



Educational Farm & Nature Preserve

## Rain Garden Classroom Activities

### Rain Garden Volcabulary

- *Bioremediation* – Process that uses microorganisms, fungi, or green plants to absorb and clean up pollutants.
- *Edible* – something that can be eaten by humans.
- *Erosion* - the process by which the surface of the Earth is worn away by the action of water, glaciers, weather, and human activity.
- *Filtration* - the act / process of filtering, especially of a gas or liquid, usually done by passing the substance through a filter in order to remove solid materials and contaminants.
- *Groundwater* - water located beneath the Earth's surface in soil pore spaces and in the fractures of rock formations.
- *Perennial* – a type of plant that comes back each year.
- *Permeability* - the ability of a substance to allow another substance to pass through it
- *Pollution* - the contamination of the environment by foreign chemicals and waste.
- *Porosity* - the quality of being porous, or full of tiny holes. Liquids go right through things that have porosity.
- *Rain Garden* - a garden which takes advantage of rainfall and storm water runoff and usually incorporates native plants.
- *Standing water* – water that is not moving, like a puddle.
- *Universal Solvent* – water. It is the universal solvent because it can dissolve more substances than any other liquid.
- *Water Shed* – an area of land that drains all of the streams and rainfall to a common outlet such as the outflow of a reservoir, mouth of a bay, or any point along a stream channel. Also known as a *drainage basin*

### In-class activity

#### Materials

- 5-10 medium / large stones
- Pebbles
- Potting soil
- Topsoil
- 1 live plant with roots intact (small)
- Small sheet of aluminum foil
- 6 large clear plastic cups

- 1 cup “storm water” made of tap water with food coloring to represent pollutants

### **Directions**

- Take three of your cups and poke five evenly spaced holes in the bottom. Label one “Cup A”, one “Cup B”, and the other “Cup C”.
- Take a few large stones cover the bottom of each cup. This represents the bed rock.
- Next put in a layer of a mixture of potting soil and pebbles in each cup to represent the parent rock.
- Remove the plant and place it in Cup A. Fill in the space surrounding the plant with potting soil.
- Put potting soil in Cup B and Cup C until the layers are even with Cup A.
- Next put a thin layer of topsoil in each cup.
- In Cup C, cover the top layer with the tinfoil. Make sure no water can leak through. This represents the road.
- Take your three remaining cups. Place Cups A, B and C in the other cups.
- Divide your storm water into three containers. Pour one container into each cup.
- Watch and see which one most effectively filters the food coloring. Why do you think that is?
  
- Cup A should filter best, since the plant will pull the pollutants out of the water.
- Cup B will filter some of the pollutants, since soil is a natural filter. Some pollutants will remain, and these can leach into the groundwater.
- Cup C will not filter any water because the pavement prevents water from filtering down. Instead it runs off, erodes soil, and pollutes lakes and streams.