

Sleepwalking into the Future:

**Why the Geographic Perspective
and Geospatial Technologies
Are Critical to
21st Century Education and Society**

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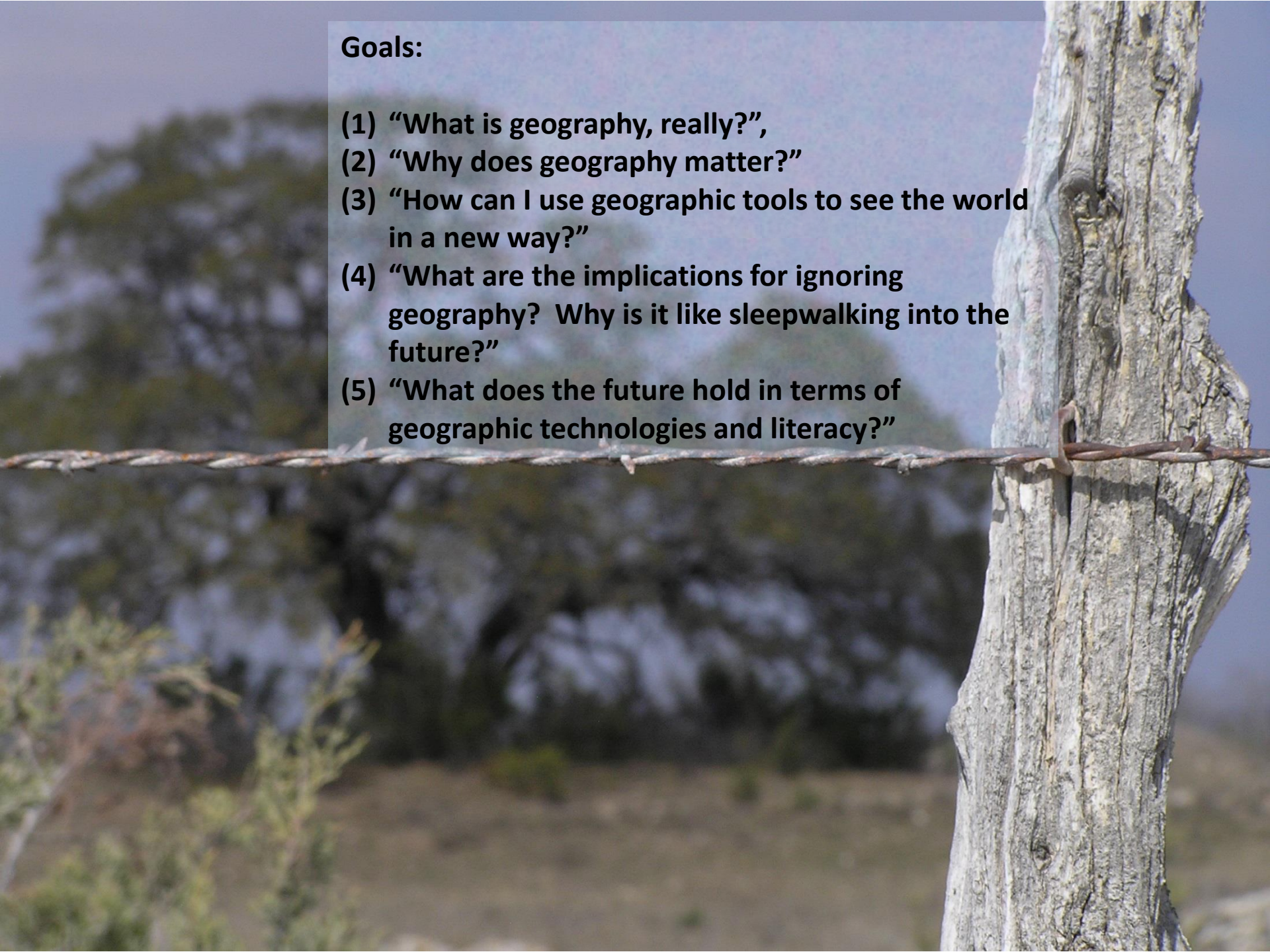
www.youtube.com/geographyuberalles

