



Science of Eggs

In this Adventure, Beaver Scouts will test the strength of eggshells and learn how to make an unbreakable egg package. At the end, they come up with ideas to compensate for the eggs that might have been wasted through this process.



PLAN

- Find sources to get free eggs to reduce the cost of the activity. Farms or local grocery stores might be willing to donate the eggs that are just past the expiry date.
- You need to cover the floor for these activities to keep the possible mess of broken eggs contained. The best option is to do the activity outside.

DO

- For the **Walk on eggs** activity, arrange the boxes of eggs in a way that Beaver can walk on them.
- As Beavers walk on eggs, most should remain intact. If you have a large group, you can create multiple stations.
- For the **Unbreakable eggs** activity, Beavers should make a packaging that stops the egg from breaking when dropped from a specific height (start with a height of 60 cm, and then go up from there if there is time).
- To avoid the mess, you can put the package in a Ziploc bag.

REVIEW

- One idea to offset the waste can be to plant something in a garden, or volunteer at a community garden or park. Or, think about using plastic eggs.
- Remember to have Beavers recycle any packaging and materials you used that can be recycled.

SOME BACKGROUND INFORMATION ON THE STRENGTH OF EGGSHELLS:

Eggshells are very strong because of their shape and the material they are made of. The shell of a chicken egg is made of layers of calcium carbonate reinforced with protein. The dome shape of an eggshell can resist the pressure of heavy loads because it distributes weight evenly along the structure of the egg. The force that is applied to the outside of an object and pushes it towards its centre is called compression. The dome shape of the eggshell makes it strong in compression. It is hard to crush an egg by squeezing it on its ends. The force that pulls and stretches an object from the inside is called tension. Eggshells are tension-weak materials, so it is easy for chicks to break them from the inside when they are ready to come out.

SUGGESTED TIMING:

- Plan: 10 minutes
- Walking on eggs and holding the eggs: 2-3 minutes per Beaver
- Building the egg packaging: 30 minutes
- Review: 10 minutes

