Kalmanovitz School of Education Faculty Works

Scholarship, Research, Creative Activities, and Community Engagement

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COVID-19, Exponential Growth, and the Power of Showing Up in Social Solidarity: The Math Behind the Virus

Mary Raygoza
Saint Mary's College of California, mcr13@stmarys-ca.edu

COVID-19, Exponential Growth, and the *Power* of Showing Up in Social Solidarity:
The Math Behind the Virus
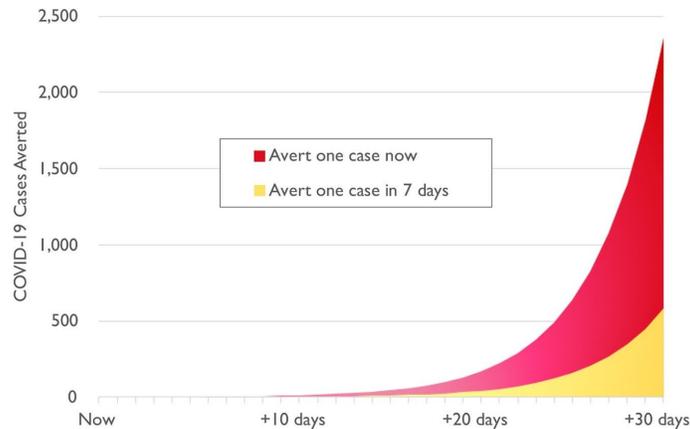
Roberts, S. (2020, March 13). The Exponential Power of Now. *The New York Times*. Retrieved from
https://www.google.com/amp/s/www.nytimes.com/2020/03/13/science/coronavirus-math-mitigation-distancing.amp.html.
Graph from Dr. Britta Jewel.

Mathematical Questions: Making Sense of the Graph
1. Looking at the graph…
    a. What do you notice?
    b. What do you wonder?
2. What is the meaning of "+" days on the x-axis?
3. What does *avert* mean? What does "COVID-19 cases averted" mean on the y-axis?
4. At +20 days, how many cases of COVID-19 would be averted if one case was averted now? How does this compare with how many cases of COVID-19 would be averted if one case was averted in 7 days?
5. At +30 days, how many cases of COVID-19 would be averted if one case was averted now? How does this compare with how many cases of COVID-19 would be averted if one case was averted in 7 days?
6. How are the functions represented in this graph similar and different?
7. What conclusions do you draw from analyzing the graph?

Public Health and Humanity Questions
1. Why does social distancing matter during a viral pandemic?
2. What barriers exist for people to participate in social distancing?
3. What resources (e.g. locations to access food, neighborhood support, work leave policies) in our community can families access that challenge those barriers? How can we share about them with one another?

A note: The math is *NOT* the most important thing now, not at all. Keeping people alive is. However, the math may support us in understanding how crucial it is to social distance and the power in numbers of social distancing. And this is designed to not just be a math task but to call on us to think about public health and our humanity, the barriers that exist to social distancing, and the community-specific resources out there to challenge those barriers.

Task by Dr. Mary Candace Raygoza, Assistant Professor of Education, Saint Mary's College of California
For feedback and further ideas, email mcr13@stmarys-ca.edu

For more explorations, consider:

- Flattening the Curve:
  https://medium.com/@ariadnelabs/social-distancing-this-is-not-a-snow-day-ac21d7fa78b4
- Models of Spread:
  https://www.washingtonpost.com/graphics/2020/world/corona-simulator/?utm_campaign=wp_main&utm_medium=social&utm_source=facebook
- Mathematics of the corona outbreak:
  Mathemhttps://www.youtube.com/watch?v=gSqIwXl6IjQ&feature=youtu.be&fbclid=IwAR3l07jSk1c6b0DDnyHb6Ah4xu8nEABE0rNqgxUY7X9S283VfNjeqWVpOQo