# Food Chain Energy Game

**Year Groups:** P2-P7

**Delivery Time:** 30 minutes

**Set-up Time:** 10 minutes **Tidy-up Time:** 10 minutes

**Location:** A flat outside area with plenty of space.



**Summary**: Pupils work in teams to play the energy game: an exciting team game that illustrates how energy is lost through the stages of a food chain and why survival of one predator is dependent on so many prey animals.

**Equipment:** (for 3 teams of 10)

- 6 x large water bottles (1.5L)
- 12 x buckets
- 35 x disposable cups
- 12 x Labels for buckets (3 each of Sun, oak tree, wood mouse, barn owl)
- 2 x 1L Measuring cylinders

**How to guide:**

In this game pupils are aiming to get as much energy through the food chain as possible. The water supplied to each team represents the energy from the Sun in one day. All the water starts in the Sun bucket, and energy is 'used' by the oak tree to grow, by the mouse to forage and by the barn owl to hunt and so is lost through the cups with holes.

**Instructions:**

1. Fill six 1.5L bottles with water.
2. Punch 6 holes in the bottom of 35 cups and/or cut slits in the side.
3. Label the buckets with 1 full set of labels per team (Sun, oak tree, wood mouse, barn owl).
4. Lay out buckets in 3 rows of 4 buckets, with 1 of each food chain component following the order above. You can space these out depending on the age of pupils and space available, but we aim for around 5 metres between each.
5. Fill the Sun buckets with 2 x 1.5L bottles.
6. Split pupils into 3 groups of ~10. Each gets a cup with holes. Divide pupils into roles, with 1 barn owl, ~3 mice and ~6 oak trees.
7. Each stage takes energy (water) from the stage before them on the food chain. E.g. mice eat acorns so they take on energy from the oak tree to build their own reserves.
8. Play until there is no water left in any of the buckets except the barn owl buckets.
9. Then pour this water into the measuring cylinders to see which team conserved the most 'energy' from the sun through their food chain.