

## Bottle Birdfeeders

### Teachers' Notes

This activity challenges your students to collect plastic bottles and other waste materials so that they can be reused as birdfeeders. The students will design and make their own birdfeeders and then use them to observe birds and other wildlife in their local environment.

In designing their own birdfeeder, the students must demonstrate their knowledge of the properties of the materials that they select in the construction of their birdfeeder.

In observing the visitors to the birdfeeders, the students will also gain a greater understanding of living things in their local environment.

### Overview

Students can be taught how to make one a basic birdfeeder using the suggested design. After this, students can be asked to create their own designs, collect the required materials and then build their own feeder.

Creating bottle birdfeeders offers the opportunity to introduce students to the waste hierarchy (waste reduction, reuse, repair, recycle, disposal) as a tool for dealing with a host of environmental issues brought about by wasteful societies (from dealing with litter to sustainable product design). It also gets students to think of waste materials as a useful resource rather than something to be discarded and forgotten.

Approximately 13% of household waste in Leicestershire is plastic. Each household throws away approximately 40kg of it each year. Plastic bottles are a great contributor to this total, and in the UK we use and discard approximately 15 Million every day.

Plastic bottles are collected for recycling across Leicestershire, and are subsequently recycled into a multitude of different objects. As the waste hierarchy suggests - recycling is much better for the environment than sending the bottles to landfill, and reusing the bottles is in turn better for the environment than recycling them.

### Curriculum links

#### SC2 Topics:

1a, 1b

2a, 2b, 2e, 2g

4b

5a, 5b, 5c

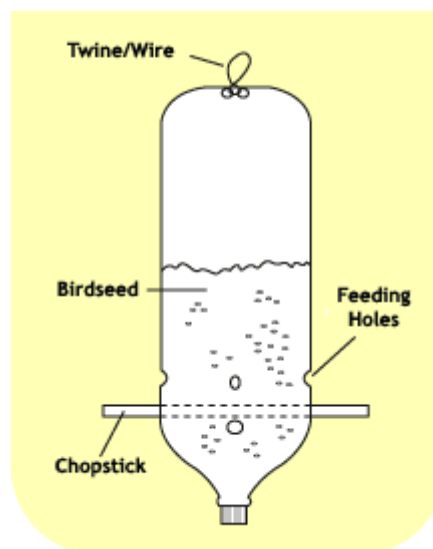


### Suggested design

#### Basic feeder

Cutting a couple of holes into a bottle to make feeding holes, threading through a twig for a perch or two, and filling it with seed makes a really quick but effective feeder.

Care needs to be given to the placement, size and shape of the feeding holes. Ideally the holes would be placed slightly closer to the bottom of the feeder – so that when the feeder is filled with seed, most of the seed is readily accessible for eating and not idly filling the bottle. The holes need to be large enough to allow access to the seed, but not so large as to allow all the seed to fall out if the feeder is blown by the wind.



#### Tip

Birds tend to prefer a feeding hole that is oval shaped, being slightly longer than it is wide. Perhaps ask your students to explore if different sized or shaped feeding holes affect the feeders popularity with local birds.

#### Equipment required

- One plastic bottle with labels removed and its cap left on.
- One permanent / dry marker per
- One awl, or a pair of compasses with a sharp point, or a craft knife
- One pair of sharp scissors
- String / twine or thin wire
- Birdseed
- Two twigs, unsharpened pencils, chopsticks, wooden spoons or lengths of dowel.
- Masking or Duct tape
- Optional – a stabilising weight

#### Method

Ask your students to use the dry markers and mark on the bottle where their feeding holes and perches are going to be placed.

Go round the class and carefully pierce the plastic bottles as marked with the awl or craft knife. Widen each hole so as to enable the students to cut their own designs out of the bottle with scissors.

Care should be taken when cutting out holes for perches. A small slit or cross shaped cut is likely to hold a twig or piece of dowel more firmly than a circular hole.



## Schools Recycling Challenge resource

If a student cuts a hole in the bottle that is larger than desired, simply use masking or duct tape to make repairs. If a student trims the plastic to produce a ragged edge, cover any sharp areas with tape. If necessary, secure perches with tape too.

When finished, carefully fill the bottle feeders with seed, and use the string or wire to hang them somewhere appropriate. The best designed feeders will hold the seed securely and not let it leak out of the access holes. If the access holes are too large to hold the seed, only fill the feeder partially with seed. Alternatively, pack the feeder with fatcake mixture (see separate lesson idea).

If necessary, attach a stabilising weight to the base of the feeder. This will prevent loss of seed in the wind, and also stop it swinging around when birds land on it to feed. Fatcake also makes an excellent stabilising weight (see separate lesson idea).

### More complicated feeders

Try a google image search for “bottle birdfeeder” and get some inspiration. Designs that use up materials that would otherwise go to waste are the best. Ask your students to draw and label a design of their feeder before making it, and / or ask them to draw a plan or map of the location that they intend to place the feeder – with reference to how and why this location has been chosen.

### Extension activities

Identify and keep a log of all the different bird (and other) species that visit your birdfeeders, making use of the RSPB birdfinder (see below).

Run an experiment to see if the birds prefer one design of birdfeeder more than another by hanging two together at the same time and place and monitoring the number of visits to each. Why do you think the birds prefer one feeder more than another?

Experiment with the recipe of fatballs to see if the birds prefer one recipe more than another. If so, why do you think the birds prefer some types of food more than others?

### Disposing of birdfeeders when you are done with them

Sometimes water can get inside birdfeeders which can make the seed go mouldy. Birds won't eat mouldy seed as it can make them ill. If this happens you can empty out the seed, wash the feeder and refill it. Alternatively, you can empty out the seed and then place the feeder into the plastic recycling collection point.



## Schools Recycling Challenge resource

### Find out more

Find out how plastic bottles are recycled in this video:

<http://www.recyclenow.com/facts-figures/how-it-recycled/plastic-bottles>

How to Reduce, Reuse, Recycle at school:

[http://www.recyclezone.org.uk/iz\\_fightwaste.aspx.html](http://www.recyclezone.org.uk/iz_fightwaste.aspx.html)

Why is it better to reuse than recycle? (video):

<https://www.youtube.com/watch?v=d1mFymbRmv4>

RSPB bird identifier:

<https://www.rspb.org.uk/discoverandenjoynature/discoverandlearn/birdidentifier/>

Take part in the Leicestershire & Rutland Wildlife watch -

<http://www.lrwt.org.uk/learn-discover/wildlife-watch/>

Take part in the Big Schools BirdWatch:

<http://www.rspb.org.uk/discoverandenjoynature/discoverandlearn/schoolswatch/>

Improve the school ecosystem:

- Plant trees <https://www.woodlandtrust.org.uk/learn/children-and-families/resources-for-teachers/free-trees-for-schools/>
- Grow Wildflowers <https://www.growwilduk.com/seed-kit>
- Get composting <http://www.carryoncomposting.com/142941455>

