



# STEM Eggstravaganza

## *Easter and Spring Themed Activities*

*We've brought together a number of fun, hands-on STEM activities around the theme of Easter and Spring. Enjoy!*

### **Carrot Toppers**

Growing carrots, or indeed other vegetables, is nothing new and simple to do. It is amazing, scientifically speaking, as we could call it 'cloning' – which seems like it should be something very futuristic and done in a high tech lab... Plants reproduce using seeds, but this requires 'sexual reproduction' and therefore, male and female cells meeting and producing an entirely new offspring. Asexual or vegetative reproduction is another way plants can reproduce – it makes a new plant all by itself, without needing another plant. This saves the plant energy. It works because the cells near the root are unspecialised and given right conditions, can turn into shoot, root and other specialised cells. Sometimes plant hormones are needed to get it going.

#### **How to...**

You will need:

Carrot top (2-3 cm from stem with some root growth remaining on top, this can just be from your usual carrots when preparing your dinner...)

Shallow dish/container

Cotton wool or kitchen paper

Water

Sunny, warm space

Add your cotton wool or paper to the bottom of your container. Add enough water to make the paper/wool wet, but not completely flooded. Push your carrot stump into the wool/paper, and then place the container in a sunny, warm space. Keep checking it to make sure the cotton will remains wet, and then watch the carrot top grow.

You could watch this video too: How to regrow carrots? Waste Watchers -

<https://youtu.be/uoE7nhkYf4E>

#### **Where next?**

Once you've got a carrot green and some roots developed, you can even try planting these out in the garden or a (deep) pot of compost and see if you can get a full carrot to grow.

You could investigate different vegetables, such as sweet potato, celery or spring onion.

Photo by [Markus Spiske](#) on [Unsplash](#)





## Egg Drop

### The Challenge

There are various versions of this challenge – different heights, different restrictions on the materials you can and cannot use. To keep it simple, drop the egg (hard boiled of course, we don't want any hygiene/food wastage issues!) from 1.5m and use any materials you can to make a protective wrapping for it. However, for greater challenge/older participants, you could restrict the materials used or the quantity to be used of each type of material. You could even give each material a 'cost' and set them a budget...

### The Science

The science behind this experiment can get a bit complicated! The fall of an egg is a combination of motion, influenced by gravity, as well as resistance/friction, and then the force associated with hitting the ground and the momentum 'wanting' the egg to continue moving. The protective materials for the egg have to absorb the force and dissipate the energy involved in the fall. There is also the secondary impact from the egg moving around inside any protective materials (as a result of momentum). The air resistance, slowing an object during a fall, is affected by the shape of the object too.

### You will need:

1 (hard boiled) egg per person taking part  
Various recycling/junk/craft materials  
Somewhere to drop it

Each participant needs to design and construct a protective case for the egg. The egg must be able to be placed in or removed from the structure freely – it cannot be stuck (with sticky tape or similar, for example) inside. The surface of the egg must not be altered – you cannot stick anything to or wrap anything around the surface of the egg, although you can draw a silly face if you wish!

Is yours a world record breaker?

<https://www.guinnessworldrecords.com/products/books/science-and-stuff-2018/make-and-break/highest-egg-drop>

### Where next?

You could try another investigation to design a vehicle to transport an egg: our Rollercoaster Exploring Engineering Challenge involves making a 'buggy' to transport the 'people' on the rollercoaster. The buggy normally holds a tomato, but an egg will work too. Find out more here:

<http://www.rochesterbridgetrust.org.uk/learning-activities/exploring-engineering-challenges/rollercoasters/>



Photo by [Annie Spratt](#) on [Unsplash](#)





## British Science Week Activity Packs

<https://www.britishtscienceweek.org/plan-your-activities/activity-packs/>

### Grow a cropmark

A fun experiment to do when you have some time to let it develop, is to grow a cropmark. In the 2018 British Science Week Secondary Activity Pack, this activity explains that cropmarks occur when there are ditches or features, such as a stone wall, buried underneath an area used for growing crops. Archaeologists can use these to explore what lies beneath and sometimes uncover exciting discoveries. In this activity you will grow your own cropmark!

### Watch beans grow

Another simple but effective experiment to do when you have time to let the plants grow, is to compare the growth of different types of beans (depending what is available in the shops). In the 2018 British Science Week Early Years Activity Pack, you grow seeds in clear plastic bags, so children can start to learn that seeds become plants, and plants need air, light and water to grow well. If you are lucky and grow your plants well, you might even be able to eat the results.

### What do bees do

Although this activity in the 2019 British Science Week Primary Activity Pack is designed for a class full of children, it could be re-worked to be an art/craft project at home: make some flowers to place around the home or garden, and move between them as the bee. There are some short videos to watch about bees and pollination as well.



Photo by [Eric Heiminger](#) on [Unsplash](#)

### Final eggstremely fun activity: Cress Egg Heads

This BBC Good Food instructional <https://www.bbcgoodfood.com/recipes/crackin-cress-heads> simply requires some eggs (save the contents for later – don't waste food!), cotton wool and some cress seeds. You can even decorate the egg shells.

