EGG CRASH!
DESIGNING A COLLISION SAFETY DEVICE

PURPOSE: To design, build and test a landing pad or “safety device” to protect an egg during a collision with a hard surface.

INFORMATION:
In a collision between any two objects, an impulse is going to be imparted that causes a change in the momentum of the moving object. A classic example is when the seatbelt in your car imparts an impulse to you to stop your forward motion (in other words change your momentum,) and do so in a manner that allows you to survive the ordeal.

In this case the moving object will be an egg falling towards the ground, and the device to impart the impulse must be built by you so that the egg can survive the ordeal.

MATERIALS:
1) No more than eight (8) sheets of computer paper.
2) No more than 50cm of masking tape.
3) One pair of scissors.

PARAMETERS & RULES:
1. Groups may use less, but no more than 8 sheets of paper, and 50cm of masking tape.
2. Scissors may not be part of the Collision Safety Device.
3. Collision Safety Devices must be free-standing. Teams cannot support their devices by holding them or taping them to another structure.
4. Nothing may be attached to the egg.
5. Dropping height will be measured from the bottom of the egg to the top of the Collision Safety Device.
6. Eggs will be dropped by a member of the Device’s design team.
7. Eggs that miss the Collision Safety Device when dropped are eliminated.
8. Eggs that survive the initial impact but roll or bounce off of the device and break are eliminated.
9. Teams that break their egg by accident or carelessness are eliminated.
10. Eggs will be inspected before and after each drop and must not show any cracks. Rulings by the teacher are final.
11. Devices must be completed within the time limit of 20 minutes.
12. In order to simulate car crashes with greater momentum, the eggs will be dropped from successively greater heights, at an interval of 0.50m.