



THE ECOSYSTEM in a Bottle

** This activity can be modified to teach any age the cycles of nature or any concept in ecology from simple to very complex. The possibilities are endless!

* Materials are cheap and easy to find :
bottles, soil, pebbles, pond water, seeds, water plants or algae, moss, grass, worms, crickets, etc...

It will be a closed system (a mini-biosphere) and student will see the interactions and delicate balance of our natural world (the living and nonliving parts).

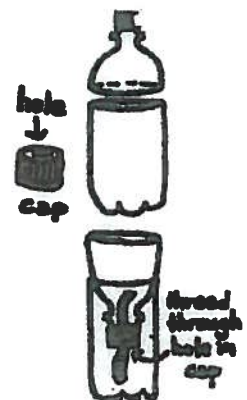
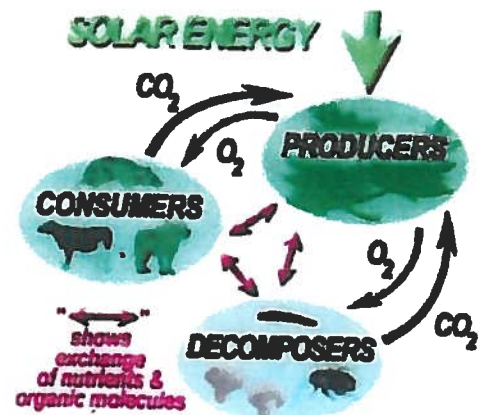
If done correctly, this is a self sustaining system that will last for years without anything added!! That amazes students!

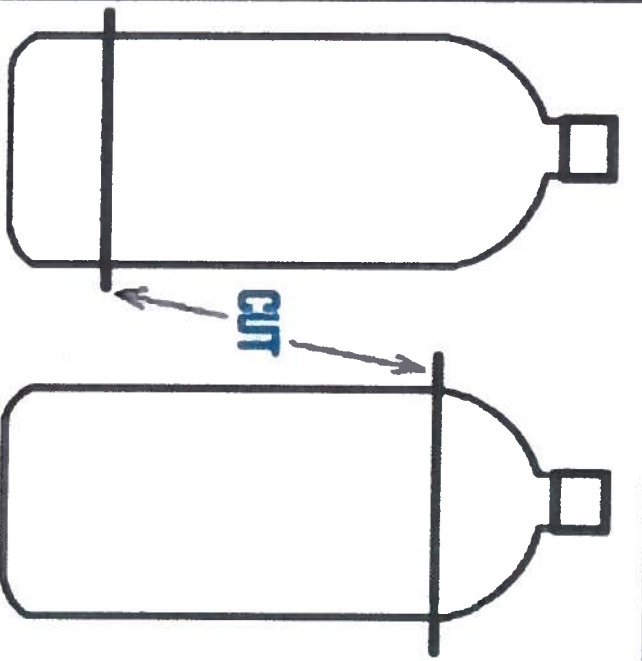
Directions: (10 simple steps for small eco-bottle)

1. Remove labels from 2 of the same kind of bottles
2. Use Scissors to cut each bottle
One about $\frac{1}{3}$ from Top
One in half (you will use 3 parts)
3. Fill the bottom of one bottle with a few rocks/pebbles
(just enough to cover the bottom)
4. Add pond water(about $\frac{1}{4}$ and the aquatic plants, snails, etc...
(This will be the Aquatic Chamber)
5. Use Nail/ hammer/scissors to put hole in one bottle cap
6. Use cotton string as a wick- place it though hole and knot it.
Screw it back on top of the cut section of bottle
7. Fill that capped top section with soil and
8. Add seeds, moss, grass, worms, crickets etc...
(This will be the Terrestrial & Decomposition Chamber)
9. Place Terrestrial Chamber inside Aquatic chamber and tape in place making sure wick it touching water.
10. Tape the other empty section to eco-bottle to cap if off

<http://bottlebiology.org/>

<https://studylib.net/doc/8731709/bottle-biology-exploring-ecosystem>





1. Cut the two 2-liter bottles, as shown above.
2. Using duct tape, connect the three pieces, as shown at right.
3. Drill a hole in bottom lid and place a cotton string through it.
4. Fill the top portion with 8-10 cm of potting soil.
5. Fill the bottom portion with a "pond" of distilled water so the cap is just above the water line.
6. Plant several different plants or seeds in the soil.
7. Add algae and/or duck weed to the water.
8. Add insects, waterbugs, snails and worms.