spatialreserves.wordpress.com

edcommunity.esri.com/blog

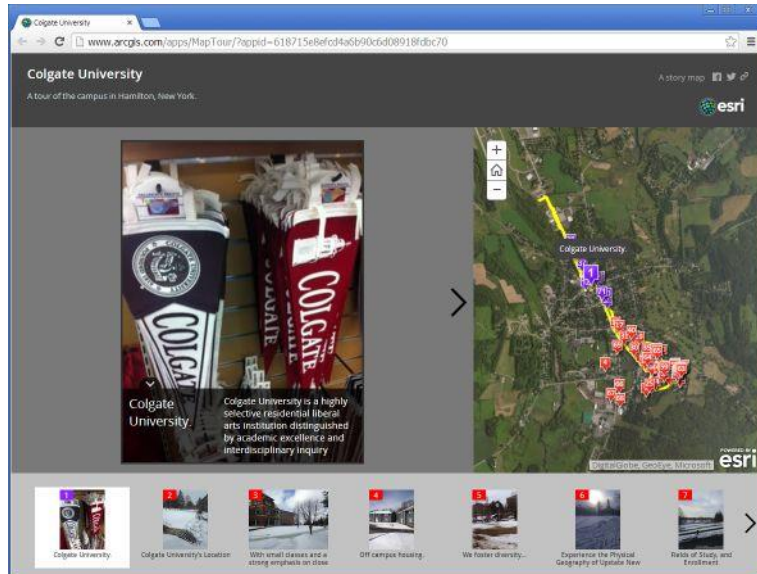
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Goals:

- (1) “What is geography, really?”**
- (2) “Why does geography matter?”**
- (3) “How can I use geographic tools to see the world in a new way?”**
- (4) “What are the implications for ignoring geography? Why is it like sleepwalking into the future?”**
- (5) “What does the future hold in terms of geographic technologies and literacy?”**



→ What did your friends and family say when you announced that you were going to study geography?

→ Did you have a “watershed moment” that nudged you into pursuing geography as a career? For me it was reading *The Last Great Auk*, about the flightless birds that went extinct in 1842.

→ Whoa, Joseph! Isn't everything already mapped? Don't we already know everything about our own planet? Sigh.

→ Why is geography relevant to the 21st Century?

Name some key issues of our time.



Biodiversity Loss.
Sustainable Agriculture.
Population Change.
Human Health.
Energy.
Water Quality and Quantity.
Natural Hazards.
Political Instability.
Climate.



All of these issues have a geographic component and can be better understood and solved with the help of geographic content knowledge, skills, and the spatial perspective.

HOME - My Map

Details Add Edit Basemap

Create Buffers

Create buffers from **flight incident_Points**

1. Enter buffer size

Kilometers

To create multiple buffers, enter distances separated by spaces (2 3 5).

