

## Poisons on our Planet

### A Healthy World

From the Sahara Desert in Africa to the coral reefs of the South Pacific, every living thing on Earth needs clean air, clean water, and clean land in order to survive. Whether it's the air we breathe, the water we drink, or the food we eat, planet Earth gives us everything we need to live healthy lives.

### Natural Toxins

Although nature provides us with everything we need to be healthy, there are many things in nature that can actually be poisonous. These poisons are called toxins. Toxins can be found in a variety of things like the venom from a rattlesnake, the leaves of an oleander bush, and the poison from a deadly mushroom. Toxins found in nature exist to protect plants and animals from being eaten. They also help animals and plants kill other things for food. For example, a spider will use poison to paralyze a fly so it can eat it.

### Nature's Warning Signs

When something in nature is poisonous, it usually has some sort of warning sign. For instance, poison arrow frogs from the rainforests are brightly colored. There are over 170 different kinds of poison arrow frogs and each one has a bright splash of color like red, yellow green or blue. This lets other animals know how poisonous they are. These small frogs are so deadly that one drop of their poison can kill a human being!



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### Using Nature's Toxins

Throughout history, human beings have learned to use natural toxins for help. For instance, native or indigenous peoples that have lived in the world's rainforests for thousands of years discovered how to use poison from the poison arrow frog. They learned how to safely take out or extract this poison and put it on their arrows in order to hunt. That's how the poison arrow frog got its name!

Doctors around the world have also used curare, a poison from a rainforest vine in South America, to anesthetize or safely put patients to sleep during operations. Although natural toxins can be deadly, there are many ways they can be helpful.

### Man-made Toxins

Today, most of the poisons on our planet don't come from nature. They are made from humans. Whether they are the chemicals we make and use to create things like plastic, batteries, and computers, or other products like gasoline and pesticides or poisons used to kill pests, human beings have created a lot of toxins. When these poisonous substances are burned, dumped in the water, or spilled on the earth, they create serious pollution that poisons our air, water, and land. If animals or human beings inhale polluted air, drink polluted water or live on polluted land, it can make us sick. Most man-made toxins are damaging to our environment and our health.

### Toxins at Home

There are many common household products that are toxic, for example, cleaners like chlorine bleach, toilet bowl cleaners, oven cleaner, and



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furniture polish. Other toxic household products include mercury thermometers, motor oil, pesticides, and paint thinner. The most toxic products in the United States have a label on their package that says either: Caution, Warning, Danger, or Poison. These labels warn people that the product is toxic. Never touch any product that has one of these words listed on it—especially the words “Danger” or “Poison”. Only adults should handle these products!

### The Effect of Toxins

Using man-made toxins has many effects or consequences on our health and environment. One example is the effects of chlorine, a common chemical. Chlorine is used to bleach or whiten things like paper and clothes; it is poured into water supplies to disinfect or kill germs, and it is used to make or manufacture plastics, pesticides and many other materials around the world.

Although household chlorine products like chlorine bleach are useful, they can be dangerous if we inhale the fumes or mix them with other household chemicals. Fortunately there are other types of bleach that do not contain chlorine. Chlorine-free bleach is much safer for us to use. The biggest problem with chlorine is that it can harm nature. Whenever substances with chlorine are burned they create a different substance we don’t want called by-products.

One type of by-product is called dioxins. Dioxins are some of the most poisonous substances on our planet. Some dioxins are created in nature, like when volcanoes erupt, but most of them are man-

made, from manufacturing things with chlorine or burning substances with chlorine. When dioxins are put into the air or water, they get absorbed in the bodies or fatty tissue of fish and animals, including humans. Scientists say that even small amounts of dioxins can cause cancer, birth defects and other illnesses in people and animals.

### Let’s Have A Healthy Planet!

Even though toxic chemicals are still being used around the world, there are many things we can do to use safer, less-toxic products that don’t poison our planet, its animals, or our bodies. Ask your parents to use chlorine-free bleach, less-toxic cleaning sprays, and other household products. Many of these items can be purchased at stores or on the Internet. You can also teach your parents not to dump poisons down the drain like used motor oil, paint-thinner or pesticides. Have them take these dangerous or hazardous materials to the Hazardous Waste Facility. Better yet, ask your parents to find safer ways to control pests in your home and garden instead of pesticides. One technique, called Integrated Pest Management (IPM), and can control pests without poison.

We all have the power to make our planet a safe place for every living thing. By using fewer toxic chemicals and learning about safer, non-toxic products, we can rid our planet of perilous, or dangerous, poisons!

### National Science Standards Addressed:

- Grades 5-8: Characteristic properties (8BPS1.1)  
Environments may contain substances that are harmful to human beings (8FSPSP1.7)  
Natural hazards (8FSPSP3)
- Grades K-4: Materials and their properties (4BPS1.2)  
Humans and the environment (4CLS3.4)  
Abilities to distinguish between natural objects and objects made by humans (4EST3)  
Science and technology in local challenges (4FSPSP5)  
Different substances can damage the body and how it functions (4FSPSP1.4)

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