



Free resources

The Why and How Challenge

The 'Why and How' Challenge is intended to be something for the staffroom table that lots of teachers will try.

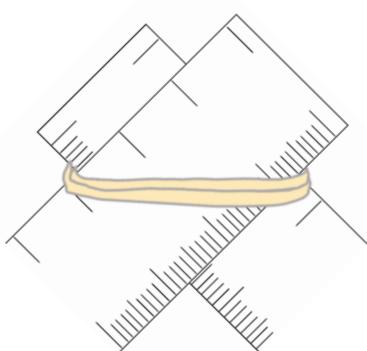
This issue's Why and How Challenge is an **OUTDOOR ACTIVITY** that will encourage the children to look at their natural environment with more purpose and accuracy. It can be run with small groups, a class or as a **whole school competition?**

Who can find the greatest number of living things?

WHAT TO DO

Each child or group of children needs to make a frame out of four 30cm rulers (Figure 1). The corners should be held together with elastic bands.

Figure 1



Give the children the challenge **"Who can find the greatest number of living things?"**

Tell the children that to:

- choose an piece of ground and put down their frame (Figure 2)
- identify how many different living things they can find inside the frame
- record what they have found
- choose another piece of ground and repeat the above

Figure 2



RESOURCES

30cm rulers – 4 per group of children

elastic bands – 4 per group of children

Hand lenses

Optional extra resources:

Collecting pots

Plastic teaspoons

Pooters

Metre rulers (or other longer sticks) for making larger frames

NB a frame like this with sides of 1m is used by scientists to mark out random areas to be surveyed. Its scientific name is a **quadrat**.



POINTS TO NOTE:

- The children should be encouraged to observe inside the whole frame and to use hand lenses
- Most of what the children find will be plants and they may need reminding that plants are living things
- Some plants will be hard to spot amongst other plants - what looks like only grass is likely to be more than that
- Children should look for how many **different** living things they can find – they can only count each type once
- The children could take photographs of their frames in different places and annotate these with what they found when they are back in the classroom
- There is lots to discuss with the children while they are doing the activity and afterwards: what plants and animals need to survive; the environment inside their frame (damp/dry, sunny/shady, windy/sheltered); the types of plant there (tall/short, dense/sparse); the types of animal there (small/large, insects/molluscs/others, how they move, what they eat); why they think particular plants or animals were found there.

VARIATIONS

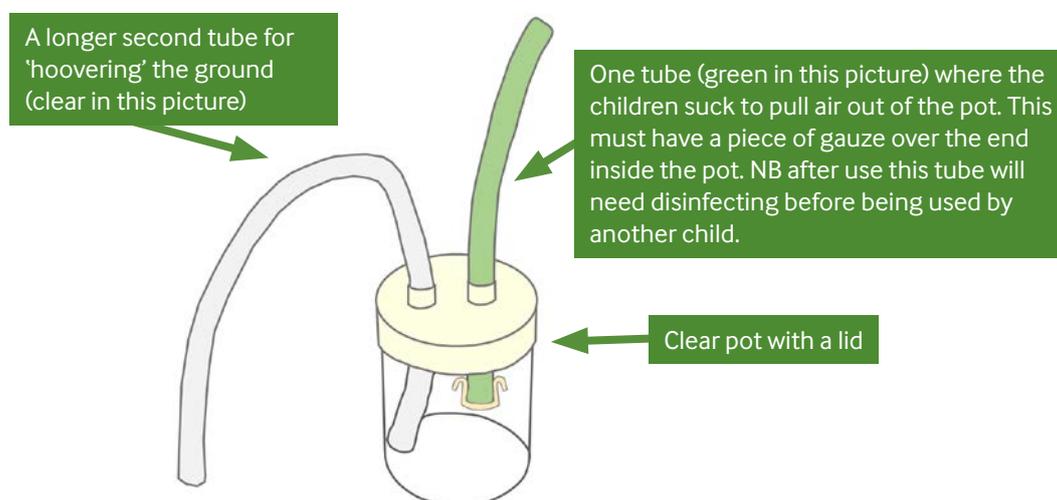
- Use metre rulers to make the frames. You could also use hoops or string loops. Note that using string loops will make it tricky to ensure that the same survey area inside the loop is created each time. This could however generate some interesting maths discussions about the relationship between perimeters and areas of shapes.
- Ask the children to look at and count only plants, or only animals – discuss with them how will this affect where they choose to look
- Collect animals using a pooter (Figure 3)

RULES FOR THE WHOLE SCHOOL COMPETITION

Each class carries out the challenge and then submits a photo of their frame in the place where their class found the most living things - one entry per class.

Each photo should have a list of all the living things they found in the frame.

The photos are compiled as a slide show for the whole school to watch ... and the winning class is revealed.



Pooters are commercially available but it is possible to make your own

Figure 3