

# GERMS



POSTER INSIDE



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## Our Environmental Heroes



Priscilla Bacilla

**G**erms, also known as bacteria or microorganisms, are tiny microscopic creatures. While some germs make us sick, other good germs help us process food and keep us alive. These good germs help with the planet's natural cycles, like the water cycle, the oxygen cycle, and the carbon cycle.

**D**id you know that a million bacteria could fit on your thumbnail? And what they do is amazing. Bacteria in our stomachs produce enzymes that break down food into usable nutrients and components. We then eliminate the waste material from our bodies. Bacteria can also process the waste material and turn it into usable items much like fertilizer.

**W**e use bacteria at the Sanitation Districts' wastewater treatment plants to help remove waste from the water. We grow these microorganisms and provide them with an environment where they can do their job.

## Cyrus The Virus and his gang





Mike Robes

**I**n our treatment plants, with the help of bacteria, we replicate what nature takes months to accomplish in a river. We do it in only about twelve hours! Long ago, when everyone lived in the woods on their own, we didn't need these kinds of treatment facilities. But as people began to gather in cities, dumping waste into streets, fields, and rivers, problems began to develop. The people and rivers got sick. Treatment plants solved these pollution problems.

**B**arely a century ago, Louis Pasteur discovered "the world of microorganisms"—the things we call germs. Scientists and engineers are learning more each year about how bacteria can help us clean water.

**I**t's our job to be able to cut out or separate the bad germs and make sure they don't impact people's health. But it's also our job to keep the good germs happy so they can do nature's job of recycling the building blocks of life, becoming our environmental heroes!



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Mike Robes

## In the Treatment Plant



Priscilla Bacilla



Bacteria and other microorganisms are the “good guys” in the wastewater treatment process, where they help clean wastewater by feeding on the organic material in it. In the aeration tanks to the left, the microorganisms, not the waste, make the water brown. Air is bubbled through the tanks so the microorganisms can breathe.

These microorganisms, right, called protozoa, are usually found in the aeration tanks. They eat the organic material in wastewater and also some of the bacteria. This mixture of populations of bacteria and protozoa in water are nature’s cleansing machine.



Everyday scientists at the Sanitation Districts, with the help of sophisticated laboratory equipment, test and monitor the purified water leaving the wastewater treatment plants. They make sure there are no harmful microorganisms in the water and that it is safe for public health and the environment.



Al Gee

Purified water from Sanitation Districts’ treatment plants, although not used as drinking water, meets health-based State and Federal drinking water standards. This means that the water is essentially as clean as the water that comes out of your tap!

