Cemetery Lab

Engage

1. Who is the oldest person alive that you personally know?

2. Did anyone in your family live past 100? If so, who?

3. How long do you think people live for? In other words, what's the average lifespan of people in the United States?

4. Recall survivorship curves. Describe the three types of survivorship curves.

Type I:

Type II:

Type III:

5. Which curve represents humans? _____
6. Do you think human survivorship curves have changed in the past 200 years? How?

Explore

Work in pairs to sort through pictures of tombstones. You will get a separate handout with data tables to fill out as a pair. These are tombstones from different cemeteries in the United States.

When finished with your tables, make a graph.

Graph (on a separate sheet of paper. One graph per person)

1. Plot your survivorship curves data sets (Tables 3 and 4, columns E and J) by age group on one graph. You will have 4 lines.

2. Use 4 different colors-one for each data set.

3. Title your graph, label both axes, and fill in the legend showing your color choices.

4. Connect the data points to create pre- and post-1880 survivorship curves for males and females.

Explain: Student Sense-Making

1. Overall, how did the pre-1900 and post-1900 survivorship curves differ?

2. Think about it: What might be some main health problems for people before 1900? (What have you seen on TV or the movies from the western days or the 1800s?)

3. Overall, how did the male and female survivorship curves differ in both time periods?

4. In which time period were there more infant and child mortality/deaths (ages 1-15)? Hypothesize why this is.

5. Do baby boys or baby girls have a higher death rate? Hypothesize a reason for this.

6. In which time period did women have a longer life expectancy than men? Hypothesize a reason for this.

7. In which time period did more women die in their 20s and 30s? Hypothesize a reason for this.

8. Which time period had more old people? What societal and economic issues arise from this? (Think about the video from Japan or what's in your textbook)

9. These pictures were from cemeteries in the United States, which is in a ***developed*** country. In what ways could the data from the 1800s be like a ***developing*** country of today?

Question :: *How can we use survivorship curves to make judgments about environmental and health conditions in a country?*

Claim :: (Complete sentence answer to the question above.)

Cemetery Lab Continued

Name _____Per_____

Explain: New Understandings and Vocabulary

➔ Watch this video: **Top 10 Medical Inventions That Changed The World: Life-Saving Miracles**

➔ Read the article "10 Health Advances that Changed the World" and fill in the graphic organizer.

➔ Change any of the answers from the last page "Explain Student Sense-Making" with knowledge from these sources.

Elaborate: Survivorship Curve Predictions

All the graphs below represent an average survivorship curve for humans in a ***modern developed*** country.
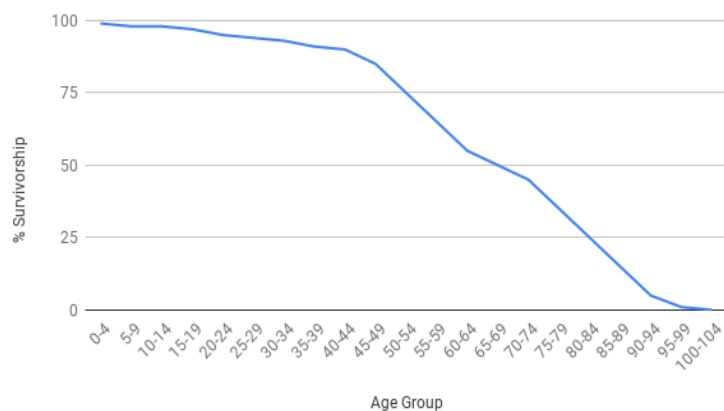
10. Sketch <u>another</u> line on this graph that would represent a ***developing*** country. Explain why you drew it this way:
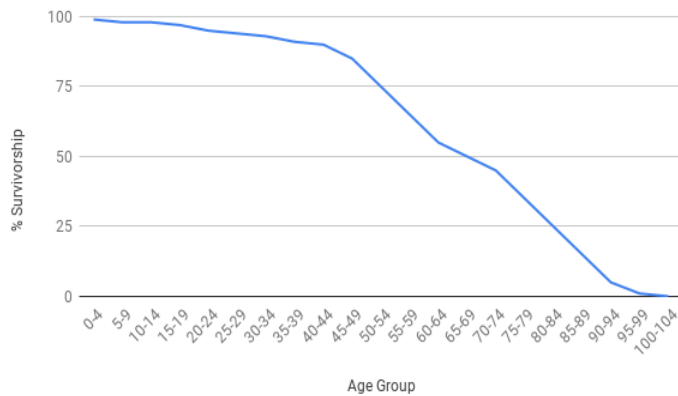

