



EGG-DROP COMPETITION

General Rules:

The contestants shall design and build a shipping container that will prevent an uncooked chicken egg (Grade A Large) from cracking when dropped from an initial height of 15 meters. Surviving eggs from the initial drop will then be taken higher and dropped a second time. The container must be less than 800 cm³ in volume, with no single dimension longer than 25 cm. The maximum weight, including the egg, cannot exceed 1,000 grams. Contestants must be able to remove the egg without damage. A maximum of 30 seconds will be allowed to place the egg in the container and remove it.

Materials:

Any material may be used in the design, as long as the structure meets the design requirements and contest rules.

Requirements:

1. No kits or pre-made designs may be used. The structure must be the team's invention.
2. The structure must be completely released (no strings or other attachments). **No parachutes.**
3. The structure must land in a designated target area.
4. No propulsion systems will be allowed.
5. No gases (e.g., helium) other than air can be present in the structure when it is weighed.
6. Inside air space will not be subtracted out. Volume will be calculated based on the shape of the containers.

Judging:

1. Grade A large eggs will be supplied at the contest. You cannot bring your own egg.
2. All containers will be inspected by judges before they are dropped.
3. Once an egg is weighed-in with the structure, that egg cannot be exchanged with another.
4. The egg must be placed into the container on-site. A maximum of 30 seconds will be allowed to place the egg into the container and remove it. Exceeding this time limit will lead to disqualification from the contest.
5. If the egg is damaged during placement in the container, the team will be disqualified.
6. The egg must be undamaged after the drop in order for the value to be recorded.
7. The score will be based on the equation:

$$S2 = \frac{75S}{(W + L^2 + V)}$$

Where S is the success factor with values:

$S = 100$ if egg does not break

$S = 1$ if egg breaks

$W =$ Weight (grams)

$L =$ Longest dimension

$V =$ Volume (cm³)

$S2 =$ Total points value

8. The eggs will be dropped from an initial height of 15 meters; The second and final drop will be from a height greater than 15 meters.
9. The winner will be determined by the team with the highest score ($S2$).

NOTE: Containers must meet volume requirements to qualify for competition.

**Egg-Drop Competition
(Evaluation Worksheet)**

Check one: Middle School High School

School Name: _____

Team Name: _____

Students' Names: _____

Judge's Name: _____ Date: _____

This section to be completed only by the judges.

L= _____ Longest Dimension (centimeters)

V= _____ Volume (cm³)

W= _____ Weight (grams)

S= _____ 100 points if the egg does not break; 1 point if egg does break

$$S_2 = \frac{75S}{(W+L^2+V)}$$

S₂= _____

DROP #1		
Survived:	Yes	No

DROP #2		
Survived:	Yes	No