



Robo-Defenders

Team 12702



We'd like to talk about water. Water is very important to our world. Water helps everything live. But, what if water gets contaminated?

The Problem:

Well, there are lots of different things that can contaminate water, like rust, pesticides, and algae. We have studied algae, and figured out that algae grows because of the extra nutrients in the water, like phosphorus and nitrogen. Those extra nutrients can come from fertilizers. Extra fertilizer can be carried in the runoff after a rainstorm and collect in streams and rivers. This can then flow into lakes. If this continues, the lake will have lots of extra nutrients and algae can begin to grow. The water quality then deteriorates, and can lead to higher costs for water treatment.

The Solution:

One way to solve this problem is to plant more plants. Plants can absorb the extra nutrients from the water and the soil, a process called phytoremediation. Our team has determined that ferns might be the best plant to use, because they can absorb even more nutrients than other plants. If ferns are planted where rainwater might carry away the extra fertilizer, like near farmlands, they can absorb the extra nutrients before they reach the water sources. They can also be planted near water sources that already have high levels of nutrients to help with the problem.

The Expert:

There is a scientist who works on removing arsenic from the soil using plants. His name is Michael Blaylock from Edenspace System Corporation in Dulles Virginia. He has found that ferns will absorb the arsenic from the soil and store it in their leaves. These leaves can then be cut off and destroyed. Ferns can store up to 200 times as much arsenic in their leaves as other plants, so they are the perfect plant for this type of work. He says ferns are a newer, cheaper, and greener way to cleanup.

**So put on your green thumb...
and start planting!**