% Survivorship vs. Age Group
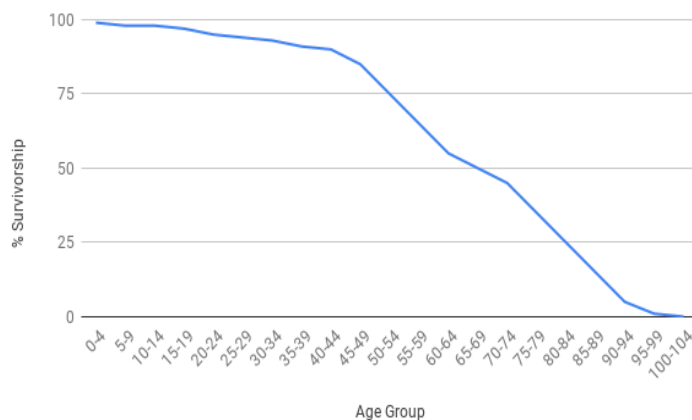
11. Sketch how the ***developing*** country's curve might change if people had more access to healthcare, vaccines and medicines. Explain why you drew it this way:


% Survivorship vs. Age Group

12. Sketch how a ***developed*** country's (like the US) curve might change if environmental problems worsen and pollution-related diseases (like asthma and cancer) increase: Explain why you drew it this way.
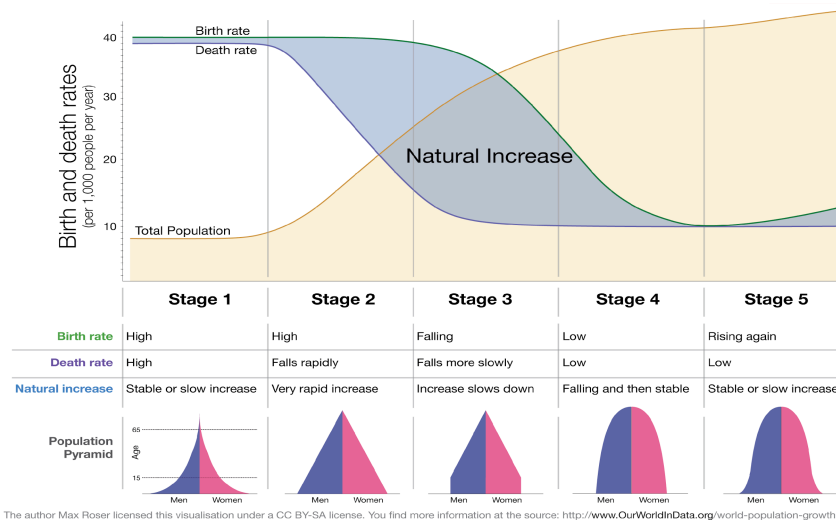
% Survivorship vs. Age Group

13. Sketch another line on this graph, which could represent how an African country's survivorship curve would change due to HIV/AIDS killing many people in their 20s and 30s.

% Survivorship vs. Age Group
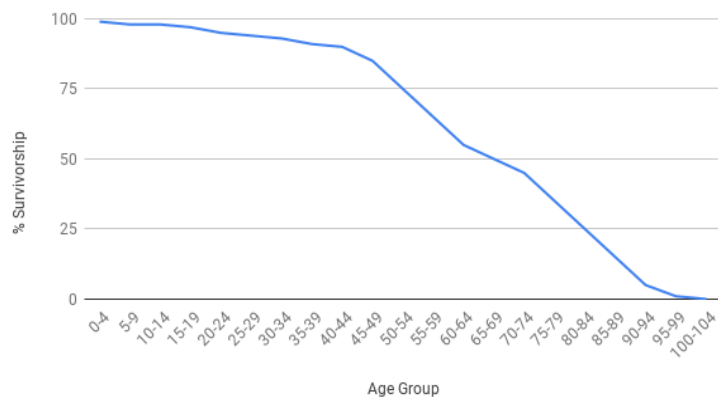
14. How could you use these curves to make judgments about environmental and health conditions in a country? Discuss health care, vaccines, sanitation (like sewers and toilets), clean water, and nutrition.

15. Think about it. If you used a time machine, visited a cemetery 100 years from now, and gathered data, what do you think the survivorship curves would show? Would life expectance increase or decrease? Why?

Elaborate: Demographic Transition

The author Max Roser licensed this visualisation under a CC BY-SA license. You find more information at the source: http://www.OurWorldInData.org/world-population-growth

For help with #17 and #18, go to https://bit.ly/2pt39i8

17. In the 1800s, Los Angeles (and the US) was in which stage of demographic transition?

18. In the 1900s, Los Angeles (and the US) was in which stage of demographic transition?

Evaluate (Optional) Write a chunk paragraph describing how AND why the population dynamics of the United States changed in the past 200 years. Use evidence from this lab.