Stream Savers

This activity is part of the **Water Protection** theme.

Purpose of this activity:

This activity teaches students about the importance of protecting our water and the ability of nature to keep itself clean. Using the model, the students learn simple ways to keep our waterways free from erosion and pollution.

Key Messages:

- Appreciate the value of water-ways
- Learn the role of plants in preserving water quality
- Small changes can bring positive results in improving water quality in streams and rivers

Materials:

Stream saver model
Ping pong balls-represent pollution

What will I be doing?

Set Up- Station will be set up for volunteers

Using the model, you will explain how pollutants (ping pong balls) can enter streams and rivers polluting our surface water. The model portrays the routes of the pollution and how plants in a buffer zone can prevent pollutants from entering the water course.

The students drop the ping pong balls onto each side of the model. One side of the model has a series of plants acting as a buffer before they reach the river. The other side does not have plants to buffer the pollutants. Before the ping pong balls are released have the students predict which side of the model or valley is going to end up with more ping pong balls (pollution) in the river.

Background Information:.

The riparian zone is the land next to streams, rivers and lakes which are transitional land, also referred to as streambanks, and floodplain. This area needs to be maintained as buffer zone along river banks and lake fronts. These buffers, in the form of plants/trees/shrubs/grasses etc help maintain the water quality by:

1. helping filter out toxins and some pollutants (fertilizers, pesticides, bacteria, heavy metals and septic leachate) before they enter the waterway. If properly maintained a good buffer zone can remove
50% of chemical fertilizers and pesticides
60% of some bacteria
75% of sediment

2. protection from erosion. Roots of riparian zone plants act like “rebar” in concrete holding the soil together thereby keeping it from washing into streams and lakes which adds sediment. The leaves of plants break up the force of rain reducing erosion. Erosion can affect fish spawning beds and overall water quality

3. protection from flooding by absorbing moisture and acting like a sponge during heavy rainfall

4. Trees act to keep rivers and streams cooler by providing shade, thereby making them able to support more fish by providing nesting cover and shelter. Insects and other food are more readily available when there is diverse vegetation in intact along the edges of stream and river banks.
Vegetation along shore give other wildlife cover and safety creating connection corridors.

Questions to Ask the Students:

Q: What do you think the ping pong balls represent?
A: oil, gasoline, pesticides, sewage, urban runoff, soil from erosion etc.

Q: Why do you think more ping pong balls (pollution) made it to the river on one side as compared to the other?
A: Not as much vegetation to provide a buffer to the river

Q: What role do plants play in keeping our waterways cleaner?
A: The plants filter sediment, nutrients, chemicals and other pollutants from surface runoff. They also protect streambanks from erosion, provide food, water, and cover for many species of terrestrial animals and aquatic organisms.

Q: What can we do to help keep this river cleaner?
A: Plant trees and plants that are indigenous to the area that can tolerate damp soils

- Use only biodegradable soaps and never wash in the water
- Allow plants to grow in buffer zone that help absorb water and stabilize the river bank
- Replace grass with natural plants that add shade and create a diverse environment along the sides of water bodies thereby increasing the biodiversity
- Do not cut trees right down to the water's edge. Leave a buffer of 10 meters.

Clean Up Procedure:

Ensure ping pong balls are all there, and put into container and return to centre.