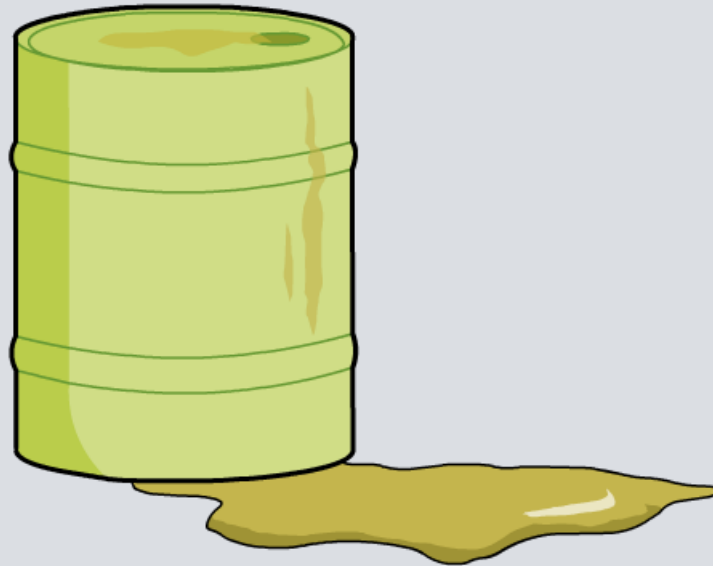


## Human Impact on the Environment



# Population growth

There are about 6.8 billion people in the world and over 95 million babies are born per year – that is an average of three babies per second!



Has the rate of population growth always been the same?



The human population is said to be growing **exponentially**. This means that the larger the population, the faster it grows.

An increase in average **life expectancy** is largely responsible for the rapid increase in population. Why do people live longer than they did hundreds of years ago?

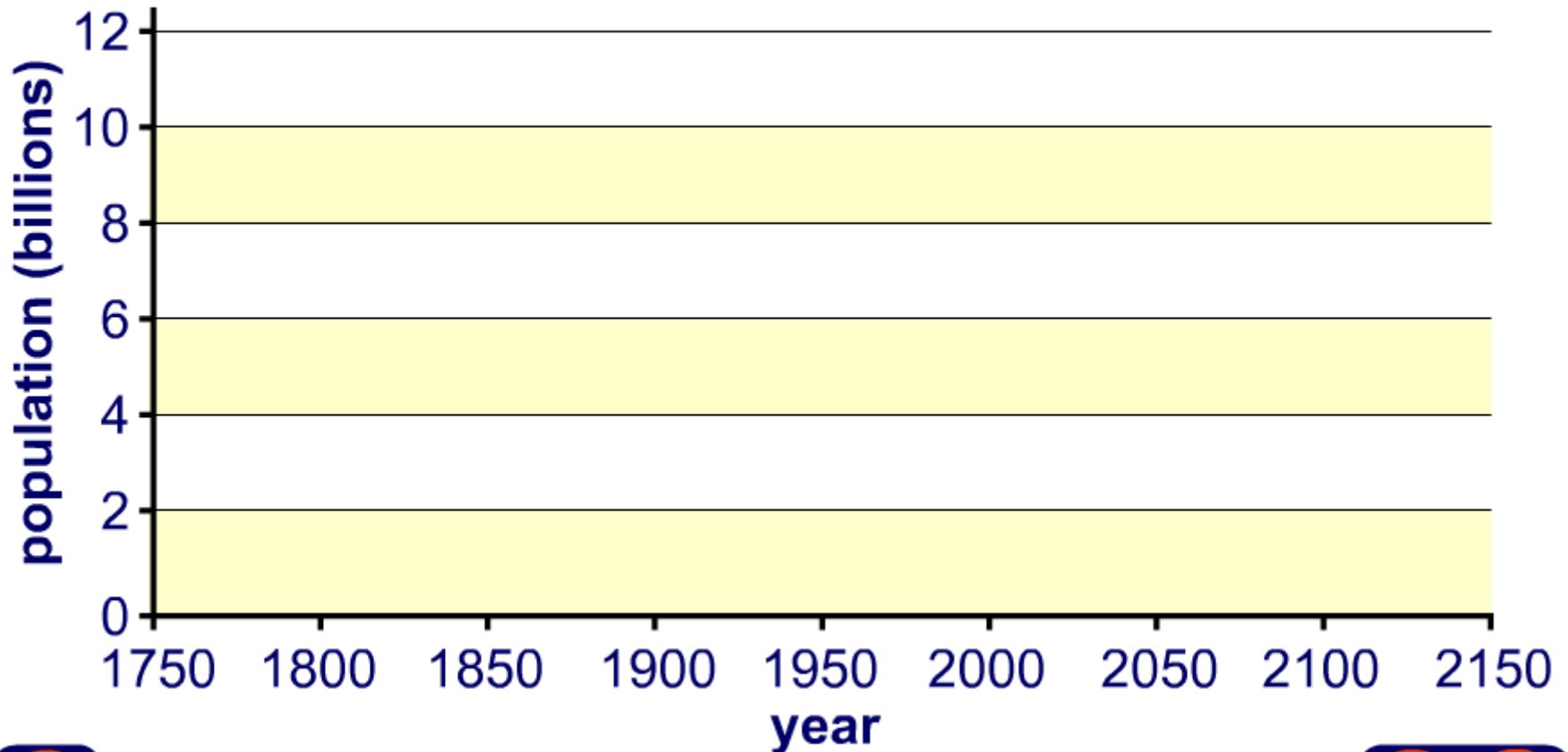
- better healthcare (hospitals, medicines, vaccines)
- more and better food
- cleaner water
- better sanitation

The biggest increase in population is in **economically developing** nations, rather than economically developed nations. Why do you think this is the case?





