Run-off Take Home Activity

Materials

- small clear bin
- food coloring or kool aid
- dirt
- water
- cup
- and Mom's permission, of course 🙂

Instructions

1. Put dirt in the bin (make sure that the dirt is about an inch from the top of the container on one side and have almost no dirt on the other side-- this creates a **small hill or incline** inside the bin.) Half water/half dirt
2. Pat the dirt so that it is firmly in a hill form, but not too tightly. Make sure it is still loose enough to allow water to pour through it.
3. Pour water into the bin on the side with almost no dirt. Fill it to about halfway up the hill, or a little more.
4. Fill a cup up halfway with water and add a few drops of food coloring to color the water.
5. Pour the colored water at the top of the hill.
6. Watch the pool of water at the bottom of the hill.

Now, if you did this correctly, you'll see that the water at the bottom of the hill is colored now, too. Here's what makes this activity interesting and how it replicates or copies what happens in real life.

Farming. Plain and simple farming... but it isn't that simple. For farmers to grow our food, they often protect the crops from harmful or bad bugs. These bugs eat at the crops, or they eat other bugs that are beneficial or good for the crops. This can cause the crops to become very weak and not produce any food for us people. These bugs could also kill the crops, wiping out an entire field. The farmers also have to grow food for nearly 8 billion people that live here on Earth... sounds crazy, doesn't it? So, they have to make sure they are growing enough to feed all of these humans. For example, wheat, which is used to make bread, yields a small amount of grain if it were to just magically sprout up. A small amount of grain ***is not*** *going to feed nearly 8 billion people. This makes the farmers want to grow better and improved wheat. They use fertilizer to strengthen the growth of the crop.*

One might think there is no way this is bad for the Earth, using pesticides and fertilizers. But it can be at times. This activity showed you that the colored water ran through the dirt and then made the pool of water colored, too. This is replicating how the pesticides and fertilizers run off the farmers fields and get into our water sources. As the activity showed, the "pesticides and fertilizers" got into the water. In real life, that coloring is actually the pesticides and fertilizers.

Some of those chemicals are nitrate and phosphorus. When these chemicals get into the water, they sometimes encourage harmful bacteria to grow in the water.

These harmful bacteria a known as blue-green algae. A "Harmful Algal Bloom" happened right here in Ohio, in Lake Erie. A few years ago, an algae bloom formed in the water. It was so dangerous and harmful that you were not supposed to drink the water and even touching it might cause some harm. This was such a catastrophe because Lake Erie is a water source for millions of people in Ohio. So this activity is just a small demonstration of the harmful effects that pesticides and fertilizers running off the fields can have when they contaminate our water sources.

Do your own research and see what alternative ways farmers can protect and grow better crops without using harmful chemicals. Maybe there is even a way to stop it from running off the fields.