

UNMDGs Case Study — Part I

Goal #1: Poverty & Hunger



These globes in Geneva, Switzerland (at the office of the United Nations) symbolize the importance of global partnerships in achieving the UNMDGs by 2015.

Source: Photo by Natalie Flath for Seattle BioMed.

Global Health: An area of study, research, and practice that places a priority on improving health and achieving equity in health for all people worldwide. It emphasizes transnational health issues, determinants, and solutions; involves many disciplines within and beyond the health sciences and promotes interdisciplinary collaboration; and is a synthesis of population-based prevention with individual-level clinical care.

You are a Senior Information Analyst with the United Nations. You and your colleagues have been assigned a task directly by the head of the United Nations: UN Secretary-General Ban Ki-moon. The Secretary-General wants your help in reviewing the progress that has been made toward meeting each of the eight Millennium Development Goals.

Ban has told you that he has an upcoming meeting with a major philanthropic organization. This organization has a large sum of money that they want to invest in **global health** projects; however, they want to fund projects that have a high chance of success. Ban has asked you to focus your energies on Goal #1.

Your task is to analyze data from the Gapminder.org website and evaluate the likelihood that this goal will be achieved by 2015. You will be able to identify a “data scenario” that clearly shows that progress has been made toward achieving this Millennium Development Goal. Working alone and with a team, you will complete five specific activities, as outlined in the table below:

Your Task	Completed Individually or as a Team?	Due Date
Complete the <i>UNMDGs Case Study—Part I</i> Student Handout	Individually	
Design and email a TinyURL to your teacher at this address: _____	Individually	
Design a three-slide PowerPoint presentation on your UNMDG	Team	
Deliver the presentation to the class	Team	
Provide feedback on seven teams’ presentations during a mock Philanthropy Summit	Team	

PART I IDENTIFYING THE GOAL

Visit the UNMDG website and answer the following questions:

United Nations Millennium Development Goals

<http://www.un.org/millenniumgoals/poverty.shtml>

1. Write out the formal title of Goal #1.
2. Write out the two targets related to this goal.
3. Describe in two to three sentences what this goal means to you.

PART II EXPLORING GLOBAL DATA

UNMDG authors want to overcome **poverty**. Using the Global Health Facts website, you can explore the variety of incomes and economies of countries around the world. In fact, one way to measure a population's economy is to measure the number of people in the country who make less than one dollar (U.S. equivalent) per day. Using the suggested website, answer the following questions:

Global Health Facts

<http://www.globalhealthfacts.org/data/topic/map.aspx?ind=100>

1. In **Table 1**, record the five countries with the highest percentage of people making less than \$1/day.



Eradicate hunger around the world.
Source: Photo by Addie Baker for Seattle BioMed

Table 1

Country	Percentage of People Making <\$1/day

2. What percentage of Mexican people make <\$1/day?
3. What percentage of Pakistani people make <\$1/day?
4. Does **Table 1** provide information on what percentage of Americans make <\$1/day? Explain.

The authors of this MDG think that people without money typically fail to get enough to eat. Learn more about the percentage of children who have been determined in their respective countries to be malnourished and **underweight** by the time they reach the age of five. Using the suggested website, answer the following questions:

UNICEF ChildInfo

http://www.childinfo.org/undernutrition_underweight.php

5. In **Table 2**, record the five countries with the highest percentage of children who are underweight.

Table 2

Country	% of Children under 59 Months of Age that are Moderately or Severely Underweight

6. What percentage of Nigerian children are moderately or severely underweight?
7. What percentage of Iraqi children are moderately or severely underweight?
8. What percentage of American children are moderately or severely underweight?

PART III ANIMATING THE DATA

Visit the **Gapminder** website:

Gapminder

<http://www.gapminder.org>

Click the “Load Gapminder World” button. Depending upon your computer and internet connection, this site may take a few seconds to load. Once it loads, click the “Full Screen” button to open up a new graph.

Gapminder: An internet-based, animated, graphic interface of authentic and documented world statistics from the Karolinska Institute in Sweden.

Using the suggestions below, manipulate your Gapminder graph:

1. Change the x- and y- axes of your graph. Move your cursor over these parts of the graph and click on the little arrows. A pop-up dialog window will appear with a variety of new categories from which to choose.
 - a. For the x-axis, go to the HEALTH section and choose the UNDERWEIGHT CHILDREN data set.
 - b. For the y-axis, go to the ECONOMY section and try all the data variations that can be found under POVERTY & INEQUALITY.
2. Look for trends and changes in these statistics for the countries around the world, by clicking the “Play” button with the big arrow at the lower-left of the graph.
3. Things moving too fast? Adjust the “Speed” setting next to the “Play” button. The animation speed can be changed by dragging the mouse up or down over the dashed lines.
4. Want to learn about any of the specific “bubbles” and countries? Move your cursor over these bubbles and click. Alternatively, once you see the name of the country appear as you hover over the bubble, find it in the right-hand box of countries (listed under the word “Select”) and click the box next to that country’s name.
5. There are many Gapminder categories that relate to UNMDG #1. Before completing the research questions below, adjust the x- and y-axes of your graph to also explore other data categories in these sections: ECONOMY, HEALTH, POPULATION, and WORK. You may find some interesting and relevant facts within each section as you explore UNMDG #1.

**PART IV
BUILDING
YOUR DATA
SCENARIO**

1. Review all the Gapminder graphs that you have built. Decide which graph—or Gapminder **scenario**—is the most convincing about the progress made toward reaching Goal #1 by 2015. For example, do you see a number of countries in your scenario making progress towards the goal that indicates a trend you want to show to the rest of your team members? After you have selected your most convincing Gapminder scenario, write three notes as to why you have selected this scenario.

a. This scenario is the most convincing because:

b. It is also convincing because:

