

ENGINEERING AERIAL EGG DEPLOYMENT SYSTEM

INTRODUCTION

Utilizing every day materials, teams will construct an Aerial Egg Deployment Safety System. During this challenge teams will consider and discuss basic principles of engineering and physics to create a project that will allow a raw egg to be dropped from varying heights dependent on age group and provide the correct amount of cushion and secure placement to ensure that the egg does not crack upon hitting the ground.

OBJECTIVES

- Demonstrate respect for others while considering multiple means of problem solving
- Use of effective communication between team members
- Work cooperatively and collaborate with other Club members to solve engineering problems
- Practice green building techniques by utilizing the least amount of materials to construct Deployment Safety System
- HAVE FUN!

STEP-BY-STEP CHALLENGE

1. At the start of the Challenge, each team will be given a kit containing an equal amount of materials and \$100 Fun Dollars to spend at the Techathalon Outlet Store. Included in the kit is an explanation of the point system which will be utilized to effectively critique each teams engineering solution.
2. Teams will be given 5 minutes to caucus about ideas for a potential Aerial Egg Deployment Safety System and consider the materials they have been given, as well as their additional budget. Within these five



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minutes teams may visit the Techathalon Outlet Store once to purchase additional materials.

3. After the initial caucus, teams will have ten minutes for their initial build period. During this initial build period, teams may consider whether they have a need for additional materials or if they potentially have a surplus of materials. After this ten minute period teams will have one more opportunity to visit the Techathalon Outlet Store and either purchase additional materials or sell surplus materials. This will be the last opportunity teams have to utilize their Fun Dollars.
4. Teams will then venture outside with their final supply of materials to receive their egg and begin final construction. From this point each team will have 7 minutes to complete their projects.
5. After the final construction window, teams are to line up to have their creations tested. For Rookies, the drop point will be 24". For Amateurs it will be 42". For professionals it will be 60".

RESOURCES PROVIDED

All teams will be provided with an equal amount of the following: 6" lengths of masking tape, straws, popsicle sticks, blank paper and markers.

JUDGING

All teams will be judged using an identical rubric. Allowances have been made for age differences during the challenge. Judging will be completed by trained volunteers. Teams will be judged in effectiveness of Aerial Egg Deployment Safety System, use of materials, creativity and teamwork.