SOIL
Activities

Activity 1

Does it rot? or not?

What does it mean if something is biodegradable? If something is biodegradable, then it will eventually decompose, or break down and become part of the earth. Try this experiment and find out which things are biodegradable and which things are not.

Materials

Large clay flower pot, small stone, soil to fill the pot, small assortment of waste materials (include something plastic like a piece of polythene plastic bag or a drinking straw, paper, vegetable peelings, leaves…) water, stick or rubber gloves, plastic bag, rubber band or string.

Experiment

Cover the hole in the bottom of the pot with a stone.

Fill the pot 1⁄3 full with soil.

Choose at least four different kinds of waste from your assortment and break or cut each into four pieces (BE CAREFUL to make sure you are not breaking anything that can cut you).

Cover the waste with soil, filling the rest of the pot, and add water. The soil should be damp but not completely soaked.

Cover the pot with a plastic bag and place a rubber band around it or tie it tightly with a string. Put the pot in a dark, warm place.

Check the soil daily to make sure it is remaining damp. If the soil is dry, add water.

After one month, empty the contents of the pot onto a newspaper.

Spread the soil with a stick or with a gloved hand to see what has happened to the waste.

What do you find? Which materials are biodegradable and which did not change at all?

From: NatureWatch Magazine, UGANDA WILDLIFE CLUBS, March 1999

Activity 2

Investigate! Communicate!

Contact an Agricultural Extension Officer to arrange a class visit to a farm using agroforestry techniques. Find out what trees the farmer grows on the farm, and ask all about their uses. What trees does he recommend planting? Make an exhibition about the visit and help spread good ideas!

Strychnos cocculoides

Wild Orange

Sclerocarya birrea

Marula

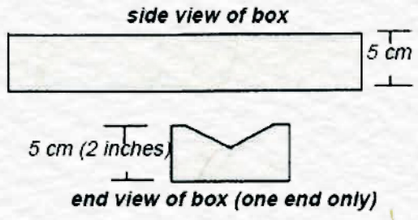
Adansonia digitata

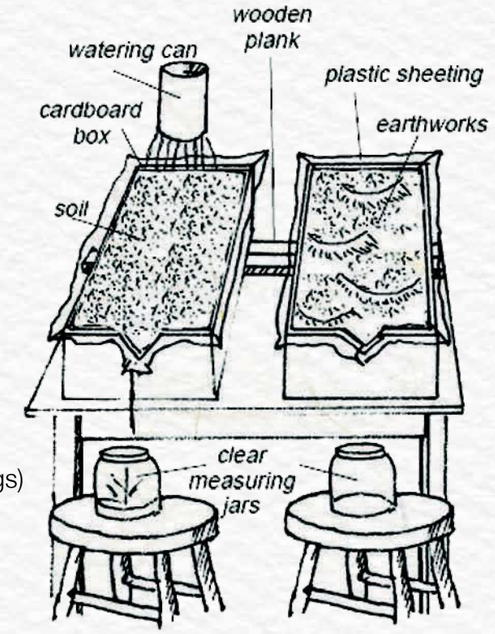
Baobab

Activity 3

A Model Farm

Make two model farms and experiment to find out what farmers can do to save their soils!





Materials

- 2 cardboard boxes (such as shoe boxes)
- Plastic sheets (e.g. cut-up plastic bags)
- Soil
- Bricks
- Sprinkling can or a tin can with holes punched in the bottom
- Tape
- Clear jars with wide openings
- Water
- Watch or timer
- Materials for creating barriers, e.g. extra soil, stones, twigs
- Paper and pencils for recording results

Experiment

Cut the 2 boxes down to size, cutting a V into one end of each.

Line the boxes with plastic, and fill them with moist soil, packed down.

Use bricks to set your two boxes on a slope with the V facing down. Place clear measuring jars right under the V's.

One of the boxes is a 'control box'. It is a model of a slope where the farmer is doing nothing to reduce the flow of water over the soil.

Do nothing to the soil in this box.

The other box is for experiments. Do something to the soil in this box that you think will reduce the flow of water. You may build a barrier or dig a channel, or both. You can try having a barrier going up the hill, built at a random angle to the slope, or running across the hill. Record your experiment in a chart.

Fill the sprinkling can with water. If you are using a tin can punched with holes, tape over the holes, and then fill the can with water, and remove the tape when you are ready to release the water.

Hold the can of water about 30cm above the top end of the control box with soil, and remove the tape so the water sprinkles down onto the soil. Hold in this way until all the water has sprinkled onto the soil. Observe the water draining from the box into the measuring jar. Record how long it takes for water to drain into the measuring jar.

Repeat the last step, but this time test the box containing your barrier. Record how long it takes for water to drain into the measuring jar.

Once water has settled in the jars, measure and record the amount of water and the amount of soil that has drained into the two jars. Record this data on your chart.

Repeat the experiment with different barriers/structures to see if you can reduce the run-off and soil erosion. Try changing the steepness of the hill. Record your results.

Analyse your results and always ask why!

Record Chart

Slowing the flow record

What I did to the slope:

☐ Remodelled the slope

☐ Barrier

☐ Channel

☐ Other .....

Materials used .....

Direction of structure ☐ up/down ☐ across ☐ random

Pattern of structure on slope (e.g. in line, diagonal pattern etc.) .....

Time it takes for the water to drain into the collection jar .....

Amouont of water collected .....

Amount of sediment .....

Based on Trees for Soils and People Activity Pack, Outreach/TVE