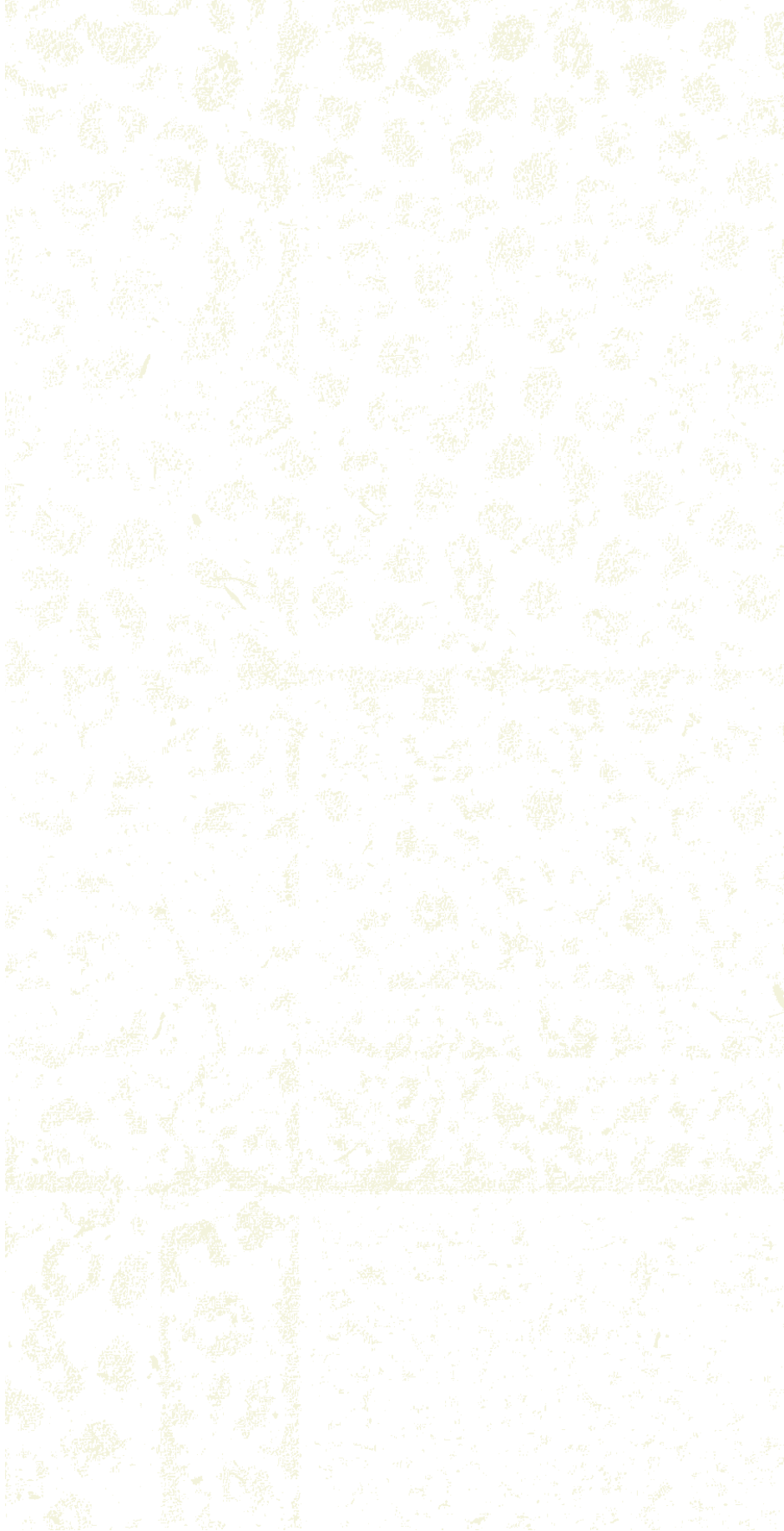
c. I was really surprised or impressed by the data I saw in this scenario because:

2. Save your chosen scenario by clicking the “Share Graph” button at the top of the graph. A pop-up dialog window will appear with a unique website address, which is a **TinyURL**. Record this address here:

TinyURL: A Uniform Resource Locator (URL) is a website address. Several internet providers can receive a long website address and convert it into a very short website that includes the TinyURL phrase (e.g., <http://tinyurl.com/3fmonoj>).

http://_____.

3. Compose an email to your teacher with your TinyURL in the body of the message. Your teacher will provide an email address to which to send the message.





UNMDGs Case Study — Part I

Goal #2: Universal Education



These globes in Geneva, Switzerland (at the office of the United Nations) symbolize the importance of global partnerships in achieving the UNMDGs by 2015.

Source: Photo by Natalie Flath for Seattle BioMed.

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Ban has told you that he has an upcoming meeting with a major philanthropic organization. This organization has a large sum of money that they want to invest in **global health** projects; however, they want to fund projects that have a high chance of success. Ban has asked you to focus your energies on Goal #2.

Your task is to analyze data from the Gapminder.org website and evaluate the likelihood that this goal will be achieved by 2015. You will be able to identify a “data scenario” that clearly shows that progress has been made toward achieving this Millennium Development Goal. Working alone and with a team, you will complete five specific activities, as outlined in the table below:

Your Task	Completed Individually or as a Team?	Due Date
Complete the <i>UNMDGs Case Study—Part I</i> Student Handout	Individually	
Design and email a TinyURL to your teacher at this address: _____	Individually	
Design a three-slide PowerPoint presentation on your UNMDG	Team	
Deliver the presentation to the class	Team	
Provide feedback on seven teams’ presentations during a mock Philanthropy Summit	Team	

PART I IDENTIFYING THE GOAL

Visit the UNMDG website and answer the following questions:

United Nations Millennium Development Goals

<http://www.un.org/millenniumgoals/poverty.shtml>

1. Write out the formal title of Goal #2.
2. Write out the one target related to this goal.
3. Describe in two to three sentences what this goal means to you.

PART II EXPLORING GLOBAL DATA

UNICEF data allows us to explore the extent to which children around the world attend elementary school (through fifth grade and beyond). Using the suggested website, answer the following questions:

UNICEF ChildInfo

http://www.childinfo.org/education_primary.php

1. In **Table 1**, record the five countries with the lowest percentage of children attending primary school (up to fifth grade).



Ministry of Higher Education in Kenya.
Source: Photo by Theresa Britschgi for Seattle BioMed.

Table 1

Country	Elementary/Primary School Attendance Rate (2003-2008) for both Boys and Girls (net)

2. What percentage of Mexican children attend primary school?

3. Looking at “Primary school net attendance ratio” data from Afghanistan, identify the difference between the percentage of boys and girls that attend primary school in this country. Also, identify which gender has the highest enrollment (boys or girls).

4. What percentage of Kenyan children attend primary school?

During the 20th century, diseases like **smallpox** were eradicated from the face of the earth with a strategic plan that included **vaccines**. In this century, we hope that similar strategies will end diseases such as **malaria**, **guinea worm**, and **polio**. We are very close to seeing the end of polio on our planet! Watch a short video on the progress of ending polio at the following website and then answer the questions below:

Vaccines Save Lives

<http://www.gatesfoundation.org/annual-letter/2011/Pages/vaccines-save-lives-animation.aspx>

5. In what four countries has the **transmission** of polio never been stopped (where the **infectious** virus moves between people and patients)?

