GLOBAL FOUNDATIONS IN THE QING DYNASTY: A LESSON EXPLORING THE IMPACT OF GEOGRAPHY

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Lesson Plan Background:

• **Demographics**
  - **Theme:** Exploring virus transmission via the 2019 coronavirus using Qing dynasty map
  - **Subjects/Grade Level:** Algebra 1 (8th & 9th graders)
  - **Suggested duration:** 90 minutes

ESTABLISHING THE QING

• December 2019, emergence of a deadline strain of coronavirus was discovered.
  • Li Wenliang, doctor, utilized social media to alert others of this discovery
  • Wenliang was silenced but the virus continued to spread
    • Within a month of the discovery, 7,000 people were infected with 200 fatalities (Li Wenliang was one of them).
• Quarantine was issued on millions of citizens from Wuhan (suspected origin point of the illness).
  • Impacts: exports, housing, employment, global supply chains fragmented, loss of countless lives
• World reactions toward China became tense due to governmental silencing of information.
  • 2 Ideas:
    • Cosmopolitanism: some view China as isolated but China actually has relations with its neighbors (collaboration)
    • Chinese Exceptionalism: China follows its own path as a way (independent)

• **Learning Objectives**
  - Students will be able to generate a graph to model exponential growth and virus impacts.
  - Students will be able to understand some of the history behind the Covid-19 illness such as which scientist brought international attention to the start of the pandemic, the reaction to these revelations and how quickly the virus spread in the first month and beyond.

• **Essential Questions**
  - What is the origin of the 2019 coronavirus and how did it impact global economies?
  - How quickly does an illness spread?

Lesson Plan Details:

• **Pre-Assessment of Prior Knowledge**
  - We will have students utilize a KWL chart to determine what they already know but also as a way to ask what they would like to learn so that it is a bit more student-centered and students can take ownership of their learning.
• Teacher-Student Interaction
  1. Introduce the main topics from ESTABLISHING THE QING, paying special attention to the establishment of international trade and relations.
  2. Have students work in pairs to review an article from the nytimes about the pandemic and how it relates to mathematics.
     a. Here's an article that would help to provide additional reading and activities for mathematics: https://www.nytimes.com/2021/05/14/learning/the-math-of-ending-the-pandemic-exponential-growth-and-decay.html
  3. Have students utilize the write-up for the article to understand the mathematical procedures of virus spreading. Here's the write-up of the handout for the article:
  4. Have students create a poster displaying their results and what they learned.
  5. If needed, here are other topics to explore.
     Potential Expansions:
     a. Option 1: Exponential decay in some countries. Exponential growth in others.
     b. Option 2: Will we reach herd immunity?
     c. Option 3: Explore the math of vaccine efficacy.
     d. Option 4: Analyze vaccine hesitancy.

• Closing Activity
  The teacher will provide time for students to discuss what they noticed about other students’ work and will ask for any final thoughts.

• Post-Assessment
  The poster assignment will be used as the final result, i.e. Post-Assessment over this topic.

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This lesson plan is available online for classroom use worldwide and can be accessed at EASC’s Resource page.