

TechnoKids Inc.

TechnoEnvironment

Plastic Pollution

What is Plastic Pollution?

Plastic is a material used in the manufacturing of products. It is often created from polymers and various chemicals. Plastic is used to make items such as clothing, eyeglasses, shopping bags, toothbrushes, water bottles, electronics, dishes, utensils, toys, and packaging. Plastic pollution is created when people throw plastic items away instead of recycling.



Plastic waste can entangle or entrap animals. Often this causes them to be unable to eat or move.

Harmful Effects

- **Toxic Landfill Waste:** Plastic waste buried deep in landfills can leach harmful chemicals that can spread into groundwater.
- **Pollutes Oceans:** Plastic that was not recycled often gets washed into a stream, river, or lake, which empties into the ocean. The ocean currents carry the plastic into gyres, which are circular flows, that trap the plastic in one location. The gyres become large watery garbage dumps.
- **Strangle Animals:** Animals are often found entangled or trapped in plastic debris. They often cannot move or eat, resulting in a slow painful death.
- **Toxic to Animals:** Plastic waste breaks down into nurdles, which are small plastic pieces. Fish, turtles, and birds mistake the pieces for food and when they eat it they often die as a result of the toxins in the plastic. If they survive, humans eat the animals, which allows toxins to enter the body.
- **Human Health Risks:** Items made from plastic have harmful chemicals added during the manufacturing process to soften the material to make it easier to mold. Plastic packaging used to store food or drinks, as well as toys, have chemicals that are believed to contribute to cancer.

Interesting Facts

- The average person uses an average of 200 pounds of plastic each year.
- Less than 10% of plastics produced are recycled.
- Plastics can be manufactured to meet almost any requirement. It can be rigid, flexible, colored, or fire-resistant.
- Mass production of plastic began in the 1940's because it was economical to make.
- Many plastics are made from petroleum, which is a fossil fuel.
- Plastic in waterways allows foreign species such as barnacles, tubeworms, and algae to travel on the debris to new locations threatening the local area's biodiversity.

Solutions

- **Reduce:** Purchase products that use less packaging or use alternative packaging such as paper or glass.
- **Recycle:** Transform plastic items into new products.
- **Recover:** Clean up plastic waste. Pick up discarded water bottles, shopping bags, and food packaging from the ground and waterways and recycle the items.
- **Bio-Based Plastics:** Develop biodegradable plastic from renewable plant sources such as vegetable oil, corn, wheat, soy, potatoes, beets, and sugar cane.
- **Green Chemistry:** Develop safer chemicals to use in the manufacturing process of plastics that are not toxic.
- **Regulations:** Establish and enforce laws that manage waste in the community and encourage companies to alter their manufacturing process.

Bioplastic

An examination of a solution that creates plastic from plant sources.

Advantages	Disadvantages
Made from renewable plant sources.	Often recycle centers have to sort the bioplastic from the petroleum-based plastic.
Use less energy to produce than plastic made from petroleum.	Risk food shortages if crops are grown for bioplastic instead of food.
Bioplastics can be recyclable, compostable, and/or biodegradable.	Many bioplastics have a low melting point.
Bioplastics are non-toxic and will not leach toxins into the soil and water.	