6. Using the data source used to complete **Table 1**, record the primary school net attendance ratio of girls for each of the four countries noted in Question #5. What is the average primary school net attendance ratio of girls in these four countries?

**PART III
ANIMATING
THE DATA**

Visit the **Gapminder** website:

Gapminder

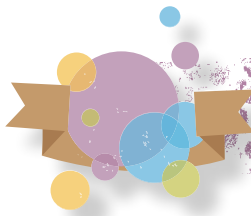
<http://www.gapminder.org>

Click the “Load Gapminder World” button. Depending upon your computer and internet connection, this site may take a few seconds to load. Once it loads, click the “Full Screen” button to open up a new graph.

Gapminder: An internet-based, animated, graphic interface of authentic and documented world statistics from the Karolinska Institute in Sweden.

Using the suggestions below, manipulate your Gapminder graph:

1. Change the x- and y- axes of your graph. Move your cursor over these parts of the graph and click on the little arrows. A pop-up dialog window will appear with a variety of new categories from which to choose.
 - a. For the x-axis, go to the HEALTH section and choose the INFANT MORTALITY data set.
 - b. For the y-axis, try all the data variations that can be found under the EDUCATION section; in particular look under SCHOOL ENROLLMENT to find PRIMARY COMPLETION RATE, % FOR EQUIVALENT AGE.



UNMDGs Case Study — Part I

Goal #3: Gender Equality & Empowering Women

HANDOUT



These globes in Geneva, Switzerland (at the office of the United Nations) symbolize the importance of global partnerships in achieving the UNMDGs by 2015.

Source: Photo by Natalie Flath for Seattle BioMed.

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Your task is to analyze data from the Gapminder.org website and evaluate the likelihood that this goal will be achieved by 2015. You will be able to identify a “data scenario” that clearly shows that progress has been made toward achieving this Millennium Development Goal. Working alone and with a team, you will complete five specific activities, as outlined in the table below:

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Deliver the presentation to the class	Team	
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PART I IDENTIFYING THE GOAL

Visit the UNMDG website and answer the following questions:

United Nations Millennium Development Goals

<http://www.un.org/millenniumgoals/poverty.shtml>

1. Write out the formal title of Goal #3.
2. Write out the one target related to this goal.
3. Describe in two to three sentences what this goal means to you.

PART II EXPLORING GLOBAL DATA

Use data from the ChildInfo website to explore the extent to which male and female children around the world attend elementary school (through fifth grade and beyond). Using the suggested website, answer the following questions:

UNICEF ChildInfo

http://www.childinfo.org/education_primary.php

1. In **Table 1**, record the five countries with the lowest percentage of girls attending elementary school (up to fifth grade).



Empowering Kenyan women through education.
Source: Photo by Theresa Britschgi for Seattle BioMed.

Table 1

Country	Primary School Participation: Primary school net attendance ratio, or % of girls vs boys attending primary school (2005-2009)

The UNMDG authors have noticed that there is a relationship between high poverty and the frequency with which women work outside of their home or their farm.

2. You can find a summary of the types of jobs held by women versus men around the world at the following website:

International Labor Organization

http://www.ilo.org/empelm/what/pubs/lang--en/docName--WCMS_123835/index.htm

3. Use the data from the NationMaster website to complete **Table 2**.

NationMaster

<http://www.nationmaster.com/cat/lab-labor>

Table 2

Country	% of Employed Females Engaged in the Agricultural Sector, 2002 Data	Female Legislators, Senior Officials, and Managers (as % of total), 2002 Data
Columbia		
Lithuania		
South Korea		
Turkey		
United States		

**PART III
ANIMATING
THE DATA**

Visit the **Gapminder** website:

Gapminder

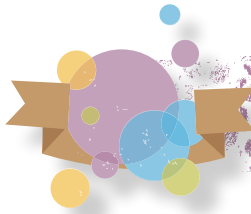
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Using the suggestions below, manipulate your Gapminder graph:

1. Change the x- and y- axes of your graph. Move your cursor over these parts of the graph and click on the little arrows. A pop-up dialog window will appear with a variety of new categories from which to choose.
 - a. For the x-axis, explore the LIFE EXPECTANCY data set or any of the categories in the POPULATION section.
 - b. For the y-axis, go to the EDUCATION section and try all the data variations that can be found under GENDER EQUALITY.



UNMDGs Case Study — Part I

Goal #4: Child Health



These globes in Geneva, Switzerland (at the office of the United Nations) symbolize the importance of global partnerships in achieving the UNMDGs by 2015.

Source: Photo by Natalie Flath for Seattle BioMed.

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Your task is to analyze data from the Gapminder.org website and evaluate the likelihood that this goal will be achieved by 2015. You will be able to identify a “data scenario” that clearly shows that progress has been made toward achieving this Millennium Development Goal. Working alone and with a team, you will complete five specific activities, as outlined in the table below:

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PART I IDENTIFYING THE GOAL

Visit the UNMDG website and answer the following questions:

United Nations Millennium Development Goals

<http://www.un.org/millenniumgoals/poverty.shtml>

1. Write out the formal title of Goal #4.
2. Write out one target related to this goal.
3. Describe in two to three sentences what this goal means to you.

PART II EXPLORING GLOBAL DATA

The UNMDG authors want children to live beyond their fifth birthday. Fortunately, there have been promising trends in the past 20 years! The Institute for Health Metrics and Evaluation at the University of Washington has provided critical feedback to the UN about infant mortality before age five. Load their Child Mortality (Global) Visualization Tool and then answer the following questions:

IHME Data Visualization

<http://www.healthmetricsandevaluation.org/resources/datasets/2010/mortality/results/child/maps/interactive.html>

1. Use the IHME map and data (located at the bottom of the website) to complete **Table 1**. Record the five countries with the greatest number of infant deaths per 1,000 babies.



A Haitian child receives clean drinking water.
Source: Photo by Alex Herbig for Seattle BioMed.

Table 1

Country	# of Deaths per 1,000 Children (Under 5)

Measles is an **infectious disease** caused by a virus. It is easily transmitted between people by breathing and when nose and mouth droplets get passed between people. Globally, measles cases significantly decreased starting in the 1960s with the invention and distribution of a childhood measles **vaccine**. Worldwide measles deaths—mostly for children under five—plummeted by 68%, from 757,000 in 2000 to 242,000 in 2006. Go to the UNMDG-sponsored website Measles Initiative to learn more about countries that need immunization assistance. Then, answer the following questions:

Measles Initiative

<http://www.measlesinitiative.org/mi/map>

2. How many countries were visited as part of a measles campaign between 2001-2008?
3. How many countries were visited in 2010?

