|  |  |
| --- | --- |
| **Year A.D** | **Number of People (in billions)** |
| 1650 | 0.50 |
| 1750 | 0.70 |
| 1850 | 1.0 |
| 1925 | 2.0 |
| 1956 | 2.5 |
| 1966 | 3.3 |
| 1970 | 3.6 |
| 1974 | 3.9 |
| 1976 | 4.0 |
| 1980 | 4.4 |
| 1991 | 5.5 |
| 2000 | 6.0 |
| 2004 | 6.4 |

**Human Population Growth**

(Adapted from Biology Corner)

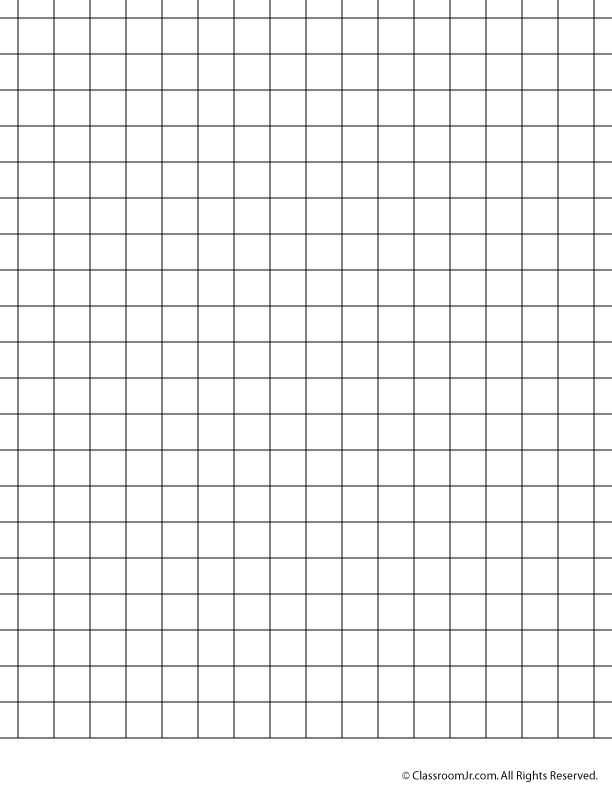
You will create a graph of human population growth and use it to predict future growth. You will identify factors that affect human population growth.

**Statistic of Human Population Growth**

|  |  |
| --- | --- |
| When creating your graph make sure to include all of the following. Check them off as you add them to your graph.  **Items Required Check** | |
| Title |  |
| Label X-axis |  |
| Label Y-axis |  |
| X-axis Title |  |
| Y-axis Title |  |

**Graph Instructions:** Place time on the horizontal axis. Values should range from 1650 t0 2011. Place the number of people on the vertical axis. Values should range from 0 to 7 billion. Make your graph large.

1. It took 1649 years for the world population to double, going from 0.25 billion to 0.5 billion people. How long did it take for the population to double once again?
2. How long did it take for the population to double a second time?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ A third time?
3. Based on your graph what year will the population reach 8 billion?
4. Based on your graph how long will it take the population of 2004 to double?



**The Earth’s Carrying Capacity**

Prior to 1950, the death rate was high, which kept the numbers of humans from increasing rapidly. In the 19th Century, the agricultural revolution increased food production. The industrial revolution improved methods of transporting food and other goods. In the 20th Century, advances in medicine, sanitation, and nutrition have decreased the death rates further. These factors combined to produce the rapid growth of the human population in the 20th Century.

As with other organism’s population, humans are also limited by factors such as space, amount of food and disease. The carrying capacity is the number of individuals that a stable environment can support. Authorities disagree on the maximum number of people that the earth can support, though the numbers generally range from 8 to 10 billion. As the population approaches its limit, starvation will increase. Some countries have a much higher growth rate than others. Growth rate is the number of people born minus the number of people that die. Compare the growth rates of the following countries.

Most countries are trying to reduce their growth rate. Zero population growth meant that as many people are being born as there are dying – to achieve zero population growth, each couple would have to have no more than two children (to replace the parents). Even if this number is achieved, the population will continue to grow because the parents will still live on for decades, as their children have children, and their children have children… and so forth. The United States reached zero population growth in the 1980’s, and yet the overall population of the U.S. still increases.

1. What factors contributed to the world’s overall population growth in the last 150 years?
2. Why does a population not level off during the same year that it reaches zero population growth?
3. What will happen when the human population exceeds the earth’s carrying capacity?
4. Name a country where there has been massive immigration. What are some reasons for people to immigrate to another country?
5. Name a country where there has been massive emigration. What are some reasons for people to emmigrate to another country?
6. Name three factors that cause a human population to increase and name three factors to cause the human population to decrease.