Because human populations in different parts of the world live in different environments, where they have variable access to food, clean water, technologies, and medical aid, their per capita birth rates and death rates—and thus their growth rates—also vary. In this activity, you will use historical data to calculate and compare the growth rates of several different human populations.

Use the table below to answer the following questions. All values from 2001.

Country	Population Size (millions) (*N*)	Number of births (b) per 1000 individuals	Number of deaths (d) per 1000 individuals
Canada	32.2	10	7
Ethiopia	77.4	41	16
Finland	5.2	11	9
Germany	82.5	9	10
Greece	11.1	9	10
India	1103.6	25	8
Nigeria	131.5	43	19

Capita growth rate = $\left(\frac{\mathbf{b}}{\mathbf{1000}} - \frac{\mathbf{d}}{\mathbf{1000}}\right)$ (this equation does not account for emigration and immigration)

Use three decimal places

1.) Use the equation above to calculate Canadas capita growth rate.

2.) Calculate Canadas population size in 2002.

Example Nigeria

Capita growth rate = $\left(\frac{43}{1000} - \frac{19}{1000}\right)$

cgr = 0.024

$N_{(\text{Nigeria in 2002})} = N_{(\text{Nigeria 2001})} \times (\text{cgr} + 1)$

= 131500000 x (0.024 + 1)
= 131500000 x 1.024
= 134656000

$N_{(\text{Nigeria in 2002})}$ = 134656000

3.) Use your population from 2002 for Canada to calculate 2003.

4.) Use your population from 2003 for Canada to calculate 2004

5.) Use your population from 2004 for Canada to calculate 2005

6.) Use your population from 2005 for Canada to calculate 2006

7.) Use your population from 2006 for Canada to calculate 2007

8.) What assumption are you making about cgr when doing the previous calculation?

_____

_____

9.) Complete the Table below using your predicted values and the actual values from google.

Canadas Predicted Population by Year		
Year	Predicted Population	Actual Population
2001		32,200,000
2002		
2003		
2004		
2005		
2006		
2007		

10.) How close were your actual numbers to the predicted?

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11.) What social, political, economic, and/or environmental factors could account for any differences?

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12.) Use google to classify each country as highly industrialize or less industrialized and calculate their cgr values

Canada _____

Ethiopia _____

Finland _____

Germany _____

Greece _____

India _____

Nigeria _____

13.) Is there a relationship between industrialization and cgr values? If so what is it?

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