Water Balloon Experiment

On SCOPE's Destruction Science episode, Jess experimented with water balloons! Here's how you can try this experiment yourself:

What you need:

Water balloons (at least 3 different colours)
Ruler
Measuring tape (or metre-long ruler)
Water
Pencil and paper to record your results

What to do:

1. Separate your water balloons into three piles of colours.
2. Fill up the water balloons with different amounts of water depending on their colour. Use your ruler to measure the balloons as you fill them, so that one colour is 5 cm wide, one is 6 cm wide and the last is 7 cm wide. If you like, you can use more colours and experiment with other widths.
3. Use the measuring tape/ruler to measure 50cm off the ground and drop 3 water balloon of each colour from that height.
4. Record how many of each colour burst.
5. Do the same things at 1m, 1.5m and 2m above the ground.
6. If you like, try the experiment on different surfaces too, such as cement, wood or grass.

What's happening?

The more water you put in a water balloon, the more the skin of the balloon is stretched. The more the skin is stretched, the thinner it is, and the balloon becomes less resistant to impact and easier to burst. This means you need less force to burst a balloon with more water in it.

The higher you drop the water balloon from the ground, the faster it is falling when it hits the ground, which means more impact for the balloon.

Different surfaces can be harder or softer, so a surface like grass will cushion the balloon as it lands, protecting the water balloon.