INTRODUCTION

OBJECTIVE

- Water rocket with maximum time of flight
- Prevent harm to the surroundings
- Combine our varied educational and cultural backgrounds to achieve an optimal result
- Have fun

METHODOLOGY

CONE

- Sharp edge to reduce drag
- Space for the parachute
- Attached to the body with a string

PARACHUTE

- Folded and cut into a symmetrical octagon
- Hole in the middle to avoid concentration of stress
- 4 briddles symmetrically attached at 8 points

BODY

- One intact bottle
- Tennis ball at the top gives the weight (Pushes Cg forward)
- Taped at the nozzle for smooth surface
- 1/3rd of the bottle filled with water

FINS

- 4 cardboard fins symmetrically placed around the body
- Cantilever support to prevent bending
- Sized in proportion to the bottle
- Keeps centre of pressure at the bottom

SAFETY & SUSTAINABILITY

- Strong PET bottle to bear the pressure
- Avoided sharp edges except at cone
- Observed safety regulations
- Fins covered with duct tape to make them waterproof
- Reused and reusable materials, including the tennis ball

INNOVATION

- PARACHUTE DEPLOYMENT MECHANISM
  - Parachute attached to the tennis ball
  - Tennis ball placed under the parachute, attached to the body
  - Cone falls off as the rocket rotates
  - Tennis ball pushes the parachute out
  - Rubber bands attached at the end of briddles, absorb any sudden impact
  - Deodorant powder prevents the parachute from sticking

RESULTS & DISCUSSION

- Brainstorming, discussion and plan outline
- Task division
  - Rocket construction
  - Poster design

REFERENCES

- A guide to building and understanding the physics of Water Rockets – www.npl.co.uk/waterrockets
- Google