

Name: _____ Date: _____ Period: _____

Code Cracking

Global Cancer Mini-Project

Description:

In this mini-project, you will work in a small team to either: (a) investigate a specific type of cancer (i.e., stomach) across different countries/regions or (b) investigate a country/region and examine rates of different types of cancer (i.e., brain, breast, stomach, lung, etc.). Your team will engage in sensemaking of statistics, articles, data, and data visualizations from multiple online sources. Your team will develop an explanatory model—leveraging your understanding of the genetics of cancer—to develop an evidence-based explanation for these disparities. You will also develop a list of recommendations for how to best spend limited resources to reduce cancer rates.

Write down the names of your team members: _____

Part I: Determine Your Project Focus

With your teammates, choose between these two options:

- Investigate a specific type of cancer (i.e., stomach cancer) across different countries/regions
- Investigate a country/region and examine rates of different types of cancer (i.e., brain, breast, stomach, lung, etc.)

Circle your option above and then list the type(s) of cancer and the country(ies)/region(s) you will focus on for your research project. Explain why you chose these as your focus.

Part II: Begin Your Online Research

Here are a few websites to start your research, but don't feel limited by these suggestions. Take notes and be sure to keep track of your citations.

World Health Organization (WHO) Cancer Facts

<https://www.who.int/cancer/about/facts/en/>

Cancer Control Opportunities in Low and Middle-Income Countries

<https://www.ncbi.nlm.nih.gov/books/NBK54028/>

Global Cancer Data

<https://www.uicc.org/news/new-global-cancer-data-globocan-2018>

GLOBAL Cancer Observatory

<https://gco.iarc.fr/>

IHME Global Burden of Disease (GBD)

<http://www.healthdata.org/gbd>

Gapminder Global Cancer Statistics (videos)

<https://www.gapminder.org/tag/cancer/>

Gapminder Global Data Visualization Tool

You can change the variables for the x- and y-axis by clicking on the small triangle on each axis. For the x-axis, choose Health, then Cancer, and the specific statistics you want to view. You can experiment with different choices for the y-axis, such as Time or Income. Push the play button. The color of the animated bubbles is specific to different regions of the world. Specific countries can be chosen to feature using the menu at the right. The size of the bubble can be changed using the menu.

[https://www.gapminder.org/tools/#\\$chart-type=bubbles](https://www.gapminder.org/tools/#$chart-type=bubbles)

Part III: Develop Your Explanatory Model

Work with your teammates to write an explanatory model that describes the findings from your online research and includes an evidence-based explanation for any disparities you found between higher and lower-income countries. Leverage your understanding of the genetics of cancer, risk factors, and prevention strategies in your explanation. Your teacher will tell you if this should be handwritten or typed and submitted electronically.

Your explanatory model should answer this question, using your research findings as a specific example: **How can an understanding of genetics help us investigate why cancer (both rates of incidences and cancer related deaths) disproportionately affects people in different countries of the globe?**

Word Bank: DNA Gene Protein Mitosis Mutation Risk Factor Hereditary/Non-Hereditary Socioeconomic Status Prevention

Part IV: Make a Public Health Recommendation

Develop a list of 2-3 recommendations for how the country(ies) you chose to research could best spend their limited financial resources to reduce cancer rates. Support each recommendation with evidence.