

## ACTIVITY

### EGG-TASTIC!

Your challenge is to build a crash helmet for an egg so that it can fall 1.5 m without breaking!

#### WHAT YOU NEED

- A variety of different materials (e.g. straws, egg cartons, Polystyrene packaging, cotton wool, furniture foams and cardboard boxes) - whatever you can get really.
- Sticky tape
- An egg
- Scales
- Plastic sheeting



#### WHAT TO DO

1. Make sure the area is covered in plastic sheeting, as this activity can get messy!
2. Take your egg and carefully (!) weigh it.
3. Your challenge is to use the materials you've been given to design and build a crash helmet for the egg. Think about a human crash helmet - you have a layer of soft comfort foam, then hard polystyrene type foam and a hard outer layer.
4. Place your egg inside the helmet and weigh it again.
5. Take the first weight away from the second weight and you get the weight of the helmet.
6. Now drop your egg, in it's helmet, from a height of approx. 1.5 m
7. Did it break?!!
8. Now compare your helmet to the one your mate has built. The lightest helmet in which the egg survives wins!

This activity was donated to us by the Metallurgy and Materials Science Department of the University of Birmingham. (See <http://www.eng.bham.ac.uk/metallurgy/>)

**EXTRA:** Play with gooey, stretchy, green slime!

#### WHAT YOU NEED

- Borax powder approx 4% solution (you can buy this in the local chemist)
- white glue (PVA), water, food colouring, a container with a good seal (e.g. a jam jar), plastic cups and a teaspoon.

#### WHAT TO DO

1. Take a 1/2 cup of water and stir in 3/4 teaspoon of borax. Mix for 5 minutes. Mix 1/4 cup glue with 1/4 cup of water.
2. Add a few drops of food colouring. Pour 3/4 of the borax mixture and 3/4 of the glue mixture into the container.
3. Put your lid on and SHAKE!! Your slime is then ready to go...!
4. Can you stretch it, bend it? What happens if you punch it?!

**Warning:** Borax is detergent. It may cause a skin irritation so wash your hands after use or wear rubber gloves.

#### WHY?

The borax makes the glue molecules stick together to make long stretchy chains that makes up your slime.