

Camp@Home - Activities

This activity idea was originally part of a Durham Scouts [Camp@Home](#) event. It has been adapted for broader use as part of the Scouting from Home programme

Activities at home should always be risk assessed and supervised by parents/carers, taking note of the specific safety advice provided



Egg Drop

This is one for the older young people, and of course parents and other adults.

All you have to do is to drop an egg from the greatest height possible... without the egg breaking.

You can try all sorts of things – egg parachutes, putting the egg in a padded box, balloons, protecting the egg with foam. For some really good ideas check out the [Egg Drop Project](#) on Mark Rober's entertaining and educational YouTube Channel.



You can of course hold some trial runs – depending on how many eggs you have (to reduce food waste please use eggs past their 'use by' date)

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If you approach this activity from a scientific basis (e.g. (finding out about how the potential energy of the egg increases with height, how this energy is what breaks the egg, and how your protection dissipates that energy, and predicting what will work best to protect your egg) you could meet some of the requirements the Cubs Scientist Activity Badge or Scouts Scientist Activity Badge.

Here's the Science Bit!

To keep your egg intact you'll need to reduce the force acting on the egg when it hits the ground.

This force depends on a few things:

- The weight (mass) of the egg
- It's speed when it hits the ground
- How quickly it slows down (or decelerates) when it hits the ground
- The force being absorbed by other things

$$\text{Force} = \text{Mass} \times \text{Acceleration}$$

We can't do much about the weight (mass) of the egg - but a smaller egg will help.

The deceleration is dependent upon the speed at which the egg is travelling when it hits the ground. This is dependent upon:

- How far the egg falls (which you want to maximise)
- The air resistance of the package in which the falls (which you also want to maximise)

We can also try to reduce the deceleration (in the formula above, acceleration is negative acceleration). This is done by increasing the length of time (duration) over which the egg decelerates – which you can do by adding ‘crumple zones’, which also absorb some of the force.

When designing your egg drop package you should therefore:

- Use a small egg
- Slow it down by increasing air resistance (think ‘parachutes’)
- Adding crumple zones – something to compress or bend when the package hits the ground.

Safety Tips: if you are dropping your egg out of an upstairs window, be careful not to lean out of the window too far. If necessary, have someone hold the back of your belt / waistband while you drop the egg out of the window. Also be careful if dropping eggs from the top of the stairs, from garage roofs etc.

As a variation on this activity, why not see if you can safely land your egg in a bucket?

This activity can count towards the following Activity Badges:



Cubs Scientist Activity Badge

<https://www.scouts.org.uk/cubs/activity-badges/scientist/>

This activity could meet the following requirements:

2. Interacting with energy
 - Another activity agreed with your leader



Scouts Scientist Activity Badge

<https://www.scouts.org.uk/scouts/activity-badges/scientist/>

This activity could meet the following requirements:

Option 2

2. Plan and complete three science experiments or activities. Check your plan with an adult first, then for each experiment:
 - Change something about the experiment or activity and try it again, at least once. Predict what you think will happen and find out if you were right.
 - Show that you understand the science behind your experiment or activity.