**Bottle Building Basics for an Eco-Column**

**Materials for each pair of students:**

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| 2-liter clear plastic soda bottles with bottle caps | 1 Binder Clip |
| 1 Pair of Scissors | 1 Metric Ruler |
| 1 Permanent Marker | Shoe box |

**Procedure:**

1. Fill the 2 liter bottle ¼ full with hot water(120°- 150°F). If the water is too hot the plastic will warp.
2. Screw the cap back onto the bottle. Tip the bottle so the water warms the sides. Peel off the bottle’s label. Repeat this for each of the bottles.
3. Label each bottle with a marker. One bottle will be “A” for Aquarium. Turn the next two bottles upside down and mark them “T” for terrarium and “D” for decomposition.
4. Using a box about the same length as the bottle label one end of the box “TOP”.
5. Measure 23.5cm from the top end of the box and mark this point “D/T” for decomposition and terrarium.
6. Measure 11cm from the top and label this point “A” for aquarium.
7. Place the bottle labeled “T” in the box so the top of the bottle is where box is labeled “TOP”. Make sure the cap is off of the bottle.
8. Place the binder clip on the edge of the box where it says “D/T”.
9. Push the outside loop of the binder clip down against the box. In the other loop place your marker. It should just touch the bottle.
10. One person should spin the bottle slowly while the other holds the marker still until a line is drawn all the way around the bottle.
11. Place the cap back on the bottle. The line can now be cut with scissors or a knife. (Save the base cut from bottle “T”.)
12. Next place bottle “A” in the box. Make sure the cap is off. Place the binder clip over the label “A” and repeat steps 10 through 11.
13. Place bottle “D” in the box with the cap removed. Put the binder clip over “D/T” and repeat steps 10 through 11.
14. You should now have bottle “A” which has the top cut off, Bottle “D” and “T” which both have the bottoms cut off. Refer to figure 1.
15. Poke a hole in each of the 2 bottle caps and run a string though them. These will be used to draw up water from the aquarium or to drain and filter water from the terrarium to the decomposition bottle.
16. Poke 4 to 5 holes using scissors or a knife in the cut off bottom of bottle “T” that was saved. This will be used as the lid and as a funnel to add rain to the system.
17. With bottle “A” standing up place “D” upside down so the capped side acts as a funnel going into “A”.
18. Next place “T” the same as before into “D” again acting as a funnel. Then add the lid. Refer to figure 2.

Figure 1: Figure 2:



D

D