**PART III
ANIMATING
THE DATA**

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Gapminder

<http://www.gapminder.org>

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 - a. For the x-axis, go to the HEALTH section, then the VACCINE section, and then the DTP3 IMMUNIZED % data set (the percentage of 1 year old children in the country receiving the three doses of the combined childhood immunization for diphtheria, tetanus toxoid and pertussis vaccine).
 - b. For the y-axis, go to the HEALTH section, then the HEALTH ECONOMICS section, and then the TOTAL HEALTH SPENDING PER PERSON (US\$) data set.
2. Adjust the “Speed” setting next to the “Play” button to the slowest possible setting by moving the triangle downwards. The animation speed can be changed by dragging the mouse up or down over the dashed lines.
3. Look for trends and changes in these statistics for the countries around the world, by clicking the “Play” button with the big arrow at the lower-left of the graph.
4. Want to learn about any of the specific “bubbles” and countries? Move your cursor over these bubbles and click. Alternatively, once you see the name of the country appear as you hover over the bubble, find it in the right-hand box of countries (listed under the word “Select”) and click the box next to that country’s name.



**PART IV
BUILDING
YOUR DATA
SCENARIO**

5. There are many Gapminder categories that relate to UNMDG #4. Before completing the research questions below, adjust the x- and y-axes of your graph to also explore other data categories in these sections: EDUCATION, HEALTH (especially various women’s health statistics, UNDERWEIGHT CHILDREN, CAUSES OF NEWBORN DEATHS, and CAUSES OF CHILD DEATHS), SOCIETY (especially BATTLE DEATHS), CHILDREN BY WOMEN, POPULATION (especially POPULATION GROWTH), and ENVIRONMENT (especially DISASTERS or DROUGHT). You may find some interesting and relevant facts within each section as you explore UNMDG #4.

1. Review all the Gapminder graphs that you have built. Decide which graph—or Gapminder **scenario**—is the most convincing about the progress made toward reaching Goal #4 by 2015. For example, do you see a number of countries in your scenario making progress towards the goal that indicates a trend you want to show to the rest of your team members? After you have selected your most convincing Gapminder scenario, write five notes as to why you have selected this scenario.

- a. Is there a correlation between health care dollars spent and the number of children getting the DTP vaccine to help prevent diphtheria, tetanus, and pertussis?
- b. Name three countries that have for five or more years increased the number of children getting vaccinated for DTP.
- c. This scenario is the most convincing because:
- d. It is also convincing because:
- e. I was really surprised or impressed by the data I saw in this scenario because:

2. Save your chosen scenario by clicking the “Share Graph” button at the top of the graph. A pop-up dialog window will appear with a unique website address, which is a **TinyURL**. Record this address here:

TinyURL: A Uniform Resource Locator (URL) is a website address. Several internet providers can receive a long website address and convert it into a very short website that includes the TinyURL phrase (e.g., <http://tinyurl.com/3fmono>).

http://_____.

3. Compose an email to your teacher with your TinyURL in the body of the message. Your teacher will provide an email address to which to send the message.



UNMDGs Case Study — Part I

Goal #5: Maternal Health



These globes in Geneva, Switzerland (at the office of the United Nations) symbolize the importance of global partnerships in achieving the UNMDGs by 2015.

Source: Photo by Natalie Flath for Seattle BioMed.

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PART I IDENTIFYING THE GOAL

Visit the UNMDG website and answer the following questions:

United Nations Millennium Development Goals
<http://www.un.org/millenniumgoals/poverty.shtml>

1. Write out the formal title of Goal #5.
2. Write out one target related to this goal.
3. Describe in two to three sentences what this goal means to you.

PART II EXPLORING GLOBAL DATA

The UNMDG authors want to improve the health of pregnant and breastfeeding women. Data on maternal health are collected by the **World Health Organization (WHO)** and are available at the Kaiser Family Foundation's website.

Global Health Facts: Maternal Mortality Ratio
<http://www.globalhealthfacts.org/data/topic/map.aspx?ind=95>

Global Health Facts: Female Life Expectancy at Birth
<http://www.globalhealthfacts.org/data/topic/map.aspx?ind=97&by=Data>

1. Complete **Table 1** using the websites listed above.



Improve maternal health.
 Source: Photo property of Seattle BioMed.

Table 1

Country	Maternal Mortality Ratio (Per 100,000 Live Births) in 2005	Female Life Expectancy at Birth (Years) in 2007
Afghanistan		
Chad		
Lesotho		
Sierra Leone		
United States		
Zimbabwe		

The health care that an expecting mother receives during the birth of her baby can influence whether her baby survives birth and infancy. A key to improving maternal and child health outcomes is to have skilled health workers attend births.

Global Health Facts: Births Attended by Skilled Health Personnel

<http://www.globalhealthfacts.org/data/topic/map.aspx?ind=77&by=Data>

2. Complete **Table 2** using the website listed above.

Table 2

Country	Births Attended by Skilled Health Personnel (% of Births) in 2000-2008
Afghanistan	
Chad	
Lesotho	
Sierra Leone	
United States	
Zimbabwe	

3. Using the data in **Table 2**, circle the correct word to complete the following sentences:
- There is a **direct/inverse** relationship between maternal mortality and attendance of a skilled health care worker care.
 - There is a **direct/inverse** relationship between maternal mortality and maternal life expectancy.
 - There is a **direct/inverse** relationship between maternal life expectancy and access to skilled health care workers.

**PART III
ANIMATING
THE DATA**

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Using the suggestions below, manipulate your Gapminder graph:

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- a. For the x-axis, select the HEALTH section, followed by the MATERNAL HEALTH section, and then go to the MATERNAL MORTALITY RATIO (per 1000,000 births) data set. This category looks at the number of women in a given year who die from pregnancy complications versus the number of babies born in a population of a 100,000 women.
 - b. For the y-axis, select the AVERAGE LIFE EXPECTANCY data set.
2. Move the timeline cursor to 1980 for a rich data set. Look for trends and changes in these statistics for the countries around the world, by clicking the “Play” button with the big arrow at the lower-left of the graph.
 3. Things moving too fast? Adjust the “Speed” setting next to the “Play” button. The animation speed can be changed by dragging the mouse up or down over the dashed lines.
 4. Want to learn about any of the specific “bubbles” and countries? Move your cursor over these bubbles and click. Alternatively, once you see the name of the country appear as you hover over the bubble, find it in the right-hand box of countries (listed under the word “Select”) and click the box next to that country’s name.
 5. There are many Gapminder categories that relate to UNMDG #5. Before completing the research questions below, adjust the x- and y-axes of your graph to also explore other data categories in these sections: HEALTH (especially MATERNAL HEALTH and various women’s health statistics), CHILDREN BY WOMEN, and ECONOMY (especially SECTORS). You may find some interesting and relevant facts within each section as you explore UNMDG #5.