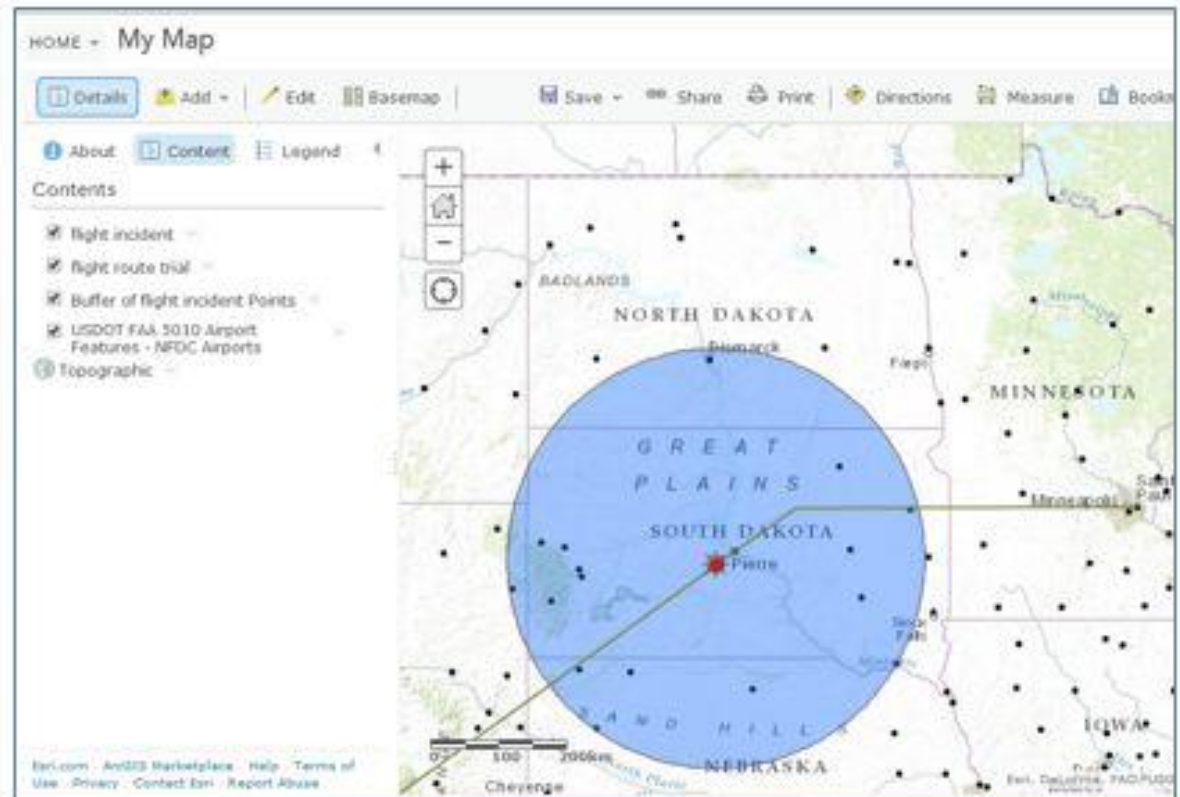
☐ Options

2. Result layer name

Save result in

☒ Use current map extent [Show credits](#)

[RUN ANALYSIS](#)



**The world needs innovators!
Be bold.**

Innovators who thought outside the box:

Eratosthenes

William Harrison.

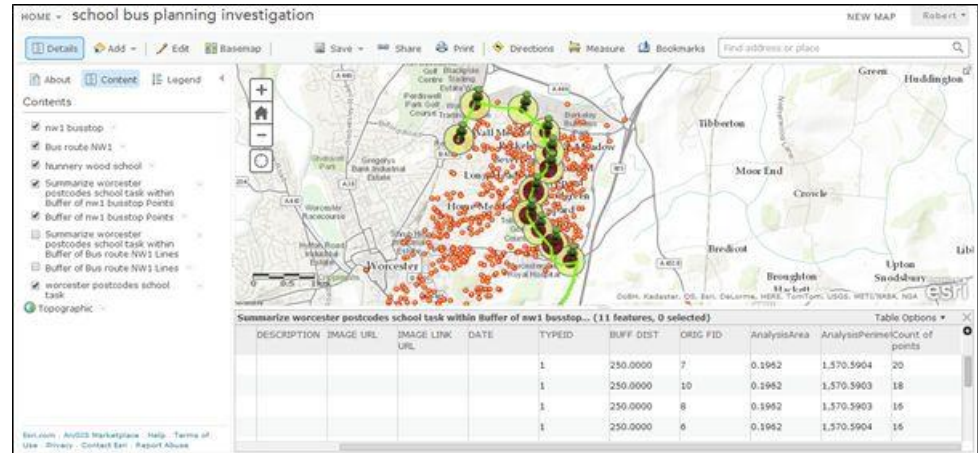
William Smith.

The Beatles' failed audition at Decca Records.

This is not entirely a digression.

