

Design Challenge: The Egg Drop Landing Pad

Your customer is a major grocery store chain.

Extensive marketing research shows that customers are more likely buy eggs if they are able to open the carton and inspect the eggs before they are selected for purchase. However, because of this, the eggs are susceptible to accidental dropping by the customer, resulting in loss of inventory for your potential client.

The grocery store chain has invited you and other engineering teams to design a “landing pad” area around the product case that will protect eggs from being dropped from as great a height as possible – at the minimum, a height of one meter.

Because eggs are a low cost item, the landing pad must be as cost effective as possible; the smaller amount of resources used the better.

The contract will be awarded to the team that presents the prototype with the greatest durability (protection from a fall of the greatest height) and cost effectiveness (least amount of resources used) – and/or anything else that the review committee comes up with at the last minute.

Each team will be given **ten sheets of paper and one meter of tape** with which to construct a prototype of their landing pad using the following guidelines.

1. The landing pad must be free standing, and nothing may be attached to the egg.
2. Heights will be measured from the bottom of the egg to the top of the landing pad.
3. Each team will be given one test egg to be used during the construction of their landing pad and an additional egg to be used in the competition. Even if the test egg survives during the construction process, it may NOT be used as a replacement in the event that the competition egg encounters disaster during the presentation.
4. Eggs will be examined for cracks after each drop. In the event of a crack, credit will only be given for the last successful drop height.
5. Teams whose eggs miss their landing pad will be eliminated from further consideration.
- 6. Teams whose eggs survive the initial impact but roll off the landing pad and crack will be eliminated from further consideration.**
7. In order to determine the most successful design, eggs will be dropped from successive heights starting with 1.0 m, then 1.5 m, 2.0 m, etc.
8. At the time of the presentations, each team must report the amount of resources used. In the event of a tie in successful drop height, the team that used the least amount of resources will be awarded the contract – declared the winner.