PART IV BUILDING YOUR DATA SCENARIO

1. Review all the Gapminder graphs that you have built. Decide which graph—or Gapminder **scenario**—is the most convincing about the progress made toward reaching Goal #5 by 2015. For example, do you see a number of countries in your scenario making progress towards the goal that indicates a trend you want to show to the rest of your team members? After you have selected your most convincing Gapminder scenario, write three notes as to why you have selected this scenario.
 - a. This scenario is the most convincing because:
 - b. It is also convincing because:
 - c. I was really surprised or impressed by the data I saw in this scenario because:

2. Save your chosen scenario by clicking the “Share Graph” button at the top of the graph. A pop-up dialog window will appear with a unique website address, which is a **TinyURL**. Record this address here:

TinyURL: A Uniform Resource Locator (URL) is a website address. Several internet providers can receive a long website address and convert it into a very short website that includes the TinyURL phrase (e.g., <http://tinyurl.com/3fmonoj>).

http://_____.

3. Compose an email to your teacher with your TinyURL in the body of the message. Your teacher will provide an email address to which to send the message.



UNMDGs Case Study — Part I

Goal #6: Combat HIV/AIDS

HANDOUT



These globes in Geneva, Switzerland (at the office of the United Nations) symbolize the importance of global partnerships in achieving the UNMDGs by 2015.

Source: Photo by Natalie Flath for Seattle BioMed.

Global Health: An area of study, research, and practice that places a priority on improving health and achieving equity in health for all people worldwide. It emphasizes transnational health issues, determinants, and solutions; involves many disciplines within and beyond the health sciences and promotes interdisciplinary collaboration; and is a synthesis of population-based prevention with individual-level clinical care.

You are a Senior Information Analyst with the United Nations. You and your colleagues have been assigned a task directly by the head of the United Nations: UN Secretary-General Ban Ki-moon. The Secretary-General wants your help in reviewing the progress that has been made toward meeting each of the eight Millennium Development Goals.

Ban has told you that he has an upcoming meeting with a major philanthropic organization. This organization has a large sum of money that they want to invest in **global health** projects; however, they want to fund projects that have a high chance of success. Ban has asked you to focus your energies on Goal #6.

Your task is to analyze data from the Gapminder.org website and evaluate the likelihood that this goal will be achieved by 2015. You will be able to identify a “data scenario” that clearly shows that progress has been made toward achieving this Millennium Development Goal. Working alone and with a team, you will complete five specific activities, as outlined in the table below:

Your Task	Completed Individually or as a Team?	Due Date
Complete the <i>UNMDGs Case Study—Part I</i> Student Handout	Individually	
Design and email a TinyURL to your teacher at this address: _____	Individually	
Design a three-slide PowerPoint presentation on your UNMDG	Team	
Deliver the presentation to the class	Team	
Provide feedback on seven teams’ presentations during a mock Philanthropy Summit	Team	

PART I IDENTIFYING THE GOAL

Visit the UNMDG website and answer the following questions:

United Nations Millennium Development Goals

<http://www.un.org/millenniumgoals/poverty.shtml>

1. Write out the formal title of Goal #6.
2. Write out the two targets related to this goal.
3. Describe in two to three sentences what this goal means to you.

PART II EXPLORING GLOBAL DATA

The UNMDG authors seek to support the research of diseases caused by microscopic, infectious organisms. Data on **infectious diseases** are collected by the **World Health Organization (WHO)** and are available at the Kaiser Family Foundation's website.

Global Health Facts: Deaths Related to AIDS

<http://www.globalhealthfacts.org/data/topic/map.aspx?ind=7>

Global Health Facts: Number of Adults Living with HIV

<http://www.globalhealthfacts.org/data/topic/map.aspx?ind=2>

1. Complete **Table 1** using the websites listed above.



Research to combat the global burden of malaria at the Kenya Medical Research Institute (KEMRI). Source: Photo by Theresa Britschgi for Seattle BioMed.

Table 1

Country	Deaths Related to AIDS in a Given Year	# of Adults Living with HIV
France		
Haiti		
India		
South Africa		
Uganda		
United States		

2. The data in **Table 1** clearly shows that people in some countries are able to survive HIV infections without dying of AIDS. Which country has the fewest people annually dying of AIDS?
3. People in Uganda are more or less likely than Americans to survive an HIV infection?
4. List three factors that you think are contributing to the reality that there are different HIV survival rates around the world.

The AIDS epidemic is the one of the greatest challenges of our time. There are several reasons why in 2008 nearly 34 million people were infected with the **HIV virus** that causes this disease. These reasons include the following:

- The challenges of discussing a disease that is transmitted through sexual intercourse and intravenous drug use (social stigmas).
- The way in which the virus destroys one of the most important **immune cells** in the body.
- The expense and daily trouble of taking medications to keep the concentration of the virus in the body low, while fighting off the other invaders (like **tuberculosis** and **malaria**) that try to infect HIV+ people whose immune systems no longer function well.
- That most people around the world who are HIV+ people are middle age (the age of your parents). These are the very people who have jobs, raise crops, and basically add money to a nation's economy. For this reason, nations with high rates of HIV infections often also have high poverty levels.

Data on HIV/AIDS are collected by the World Health Organization (WHO) and are available at the following websites:

Global Health Facts: Percent of Women Who use Contraceptives During Sex

<http://www.globalhealthfacts.org/data/topic/map.aspx?ind=89>

Global Health Facts: Number of AIDS Orphans

<http://www.globalhealthfacts.org/data/topic/map.aspx?ind=8>

NationMaster: Number of AIDS Orphans

http://www.nationmaster.com/graph/hea_hiv_chi_orp_by_aid_0_14_yea-orphaned-aids-0-14-years

Global Health Facts: Number of Hospital Beds

<http://www.globalhealthfacts.org/data/topic/map.aspx?ind=78>

Global Health Facts: Number of Tuberculosis Cases

<http://www.globalhealthfacts.org/data/topic/map.aspx?ind=17>

5. Explore these facts by completing **Table 2** using the websites listed above.

Table 2

Country	Percentage of Women Who Use Contraceptives During Sex (age 15–49)	Number of Orphan Children, where Parents have Died of AIDS	Number of Hospital Beds per 100,000 People	Number of Tuberculosis Cases (per 100,000 people)
Chad				
France				
Haiti				
India				
South Africa				
Uganda				
United States				

**PART III
ANIMATING
THE DATA**

Visit the **Gapminder** website:

Gapminder

<http://www.gapminder.org>

Click the “Load Gapminder World” button. Depending upon your computer and internet connection, this site may take a few seconds to load. Once it loads, click the “Full Screen” button to open up a new graph.

