Who Dirtied the Water?

Story adapted from "Who Dirtied the Water?", *Water Resources of the Catskills, Module 1* of the Catskills: A Sense of Place. http://www.catskillcenter.org/programs/edu/enviredu.html

We are going to make some really polluted water. There might not be a place in the world with so much pollution, but this way we can learn all about pollution. We are going to pretend that the Housatonic River gets really, really polluted. The Housatonic River is 149 miles (240 km) long. It rises from four sources in far western Massachusetts in the Berkshire Mountains near the city of Pittsfield. It flows southward through western Massachusetts through the Berkshires and into western Connecticut, and empties into Long Island Sound between the towns of Stratford and Milford. Along its journey, it fills the ground with water, it supplies towns with drinking water and it carries treated water downriver. It also supplies a place for many fish and insects to live, for deer to drink and for people to swim!

We will begin with this large container with sand and water. This represents a clean stream.

One at a time, students will read a part of the story and add their "pollution".

Once there was a **homeowner outside of town**. "I have a septic system to treat the water that gets flushed down my toilet and goes down my drain. The water sits underground in the septic tank. The solid waste stays in the tank, while the dirty water filters through the ground and is treated by the bacteria living in the ground. Sometimes I dump toxic household cleaners, medicine and paint down the drain." POLLUTE!

Then there was the **neighbor** of the first homeowner. This neighbor had a beautiful lawn. "My lawn is so green and beautiful- I bet all my neighbors are jealous! How do I keep it clean, you ask? Well, I put a lot of fertilizer (which has lots of nutrients for the grass) and I also put a lot of herbicides (that kill weeds). I also give it a lot of water. I guess that sometimes all those chemicals wash off the lawn when I water, but o-well." POLLUTE!

Then there was a public park on the Housatonic River. **Park goers** enjoyed visiting the park and creek on Sundays. "We like to play with our dog, barbeque, swim and play games. The park only has a couple trashcans and they are full, so we just leave our trash like plastic, leftover food and dirty socks here. Not too many people use the park, so it is no big deal. Plus, someone from the village will probably pick it us for us." POLLUTE!

There was a **dairy farmer** that supplied delicious local milk. "In order for my cows to eat enough grass, and produce plenty of milk, I let them eat as much grass as they want wherever they want. Sometimes they eat all the plants living on the edge of the creek, and so when it rains- you know what happens? The soil at the edge of the stream falls off (erodes) into the water." POLLUTE!

Then there was an **apple farmer** that grows sweet apples. "In order to produce all these apples I use pesticides to kill the insects that eat apples. Sometimes these pesticides go straight into the ground, especially when I spray more pesticides than I really need or when I spray before a rainstorm." POLLUTE!

Then we have the General Electric, a company who used to use a chemical called PCB in the factories. "PCBs prevent fires and were used in our electric transformers that were built for electric lines. We used PCBs in our plants from 1932 until 1977, and a lot of PCBs went into the Housatonic. We didn't know that PCB are so toxic. Now we know and are trying to clean it up." POLLUTE!

Then there was the **Department of transportation worker** who keeps our roads safe in the winter by putting salt on the road so that the snow will not turn to ice. "I put salt on the roads, especially before and after storms. I try to put as little as possible, but I have to use some salt for the safety of all drivers." POLLUTE!

Then there was a grocery store built near the creek. This grocery store had a really big **parking lot.** Many cars would park on the lot and leak oil and other car fluids**.** When it rains, oil and rust from cars, litter and salt are washed into the creek.

Because of so much land being covered in roads, buildings and parking lots, less water seeped into the ground and more water went into the river. After a rainstorm a lot of flood water from roads and parking lots went into the stream. FLASH FLOOD!

Then there were the polluters that were further from the creek. **Cars in large cities and power plants in Ohio, New Jersey and Pennsylvania** produce smoky pollution that traveled up to the sky. That pollution was carried by wind, accumulated in clouds and then when it rained that pollution fell with rain into the ground and eventually into the creek. We call that acid rain. POLLUTE!

	Before filtering	After filtering once
Odor Does it smell?		
Clarity/Color Is it brown or Cloudy?		
pH Is it acidic or basic? Acidic = 0-6 Basic= 8-14 Neutral=7		

Do you think it is easy to clean up pollution once it's been added to a watershed?