

Introduction to Momentum and Energy; Egg Drop Rules

Basic concepts of momentum and energy defined.

EGG DROP

Design a vehicle to transport an egg from a 5 meter drop (balcony to concrete) dropped from rest, that meets the following conditions:

The egg must survive.

A = egg doesn't break

B = egg cracks

C = egg leaks

D = parts go flying

F = 50% , rules broken (doesn't qualify)

The rules are (simulating the engineering challenge facing a car designer)

You can only use the materials listed below.

10 paper clips

100 standard straws (bendy is ok)

hot glue

string (10 feet)

tape (only to connect things)

4 rubber bands

1 egg carton cup

1 sheet of notebook paper 8 1/2 x 11

1 piece of foil (1 foot square max)

1 quart size baggie

1 balloon

Construction goals

The vehicle must have a door

The egg must be removable (i.e, not permanently attached)

Grade A large eggs will be used

No flying or floating; no parachutes or lighter-than air balloons, propellers or wings

A window must be provided 1 x 1 inch where the egg can be seen during the drop

Maximum size 2ft x 2ft x 2ft (so it will fit on the road)

During the drop the BOTTOM of the device will be at the specified height. You will drop the egg on my signal. The ground will be concrete covered in plastic.

Do not use glue, tape and string for building materials or structural members. These things are only for connecting other things together.

You may cut parts apart such as straws or the plastic bag.

Bonus prizes awarded for best looking (successful) car and car with the smallest overall mass prior to the drop.