

### Construction of a Sanitary Landfill Model (using a 30-gallon garbage container)

1. Cut a 2" x 30" vertical strip from a 30-gallon (or larger) garbage container, leaving the container intact 3 inches above the bottom.
2. Glue a 4" x 32" piece of Plexiglas® to the inside of the container and over the cutout. This will allow you to view the contents of the model landfill. This window will show the strata of waste and soil. (The window may be marked in increments of inches to help with layering the soil and waste.)
3. Before inserting a screw-in faucet on the side or the bottom of the elevated model, cover the back of the faucet (the opening inside the tub) with the screened wire. This will help keep waste material from flowing out with the leachate. With caulking compound, seal around the faucet.

### Preparation of Waste

In a sanitary landfill, the accepted ratio of soil cover to waste is 1:12 (6" of soil: 72" of waste). In this model, 1" of soil cover will be used for 12" of waste. (*If you use a smaller trash can, try to stick to this ratio, if possible.*)

4. Place one layer of waste in the landfill model.
5. Cover the first layer of waste with 1" to 2" of damp soil. Tightly pack the soil cover by pounding it firmly to simulate a real landfill situation.
6. Continue the layering and compacting until the landfill model is full. The final layer should be 4" of soil.

<u>Control Soil Samples</u>		
Soil Type #1	pH _____ K _____	P _____ NO <sub>3</sub> <sup>-</sup> _____
Soil Type #2	pH _____ K _____	P _____ NO <sub>3</sub> <sup>-</sup> _____
Soil Type #3	pH _____ K _____	P _____ NO <sub>3</sub> <sup>-</sup> _____

<u>Pure Leachate on Soil Samples</u>		
Soil Type #1	pH _____ K _____	P _____ NO <sub>3</sub> <sup>-</sup> _____
Soil Type #2	pH _____ K _____	P _____ NO <sub>3</sub> <sup>-</sup> _____
Soil Type #3	pH _____ K _____	P _____ NO <sub>3</sub> <sup>-</sup> _____

<u>Leachate through Soil on Soil Samples</u>		
Soil Type #1	pH _____ K _____	P _____ NO <sub>3</sub> <sup>-</sup> _____
Soil Type #2	pH _____ K _____	P _____ NO <sub>3</sub> <sup>-</sup> _____
Soil Type #3	pH _____ K _____	P _____ NO <sub>3</sub> <sup>-</sup> _____

How Leachate Experiment Affects Plants:

Control Soil Samples	<u>Plant Conditions After:</u>		
	1 Hour	24 Hours	48 Hours
Soil Type #1 _____			
Soil Type #2 _____			
Soil Type #3 _____			

Pure Leachate on Soil Samples	<u>Plant Conditions After:</u>		
	1 Hour	24 Hours	48 Hours
Soil Type #1 _____			
Soil Type #2 _____			
Soil Type #3 _____			

Leachate through Soil on Soil Samples	<u>Plant Conditions After:</u>		
	1 Hour	24 Hours	48 Hours
Soil Type #1 _____			
Soil Type #2 _____			
Soil Type #3 _____			