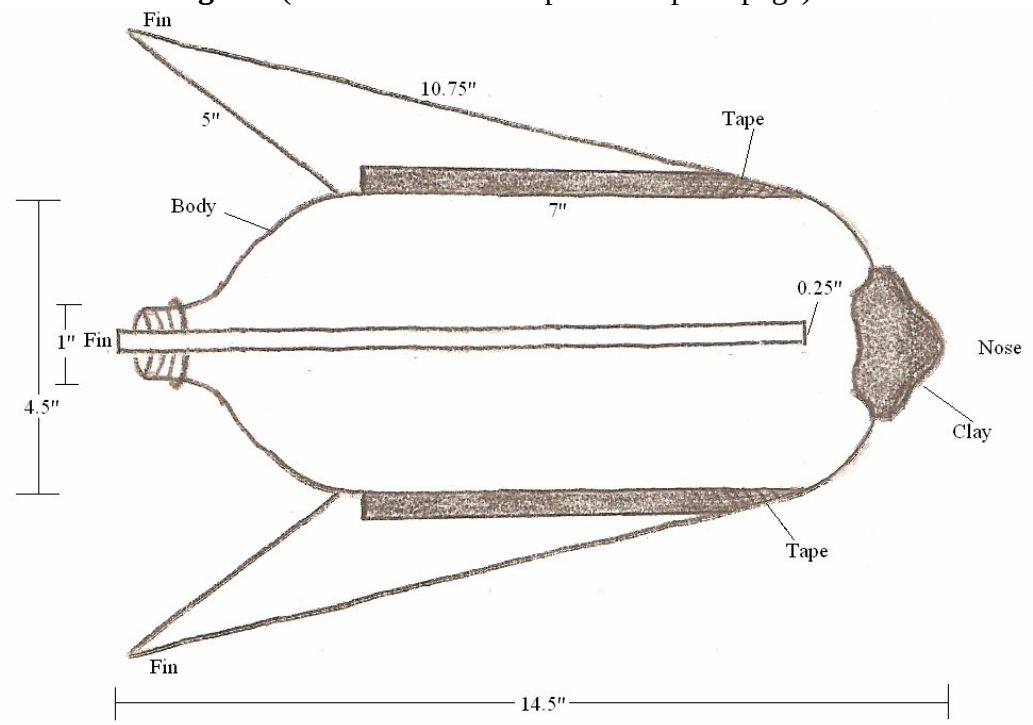

Figure 1. Full View of Rocket

This is a diagram of the rocket fully assembled. The body of the rocket is a 2-L Coke-Cola product with three foam board fins evenly spaced apart. The nose is made of only modeling clay and duct tape is used to hold the fins to the bottle. These additions to the rocket have been made to increase the horizontal distance of flight. The mass of the rocket is 163.7 grams.

Figure 2: Photograph of Real Rocket

A photograph of the real rocket has been taken and placed into the report. This shows precisely where everything is located, and how everything was mounted. The clay is molded into the grooves of the soda bottle, and the fins are fixed to the body with duct tape. The least amount of duct tape was used in hopes of a lighter design and decreased drag.