

*UNDERSTANDING CAR CRASHES: WHEN PHYSICS MEETS BIOLOGY ACTIVITY***PAPER CAR CRASH!****PURPOSE**

The purpose of the Paper Car Crash Contest is to apply your science and engineering knowledge and skills to design and build the most crashworthy car that includes a minimum of three safety design features. The winning car's crashworthiness will be based on two criteria:

1. The car with the greatest momentum at the time of collision, and,
2. A car in which the occupant (raw egg) is neither injured (cracked shell) nor killed (broken shell) as a result of the collision.

**MATERIALS**

Provided by teacher for each student or pair of students

- Two sheets (8½ in. x 11 in.) copy paper
- Four wheels
- Two axles
- One plastic drinking straw (only to be used for axle housings)
- One large, Grade AA raw egg
- Glue and hot glue guns
- Scissors

**RULES & SPECIFICATIONS**

1. Maximum car width: 6.5 centimeters
2. Maximum car length: 16.5 centimeters
3. Glue, paper, wheels, axles, and the straw-axle housing are the only construction materials allowed. The entire frame of the car must be made of paper and glue.
4. Vehicle designs must allow for easy access to and removal of the egg (occupant) for inspection after the crash.
5. Vehicle designs should be able to withstand 2-3 trials/collisions without parts replacement or repairs.
6. There can be no physical contact between the vehicle and the designer once the vehicle has been released onto the track.