Making an Eco Column

You need:
- 4 x 2 litre plastic soft drink bottles
- PTFE tape
- Cloth tape
- Quick drying glue
- Old tights

To remove the label from the bottles cleanly:
- Fill the bottle with hot water (not too hot, or it will buckle).
- Screw the cap back on the bottle and in a short time the label should peel off.
- Empty the water out of the bottle.

Safety Notes
- Always be very careful when working with hot water.
- Sharp scissors have to be used to cut the bottles: if you have a ragged cut edge on the bottle it may scratch fingers and hands. Care should be taken at all times.

1. Using sharp scissors or a scalpel, pierce a hole on the cutting lines of the bottle. Insert the upper blade of the scissors and cut the bottle, away from you, around the lines shown.
2. Check the bottom opening of bottle 1 fits securely over the top of the second bottle. Repeat step 1 on bottle 2, cutting around the lines shown in step 2.
3. Put a strip of PTFE tape around the rim at the bottom of Bottle 1 so that half the width of the tape is on the bottle. Fold the tape up inside the rim. Push the two parts together to give a tight fit.
4. Use a strip of cloth tape to stick the two parts firmly together. Fold the tape up inside bottle 1. You now have a complete eco-column unit.
5. To make the lid, cut a piece of bottle below the neck and again at the widest point below the neck. Use quick drying glue, and stick a pair of tights on the top.
6. To make the base, choose a 2 litre bottle with a coloured plastic base (more stable). Cut off the top below the neck and above the widest point, as shown.
7. Stack the column units together to make a column.

8. A pond can be established in the bottom. Add some mud, sand and gravel, pond water and a few pieces of pond weed.

9. An insect eating bog can be established above this. Venus fly traps, sundews and butterworts will grow well in these units. Grow them in a mix of 1:1 moss peat and lime-free sand. These plants do not like hard water, so should be watered with rain water or distilled water.

10. A fly ranch can be maintained on rotting garden compost, which will contain the eggs and larvae of small insects e.g. fruit flies. These will hatch out in the eco-column, and feed both the spiders and the insect eating plants.

11. A spiders den can be established in the top of the column.

Any small plants which can be grown in bottle gardens can be grown in an eco-column unit. If they grow too big they can be replaced with smaller plants.

All animals which you may be studying in the eco-column (insects, spiders, tadpoles and other pond creatures) are living things so should be treated with care and released back to their natural habitat at the end of the study.

Questions

1. How many different food chains do you have in your eco-column?
2. What does each food chain start with?
3. Do all food chains start with plants?
4. Make a list of everything you ate yesterday and turn that into food chains.