Gapminder: An internet-based, animated, graphic interface of authentic and documented world statistics from the Karolinska Institute in Sweden.

Using the suggestions below, manipulate your Gapminder graph to see trends in HIV, tuberculosis (TB), and malaria.

1. Change the x- and y- axes of your graph. Move your cursor over these parts of the graph and click on the little arrows. A pop-up dialog window will appear with a variety of new categories from which to choose.
 - a. For the x-axis, select the AVERAGE LIFE EXPECTANCY data set.
 - b. For the y-axis, look at the burden of infectious disease in countries worldwide. The HIV virus harms a body’s ability to fight off infections, so we may be sometimes looking at data for patients that have more than one infection. Go to the HEALTH section. In this section, select:
 - i. TB WITH HIV+, NEW CASES PER 100,00 (ESTIMATED) data set and in particular, watch the trends in Zambia and Zimbabwe.
 - ii. MALARIA CASES PER 100,000 REPORTED data set.
 - iii. TOTAL HEALTH SPENDING data set under the HEALTH ECONOMICS (% GDP) section.

2. Change the x- and y-axes of your graph one more time.
 - a. For the x-axis, select the HIV INFECTED (%) data set under the HEALTH section.
 - b. For the y-axis, look at all the HEALTH data sets, including the ALL FORMS OF TB, NEW CASES PER 100,000 data set.
3. Look for trends and changes in these statistics for the countries around the world, by clicking the “Play” button with the big arrow at the lower-left of the graph.
4. Things moving too fast? Adjust the “Speed” setting next to the “Play” button. The animation speed can be changed by dragging the mouse up or down over the dashed lines.
5. Want to learn about any of the specific “bubbles” and countries? Move your cursor over these bubbles and click. Alternatively, once you see the name of the country appear as you hover over the bubble, find it in the right-hand box of countries (listed under the word “Select”) and click the box next to that country’s name.
6. There are many Gapminder categories that relate to UNMDG #6. Before completing the research questions below, adjust the x- and y-axes of your graph to also explore other data categories in these sections: EDUCATION (especially ACHIEVEMENT), HEALTH (especially NUTRITION, CAUSES OF NEWBORN DEATHS, and CAUSES OF CHILD DEATHS), ENVIRONMENT (especially FORESTRY), CHILDREN BY WOMEN, POPULATION (especially CHILDREN AND ELDERLY). You may find some interesting and relevant facts within each section as you explore UNMDG #6.

PART IV BUILDING YOUR DATA SCENARIO

1. Review all the Gapminder graphs that you have built. Decide which graph—or Gapminder **scenario**—is the most convincing about the progress made toward reaching Goal #6 by 2015. For example, do you see a number of countries in your scenario making progress towards the goal that indicates a trend you want to show to the rest of your team members? After you have selected your most convincing Gapminder scenario, write three notes as to why you have selected this scenario.
 - a. This scenario is the most convincing because:

 - b. It is also convincing because:

 - c. I was really surprised or impressed by the data I saw in this scenario because:

2. Save your chosen scenario by clicking the “Share Graph” button at the top of the graph. A pop-up dialog window will appear with a unique website address, which is a **TinyURL**. Record this address here:

TinyURL: A Uniform Resource Locator (URL) is a website address. Several internet providers can receive a long website address and convert it into a very short website that includes the TinyURL phrase (e.g., <http://tinyurl.com/3fmonoj>).

http://_____.

3. Compose an email to your teacher with your TinyURL in the body of the message. Your teacher will provide an email address to which to send the message.





UNMDGs Case Study — Part I

Goal #7: Environmental Sustainability



These globes in Geneva, Switzerland (at the office of the United Nations) symbolize the importance of global partnerships in achieving the UNMDGs by 2015.

Source: Photo by Natalie Flath for Seattle BioMed.

Global Health: An area of study, research, and practice that places a priority on improving health and achieving equity in health for all people worldwide. It emphasizes transnational health issues, determinants, and solutions; involves many disciplines within and beyond the health sciences and promotes interdisciplinary collaboration; and is a synthesis of population-based prevention with individual-level clinical care.

You are a Senior Information Analyst with the United Nations. You and your colleagues have been assigned a task directly by the head of the United Nations: UN Secretary-General Ban Ki-moon. The Secretary-General wants your help in reviewing the progress that has been made toward meeting each of the eight Millennium Development Goals.

Ban has told you that he has an upcoming meeting with a major philanthropic organization. This organization has a large sum of money that they want to invest in **global health** projects; however, they want to fund projects that have a high chance of success. Ban has asked you to focus your energies on Goal #7.

Your task is to analyze data from the Gapminder.org website and evaluate the likelihood that this goal will be achieved by 2015. You will be able to identify a “data scenario” that clearly shows that progress has been made toward achieving this Millennium Development Goal. Working alone and with a team, you will complete five specific activities, as outlined in the table below:

Your Task	Completed Individually or as a Team?	Due Date
Complete the <i>UNMDGs Case Study—Part I</i> Student Handout	Individually	
Design and email a TinyURL to your teacher at this address: _____	Individually	
Design a three-slide PowerPoint presentation on your UNMDG	Team	
Deliver the presentation to the class	Team	
Provide feedback on seven teams’ presentations during a mock Philanthropy Summit	Team	

**PART I
IDENTIFYING
THE GOAL**

Visit the UNMDG website and answer the following questions:

United Nations Millennium Development Goals

<http://www.un.org/millenniumgoals/poverty.shtml>

1. Write out the formal title of Goal #7.
2. Write out the three targets related to this goal.
3. Describe in two to three sentences what this goal means to you.

