Mapping disease: Watch it spread

(Source: GA project KS4 ICT - using digital learning resources from an idea contributed by Noel Jenkins)

Introduction

The topic of disease lends itself to being taught with the latest geospatial technologies such as Google Earth, and other interactive maps. The science of modem epidemiology is commonly agreed to have begun with the physician John Snow, who mapped the incidence of cholera outbreaks in London. The story of John Snow provides a really interesting way into the topic, even though the chronology of events that led to his famous removal of the Broad Street water pump handle are challenged by recent research (Brody et al, 2000). Find out more about John Snow by visiting the website that has been created in his honour by the UCLA (you can also gain access to the old maps of London that Snow used in his research).

Overview of this Activity

- Students use three different cartographic techniques for displaying disease: a Google Earth animation, cartograms and an interactive map.
- They consider the relative merits of each technique.
- Students choose one cartographic technique on which to base some additional research into an epidemic – either HIV/AIDS or avian influenza (or another of their choosing).
- They complete a short illustrated report on the distribution and spread of the disease.

Running the Activity

1. The photo of the replica Broad Street pump (John Snow's memorial) makes a great starter. Can students guess why the handle is missing?

2. Show an image of John Snow's December 1854 map and tell the story of the pump. Note the recent debate over the exact chronology of events.

3. Demonstrate the spread of avian flu in Google Earth using the link from Declan Butler's personal blog, a senior reporter at *Nature*. Explore cartograms of avian flu and/or HIV AIDS from the Worldmapper website. Possibly the cartograms could be shown as a Power Point.

4. Students have time to explore the different cartographic techniques. They complete a comparison table showing the pros and cons of each.

5. Students then use their choice of ICT application to prepare a short report about either HIV/AIDS or avian flu. The report might cover origins, spread and current distribution patterns.

Links

- The Global Health Atlas from the World Health Organization, is a GIS that could make an alternative resource for students who are more competent at extracting and mapping data.

- See the article about Epidemiology on Wikipedia.