## How is the world's population changing?



Computer models can be used to make predictions about population growth by using assumptions about birth rate.

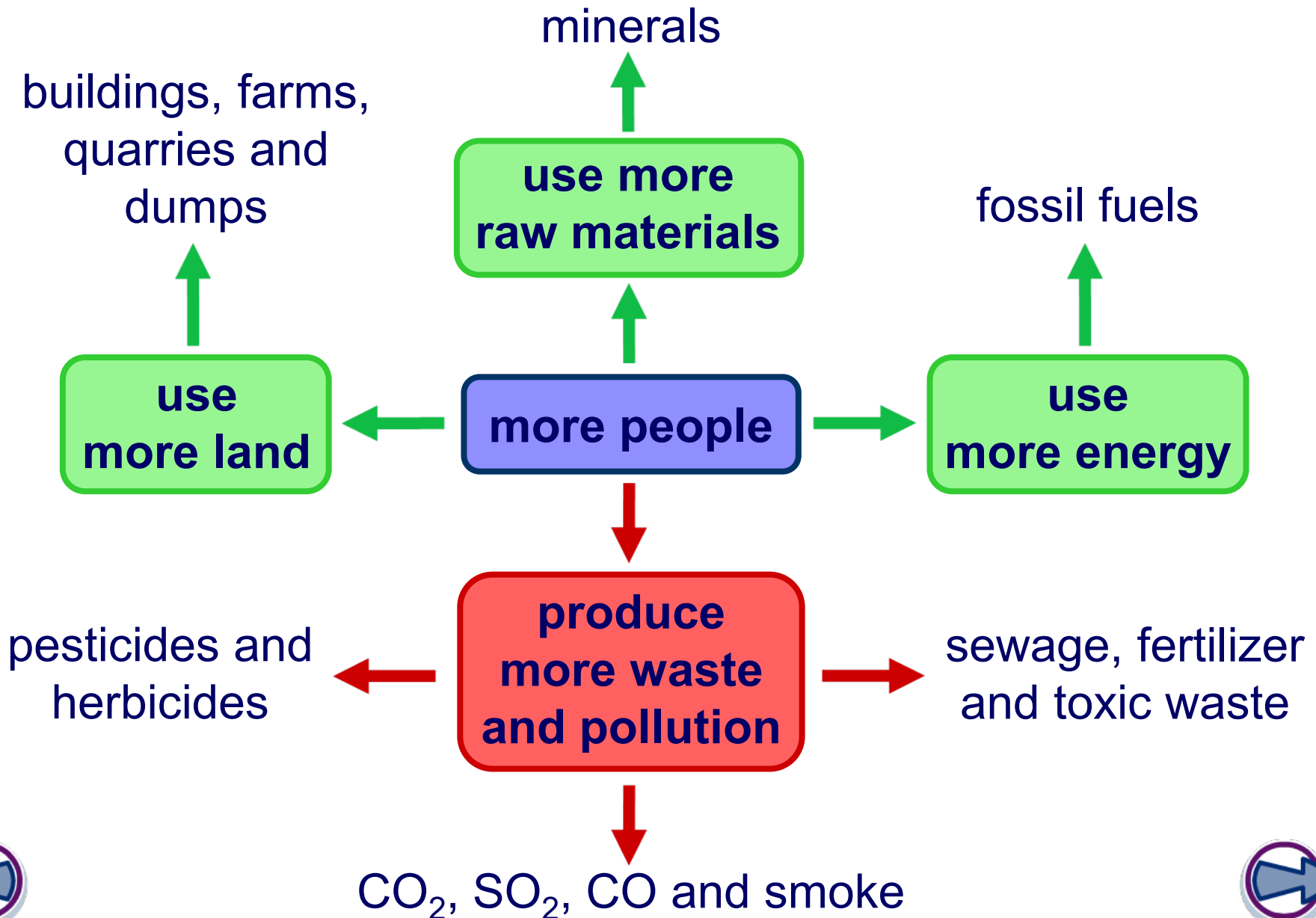
Most analysts assume that birth rates will fall within the next 50 years. Why do you think this might happen?

- decreased fertility
- lack of resources
- disease
- war

How important do you think predictions about climate change and unsustainable development are in the analysts' calculations?



# Using resources and producing pollution



# What are pollutants?

One of the biggest problems of a rising population is an increase in pollution.

A **pollutant** is a substance that contaminates air, water or land. Some pollution is caused by natural events such as volcanic eruptions, but the majority is caused by human actions. Pollutants are either:

- **non-degradable** (e.g. the pesticide DDT) – these decompose extremely slowly, allowing them to accumulate to toxic levels as they are passed along food chains.
- **biodegradable** (e.g. sewage) – these are usually only damaging when added to the environment more quickly than they can decompose.



Land and soil can be polluted by two main types of substance:

- **solid waste** – such as plastic, metal, paper and other man-made substances
- **chemicals** – such as herbicides and pesticides, crude oil and waste from industrial processes.

Land pollution often leads to water pollution, as chemicals are washed into rivers and lakes.





# How much waste?

Every year, billions of tons of paper, plastics, synthetic materials, metal and wood are thrown away.

An average American produces about 4.4 pounds (2 kg) of garbage a day.

How could you estimate the amount of garbage you throw away each year?

