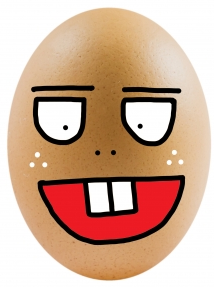
**What factors influence forces during collisions?**

*In our everyday life, safe travel is of high priority. When travelling by various vehicles the most important consideration is the safety of passengers. When developing safety equipment, it is important to understand the forces affecting the body during collisions.*

**To understand the interactions during collisions, we recommend studying the effects of impact on an egg.**

**A. What factors make it possible for the egg to land safely?**

**1.1 As a team, collect the factors that affect the egg during collision.**

**1.2 Design an experiment in groups of 3-4 to study the factors of collision.**

**Equipment available: *tray, rag, bucket, deep bowl, tape measure, ruler, stopwatch, box of eggs, digital balance, water, semolina, flour, sand, balloon***

**Check with your teacher if you need additional equipment/materials.**

Don’t forget to identify variables: an *independent variable* (that changes), a *dependent variable* (that you measure or observe) and *the constant variable* (that you choose to be constant).

**B. From how high can you drop an egg into a bucket of flour   
without breaking it?**

**2.1. The group should consult with the teacher before going ahead with the experiment.**

**2.2. Plan the procedures and record the expected outcomes.**

**2.3. Perform the experiment and write down your observations.**

**3.1. According to the previous experiment, estimate the height from which an egg can be dropped into a bucket of flour without it breaking.**

**3.2. Compare the estimates of various groups, select the most probable one.**

**3.3. Proceed with the experiment.**

**4. Consult with your group on how the observations correspond to the mechanisms of safety equipment in vehicles.**