

Story for *Who Polluted the Merrimack*

For many thousands of years, people have lived on the banks of the Merrimack River. They hunted in the great forests, harvested food from wetlands, and fished the river. Imagine that a jar of water was taken from this river about 500 years ago. *What would it be like to drink this water? What would it be like to swim in it? What would it be like to go boating on it? What kinds of wildlife would live in the river?*

In the 1600's, European colonists began to arrive in this area. They found a river that provided ample food and water. It was an outstanding environment for settlement, and the colonists prospered. The Merrimack River has changed a lot in the past 400 years. This is the story of its changes. Listen for the name of the role printed on your small plastic container. When you hear your role named, open the small plastic container and dump its contents into the river. Imagine now that the story is happening in the present – maybe even while we are sitting here today.

A sudden downpour drenches the area. The pounding rain is washing loose soil from a nearby CONSTRUCTION SITE into the river. High winds whip through TREES and blow leaves into the water. Imagine that the jar of water was taken from this just after a downpour. *Ask the four italicized questions again (see above).*

In a short while, the storm passes over, and the sun comes out again. People head for the river to have fun. Some zoom up and down the river in MOTORBOATS and don't notice that a little engine oil leaks into the water. A group of friends spread blankets on the shore for a BEACH PARTY. Lots of families are PICNICKING in the parks, too. Some of these people have left trash at the shore. During the next rainstorm, that trash will wash into the river. On the dock, a PERSON FISHING snags the hook on a log and breaks the nylon fishing line. Imagine that the jar of water was taken from this river now *(ask the four italicized questions again).*

Not everyone is out playing today. A FARMER has been fertilizing cornfields close to shore. The rain washed some of the fertilizer off the land and into the nearby river. The farmer also keeps pigs and other animals in the BARN YARD. As the rainwater drains out of the barnyard, it carries some of the manure into a little creek behind the farm. The creek flows into the river. Over in a nearby neighborhood, an old house is not connected to the town's sewer system. Wastewater from the house goes into a septic tank underground. The HOMEOWNER has not

maintained the septic tank, and poorly treated sewage is seeping into the river. Imagine that the jar of water was taken from this river now (ask the four italicized questions again).

Upstream a 100-car COAL TRAIN is carrying coal to an electric plant. Rainwater drained through every car as it sat waiting for permission to use the right track. This made the water acidic – like strong vinegar. Then the acid water trickled back out into the river. The ELECTRIC POWER PLANT on the river burns coal to produce electricity. The gases coming out of the smokestack combine with moisture in the air to form acids. The pollution falls back to the ground as acid rain or acidic snow. Many COMMUTERS drive their cars to and from work. Car exhaust fumes (just like the power plant fumes) cause more acid rain. If a car is not kept in good repair, it might also leak oil, brake fluid, or other fluids, which will be washed off the pavement and into the river with the next rain. Imagine that the jar of water was taken from this river now (ask the four italicized questions again).

Let's look in on some typical activities around the neighborhood. Lots of LAWN CARE COMPANIES are out working in people's yards today. Many of them are using weed killers and insect sprays to keep the lawns beautiful. The next rainfall will wash these poisons into a little creek nearby, and then into the river. There's a father teaching his daughter how to change the antifreeze in her truck. Some of the used antifreeze spills on the driveway. Some of it will make its way to the nearby creek and poison fish. Later, father and daughter WASH THE TRUCK. The soapy water rushes down the driveway into a storm drain; the storm drain empties into the river. Phosphates in detergents used to be a pollution problem because they acted like fertilizer, making too much algae grow in the river. Laws were passed to stop the use of phosphate soaps in order to help solve the algae problems. But the grease and grime on a car contain asphalt from roads, asbestos and copper from the brakes, rubber particles from the tires, heavy metals, and rust. Next door a family is cleaning out their garage. They find an old rusty can with no label, filled with a liquid. What could it be? It looks dangerous, and they want to get rid of it – but how? They pour it down a storm-drain near the curb. The liquid is out of sight, but headed for the river.

Imagine that the jar of water was taken from the river now (ask the four italicized questions again).