**PART II
EXPLORING
GLOBAL DATA**

Data from the NationMaster website (which includes data from the CIA, the UN, and other agencies) can be used to examine sustainable development practices, increased global access to safe drinking water, and livable housing. Using the suggested website, answer the following questions:

NationMaster: Proportion of Land Area Covered by Forest

http://www.nationmaster.com/graph/env_for_are_sq_km-environment-forest-area-sq-km

NationMaster: Ratio of Land Having Wilderness Protection

http://www.nationmaster.com/graph/env_wil-environment-wildness

NationMaster: Carbon Dioxide Emissions

http://www.nationmaster.com/graph/env_co2_emi-environment-co2-emissions

1. Complete **Table 1** using the websites suggested above.



Many women around the world have to walk long distances carrying drinking water for their families. Source: Photo by Addie Baker for Seattle BioMed.

Table 1

Country	Land Area Covered by Forest (km ²)	Ratio of Land Having Wilderness Protection	Carbon Dioxide Emissions (per capita)
China			
Colombia			
Costa Rica			
Mexico			
Sudan			
United States			

2. Using the data from **Table 1**, compare the forest sizes of China to the United States. Which country has dedicated the larger portion of its land to wilderness protection? By how much?

3. Colombia is 1,038,700 km². At 2,376,000 km², the country of Sudan in Africa is twice as big in total land size. Compare the amount of land with wilderness protection and the carbon dioxide emissions for Columbia and Sudan.

Many **infectious diseases**, such as **polio** and cholera, are transmitted by drinking water contaminated with human waste (such as feces and urine). This happens when people don't have access to **sanitation** facilities (septic systems and sewage systems to manage and treat human waste). Most people around the world drink water that is contaminated by human and/or animal waste, which means that the water has not been filtered and purified to make it safe to drink. Using the suggested website, answer the following questions:

Global Health Facts: Access to Sanitation

<http://www.globalhealthfacts.org/topic.jsp?i=45>

Global Health Facts: Access to Improved Water Sources

<http://www.globalhealthfacts.org/topic.jsp?i=44>

NationMaster: Available Renewable Drinking Water

http://www.nationmaster.com/graph/hea_wat_ava-health-water-availability

4. Learn about drinking water by completing **Table 2**. Use the websites suggested above.

Table 2

Country	Access to Sanitation	Percent of People with Access to an Improved Water Source	Amount of Available Renewable Drinking Water (cubic meters)
China			
Colombia			
Costa Rica			
Mexico			
Sudan			
United States			<i>Not Available</i>

5. In the United States, federal laws and funding programs ensure that human waste is treated and that most Americans have clean water to drink. Of the countries you researched above, which country has the most renewable water?

6. What percentage of people in that country have their wastewater treated?

PART III ANIMATING THE DATA

Visit the Gapminder website:

Gapminder

<http://www.gapminder.org>

Click the “Load Gapminder World” button. Depending upon your computer and internet connection, this site may take a few seconds to load. Once it loads, click the “Full Screen” button to open up a new graph.

Gapminder: An internet-based, animated, graphic interface of authentic and documented world statistics from the Karolinska Institute in Sweden.

Using the suggestions below, manipulate your Gapminder graph:

1. For a look at the impact of access to clean water on health, set up these conditions:
Change the x- and y- axes of your graph. Move your cursor over these parts of the graph and click on the little arrows. A pop-up dialog window will appear with a variety of new categories from which to choose.
 - a. For the x-axis, select the AVERAGE LIFE EXPECTANCY data set.
 - b. For the y-axis, go to the INFRASTRUCTURE section, then to the SANITATION section, and then choose the IMPROVED SANITATION (OVERALL SUCCESS) data set.
2. To explore the rates of global forest contraction and expansion, set up these conditions:
 - c. For the x-axis, select the ENVIRONMENT section, then select the FOREST section, and then choose the PLANTED FOREST AREA (HA) data set.
 - d. For the y-axis, select the ENVIRONMENT section, then select the FOREST section, and then choose the WOOD REMOVAL data set.
3. Look for trends and changes in these statistics for the countries around the world, by clicking the “Play” button with the big arrow at the lower-left of the graph.
4. Things moving too fast? Adjust the “Speed” setting next to the “Play” button. The animation speed can be changed by dragging the mouse up or down over the dashed lines.
5. Want to learn about any of the specific “bubbles” and countries? Move your cursor over these bubbles and click. Alternatively, once you see the name of the country appear as you hover over the bubble, find it in the right-hand box of countries (listed under the word “Select”) and click the box next to that country’s name.

**PART IV
BUILDING
YOUR DATA
SCENARIO**

6. There are many Gapminder categories that relate to UNMDG #7. Before completing the research questions below, adjust the x- and y-axes of your graph to also explore other data categories in these sections: EDUCATION (especially ACHIEVEMENT), ECONOMY (especially SECTORS), ENERGY, ENVIRONMENT (especially EMISSIONS), and WORK (especially EMPLOYMENT BY SECTOR). You may find some interesting and relevant facts within each section as you explore UNMDG #7.

1. Review all the Gapminder graphs that you have built. Decide which graph—or Gapminder **scenario**—is the most convincing about the progress made toward reaching Goal #7 by 2015. For example, do you see a number of countries in your scenario making progress towards the goal that indicates a trend you want to show to the rest of your team members? After you have selected your most convincing Gapminder scenario, write three notes as to why you have selected this scenario.

a. This scenario is the most convincing because:

b. It is also convincing because:

c. I was really surprised or impressed by the data I saw in this scenario because:

2. Save your chosen scenario by clicking the “Share Graph” button at the top of the graph. A pop-up dialog window will appear with a unique website address, which is a **TinyURL**. Record this address here:

TinyURL: A Uniform Resource Locator (URL) is a website address. Several internet providers can receive a long website address and convert it into a very short website that includes the TinyURL phrase (e.g., <http://tinyurl.com/3fmono>).

http://_____.

3. Compose an email to your teacher with your TinyURL in the body of the message. Your teacher will provide an email address to which to send the message.





UNMDGs Case Study — Part I

Goal #8: Global Partnership



These globes in Geneva, Switzerland (at the office of the United Nations) symbolize the importance of global partnerships in achieving the UNMDGs by 2015.

Source: Photo by Natalie Flath for Seattle BioMed.

Global Health: An area of study, research, and practice that places a priority on improving health and achieving equity in health for all people worldwide. It emphasizes transnational health issues, determinants, and solutions; involves many disciplines within and beyond the health sciences and promotes interdisciplinary collaboration; and is a synthesis of population-based prevention with individual-level clinical care.

You are a Senior Information Analyst with the United Nations. You and your colleagues have been assigned a task directly by the head of the United Nations: UN Secretary-General Ban Ki-moon. The Secretary-General wants your help in reviewing the progress that has been made toward meeting each of the eight Millennium Development Goals.

