

MSE Egg Drop Contest Official Rules

1. The competition is sponsored by the Department of Materials Science and Engineering, the Materials Advantage student chapter, and student chapter of the Society of Plastic Engineers with the intent that the entries focus on materials selection. The objective is to design a device with a focus on the materials used that will protect a plastic egg half filled with water and a non-spherical marble (as a surrogate for a chicken egg) from breaking when dropped.

2. The score will be calculated using the following equation. The lowest non-zero score wins:

$$score = \left[30 \left(\frac{W}{31} \right) + 30 \left(\frac{N}{8} \right) + 40 \left(\frac{DZ}{2} \right) \right] EIF$$

W = weight of the device in grams

N = Number of parts

DZ = Drop Zone

EIF = Egg Integrity Factor (1 is not cracked or 0 if cracked)

As can be seen from the above equation the goal is to design a device with the lightest weight, the fewest number of parts, and the most accurate drop to the Drop Zone target.

3. Plastic eggs filled halfway with water and a marble will be provided on the day of the contest. While not precisely as fragile as chicken eggs, the eggs crack when dropped “naked” from 6 feet.
4. Each device will be weighed at the contest. The weight will be measured in grams with no plastic egg/water/marble inside.
5. The number of parts used for the device will be counted on the day of the contest. Each individual piece will count as one part. Gases, other than air, are not allowed.
6. First, second, and third places will be awarded.
7. The entire device must be above the drop plane (even with the top of the railing) when released. It cannot be in contact with the ground, a person, or a structure. For example, a long slide may not be used to transport the egg from the balcony to the ground.
8. The Drop Zone will be comprised of three concentric rings: two, four, and six feet in diameter. A land entirely within the innermost ring will be one point, in the second ring will be two points, in the third ring will be three points, and outside of all the rings will be four points. The device will receive points based on the outmost ring in which any part of the device lies.
9. Anyone or Team may enter multiple devices as long as each design is unique.
10. Three modified drops will be allowed.
11. A panel of three judges will determine if each entrant follows all contest rules.
12. Drop height is approximately 32 ft.