



Population Explosion

People Power The world's human population is about six billion ... and it's getting bigger every day. Scientists predict that in 50 years it will reach almost nine billion. Many parts of the world are already having trouble dealing with overpopulation and the waste produced by so many people.

Below is a table showing the world's five most populated countries as of 1998, and how scientists predict the top five will read for the year 2050:

| Country | 1998 Population | Country | 2050 Population (Predicted) |
|-----------|-----------------|-----------|-----------------------------|
| China | 1,243,000,000 | India | 1,529,000,000 |
| India | 989,000,000 | China | 1,478,000,000 |
| USA | 270,000,000 | USA | 349,000,000 |
| Indonesia | 207,000,000 | Pakistan | 345,000,000 |
| Brazil | 162,000,000 | Indonesia | 312,000,000 |

Many highly developed European countries expect to see a decrease or slight increase in population. However, the U.S.'s population is expected to increase by 79 million people—about 29 percent. And with all these people, there will be much more garbage filling our world.

Respect for Recycling

About 130 million tons of solid waste ends up in landfills each year. Paper is the landfills' main ingredient. It covers 40 percent of landfill space. The average high school student uses 320 pounds (145 kg) of paper a year. That sounds like a lot of paper being used, especially when you consider that in 1996, only 42.3 million tons of paper were recycled in America—and that's 295 pounds (134 kg) per American citizen.

Newspapers are a big part of the paper problem. If all morning newspapers around the country were recycled, 41,000 trees would be saved each day and 6 million tons of waste would never end up in landfills.

The good news is that Americans are recycling more paper and it's helping. We now recycle more than 40 percent of all paper used. Now the U.S. paper industry has a new goal for the first few years of 2000: to recycle half of all paper used.

Plastics, including milk containers and some toys, make up about 9 percent of U.S. trash. Almost 22 percent of the plastic bottles used in 1996 were recycled. Plastic soda bottles are actually one of the most commonly recycled products—almost half of those made are currently being recycled.



Things made of metal, including cans, tinfoil, and some appliances, account for only 7 percent of our trash. Aluminum cans are recycled at a rate of 63.2 percent. Thanks to the more than 10,000 recycling centers nationwide, a near record 2 billion pounds (0.9 billion kg) of aluminum were diverted from landfills in 1998 alone.

Approximately 6 percent of our garbage is glass. That's about 87 pounds (39 kg) of glass thrown away by each person each year. Only about 38 percent of glass containers were recycled in 1996. And recycling glass is working. In fact, most bottles and jars now contain at least 25 percent recycled glass.

Waste to Go Less than one-quarter of our trash, called solid waste, is recycled. This garbage includes everyday items such as product packaging, grass clippings, furniture, clothing, bottles, leftover food, newspapers, appliances, paint, and batteries. What's not recycled is burned or buried in *landfills*—deep-holed plots of land where trash can legally be dumped. Burning releases toxins into the air and creates ash, which needs to be dumped somewhere. The problem with burying trash? The U.S. Environmental Protection Agency estimates that half of all landfills now in use will be closed by the end of 2000 because they will be full or contaminating groundwater. Currently, about 86 percent of U.S. landfills are leaking toxic materials into lakes and streams. Garbage that does not rot, like plastic, can remain in the dirt for *hundreds* of years.

More people on Earth means more businesses will be created to serve them. Businesses such as gas stations, dry cleaners, photo developers, and auto repair shops produce toxic waste products. Hazardous waste—such as gasoline, paint, pesticides, and household cleaning agents—requires delicate handling. These waste products may have cancer-causing properties, catch fire, or explode easily.

Wastewater, or *sewage*, includes human and animal waste, which is sure to increase with an increased population. All wastewater produced by a city or town passes through a sewage treatment plant. In most wastewater treatment plants, around 90 percent of wastes are disposed of easily because they can break down on their own. But leftover sludge is burned, dumped in the ocean, soil, or a landfill.



Haste Makes Waste

In 1960, each person in the U.S. was creating, on average, 2.7 pounds (1.2 kg) of garbage each day. Today, with our bigger population and more developed land, each person is producing about 4 pounds (1.8 kg) of garbage every day. That's about 15 times your weight! Imagine if someone dumped all

that garbage in your home each year. Then multiply that by the number of people in your family, and dump that in your house, too. In only a few years, your home would probably be overflowing with this trash.

Now try to imagine a heap of 209 million tons of garbage, which is what the U.S. produces each year. You could hide a medium-sized city in there. And remember, by 2050 the heap produced each year will be 29 percent bigger!



Activity

POPULATION PLUS Find the rate of growth for each country listed in *People Power*. Use that to determine the year at which China and India could have the same population. Hint: Use the list function on a graphing calculator to find yearly increases.