



Fruit Fly Trap and Breeder

Introduction

Insects make up 99% of the animal species on the planet. However, most of us understand little about the needs or life cycles of insects. The Fruit Fly Trap and Breeder allows students to observe fruit fly development and reproduction in the classroom in a practical and manageable way. Further, it serves to trap and breed fruit flies as a source of food for carnivorous insects and plants.

Construction

Cut a 2-liter bottle as illustrated. Place a piece of fruit (banana works well) in each of 3-5 film cans and place in the bottle bottom. Let the breeder sit inside or outside (if warm) and eventually wild fruit flies will be attracted to the fruit and will fly in through the hole in the cap. In summer, you will see flies in a few days but it might take weeks to trap flies in the winter.

When disturbed, fruit flies will fly upwards and lodge in the sides of the trap. You can then access the film cans through the bottom minimizing the escape of the flies.



Flies will lay eggs in the fruit meat and in a short time larvae will hatch. Soon these larvae will become adults and will then be able to fly. At 24-27°C the fruit fly life cycle takes 10-14 days.

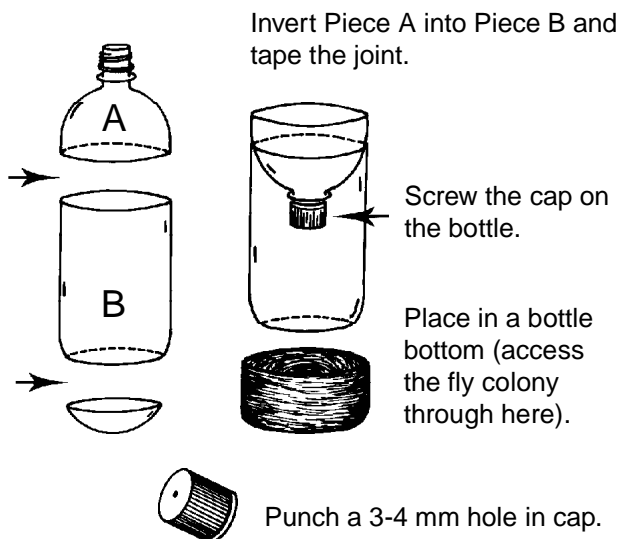
Tips

- Make sure the hole in the cap is large enough only to allow a single fly through—no larger!
- Setting the film cans on a plastic jar lid in the bottle bottom provides a stable platform for the film cans.
- **Tape the top joint.** Dislodging the top lid will free the flies!

Construction

Cut 2-5 cm below the shoulder, leaving 2-5 cm of the straight cylinder on the top piece.

Cut 3 cm below the hip, leaving 3 cm of curve on the straight cylinder.



- This construction can be used as a way to trap fruit flies from an unwanted area (such as near a compost column!)

Uses and Extensions

- Discuss what fruit flies eat. We suspect that the flies are not actually eating the banana but are spreading yeast on it. The yeast, which the flies carry on the pads of their feet and in their gut, then grows on the banana meat and the flies come back later and feed on the yeast. In this way fruit flies are really yeast farmers! Test this by covering half of the cans with mesh which excludes the flies. Compare the contents over the next weeks.
- Do fruit flies have fruit preferences? Explore which factors influence preferences such as color, odor, amount and pH.
- Once you have a film can with fruit fly larvae in it, transfer it into other bottle habitats and the emerging flies can provide a food source.
- For carnivorous animals and plants, a single film can continues hatching new flies which will, in turn, lay more eggs in fresh fruit. By removing old film cans and replacing them with cans containing fresh fruit, the fruit fly colony can be kept alive for a long time.