Ban has told you that he has an upcoming meeting with a major philanthropic organization. This organization has a large sum of money that they want to invest in **global health** projects; however, they want to fund projects that have a high chance of success. Ban has asked you to focus your energies on Goal #8.

Your task is to analyze data from the Gapminder.org website and evaluate the likelihood that this goal will be achieved by 2015. You will be able to identify a “data scenario” that clearly shows that progress has been made toward achieving this Millennium Development Goal. Working alone and with a team, you will complete five specific activities, as outlined in the table below:

Your Task	Completed Individually or as a Team?	Due Date
Complete the <i>UNMDGs Case Study—Part I</i> Student Handout	Individually	
Design and email a TinyURL to your teacher at this address: _____	Individually	
Design a three-slide PowerPoint presentation on your UNMDG	Team	
Deliver the presentation to the class	Team	
Provide feedback on seven teams’ presentations during a mock Philanthropy Summit	Team	

PART I IDENTIFYING THE GOAL

Visit the UNMDG website and answer the following questions:

United Nations Millennium Development Goals

<http://www.un.org/millenniumgoals/poverty.shtml>

1. Write out the formal title of Goal #8.
2. UNMDG #8 has seven targets that relate to debt, youth employment, cost of pharmaceutical drugs, and access to new technologies. Describe in two to three sentences why you think the United Nation wants developing nations to have a strategy that explicitly addresses youth employment and access to mobile phones?
3. Describe in two to three sentences what this goal means to you.

PART II EXPLORING GLOBAL DATA

Some of the desired outcomes for Goal #8 include: increasing accessibility and trade in emerging market nations, tackling monstrous foreign debt, and encouraging the access of new medicines and technologies.

Many countries will take longer than others to successfully and actively participate in a global economy. The Worldmapper website uses data from the World Bank to visually portray the places in the world where people live in poverty. Regional sizes are shown in different colors, illustrating the proportion of all people living on the equivalent of a dollar a day or less. Using the suggested website, answer the following questions:

Worldmapper's Wretched Dollar

<http://www.worldmapper.org/display.php?selected=179>

1. Describe how the region of North America looks to you.
2. Name a geographical region where a great proportion of people live on \$1 per day.



Global partnerships are critical to achieving the UNMDGs. Source: Addie Baker for Seattle BioMed.



3. Was this type of illustration useful and informative to you when thinking about poverty trends? Can you find the financially troubled areas quickly?

Governments in poorer countries—or developing nations—typically have enormous debts that require payments. They spend so much money paying back these debts that they have little money left over to invest in social and human services, let alone in business development. Using the suggested website, answer the following questions:

World Fact Book: Percent of Working-age People without Employment

<https://www.cia.gov/library/publications/the-world-factbook/rankorder/2129rank.html>

World Fact Book: Total Public and Private Debt

<https://www.cia.gov/library/publications/the-world-factbook/rankorder/2079rank.html>

4. Use the websites suggest above to complete **Table 1**.

Table 1

Country	Percent of Working-age People Without Employment	Total Public and Private Debt Owed to Non-residents Repayable in Foreign Currency, Goods, or Services (\$)
China		
Colombia		
Costa Rica		
Mexico		
Sudan		
United States		

5. Name the country with the highest unemployment.

6. Name the country with the greatest debt.

PART III ANIMATING THE DATA

Visit the **Gapminder** website:

Gapminder

<http://www.gapminder.org>

Click the “Load Gapminder World” button. Depending upon your computer and internet connection, this site may take a few seconds to load. Once it loads, click the “Full Screen” button to open up a new graph.

Gapminder: An internet-based, animated, graphic interface of authentic and documented world statistics from the Karolinska Institute in Sweden.

Using the suggestions below, manipulate your Gapminder graph:

1. Change the x- and y- axes of your graph. Move your cursor over these parts of the graph and click on the little arrows. A pop-up dialog window will appear with a variety of new categories from which to choose.
 - a. For the x-axis, select the INCOME PER PERSON data set.
 - b. For the y-axis, check out these data sets:
 - i. Select PATENT APPLICATIONS in the TECHNOLOGY AND INFRASTRUCTURE section.
 - ii. Go to the ECONOMY section, then to the DEBT & TRADE section, and choose the TRADE BALANCE (% GDP) data set. This last data set is best seen using a log scale rather than linear. The Trade Balance data is unusual in that the value, on either side of the zero, indicates the degree to which the country imports (left) or exports (right) goods and services.
2. Look for trends and changes in these statistics for the countries around the world, by clicking the “Play” button with the big arrow at the lower-left of the graph.
3. Things moving too fast? Adjust the “Speed” setting next to the “Play” button. The animation speed can be changed by dragging the mouse up or down over the dashed lines.
4. Want to learn about any of the specific “bubbles” and countries? Move your cursor over these bubbles and click. Alternatively, once you see the name of the country appear as you hover over the bubble, find it in the right-hand box of countries (listed under the word “Select”) and click the box next to that country’s name.
5. There are many Gapminder categories that relate to UNMDG #8. Before completing the research questions below, adjust the x- and y-axes of your graph to also explore other data categories in these sections: INFRASTRUCTURE (especially COMMUNICATION), ECONOMY (especially ECONOMIC SITUATION), and HEALTH (especially HEALTH ECONOMICS). You may find some interesting and relevant facts within each section as you explore UNMDG #8.

**PART IV
BUILDING
YOUR DATA
SCENARIO**

1. Review all the Gapminder graphs that you have built. Decide which graph—or Gapminder **scenario**—is the most convincing about the progress made toward reaching Goal #8 by 2015. For example, do you see a number of countries in your scenario making progress towards the goal that indicates a trend you want to show to the rest of your team members? After you have selected your most convincing Gapminder scenario, write three notes as to why you have selected this scenario.

a. This scenario is the most convincing because:

b. It is also convincing because:

c. I was really surprised or impressed by the data I saw in this scenario because:

2. Save your chosen scenario by clicking the “Share Graph” button at the top of the graph. A pop-up dialog window will appear with a unique website address, which is a **TinyURL**. Record this address here:

TinyURL: A Uniform Resource Locator (URL) is a website address. Several internet providers can receive a long website address and convert it into a very short website that includes the TinyURL phrase (e.g., <http://tinyurl.com/3fmono>).

http://_____.

3. Compose an email to your teacher with your TinyURL in the body of the message. Your teacher will provide an email address to which to send the message.