**Geography suffers from the same lack of
recognition -- about what it is, and its
contribution to 21st Century society.**

**Geography and the spatial perspective are
relevant to 21st Century decision making,
making the case that to ignore geography is
like "Sleepwalking into the future".**



The Stool of Geoliteracy

Geographic
Perspective

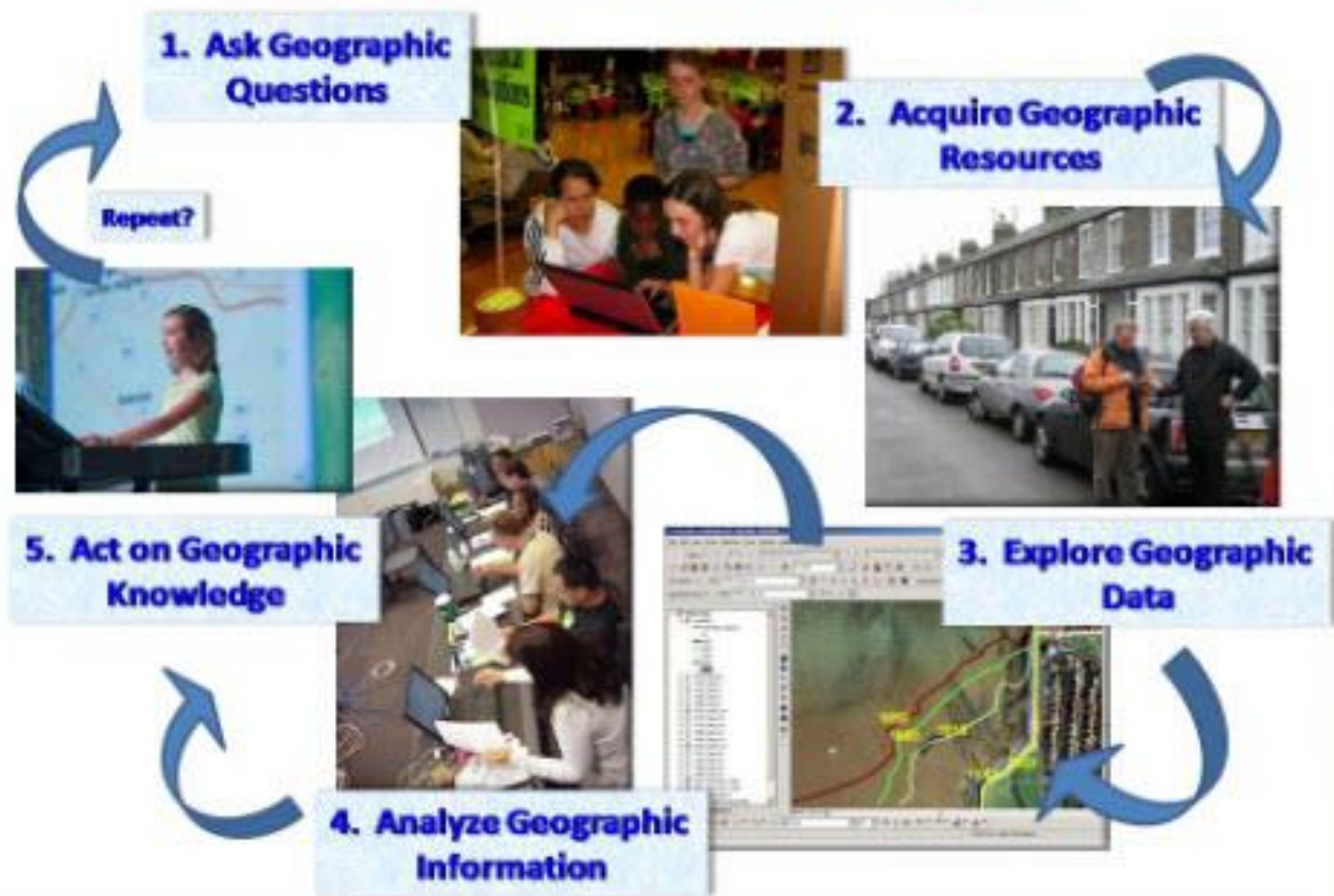
Skills

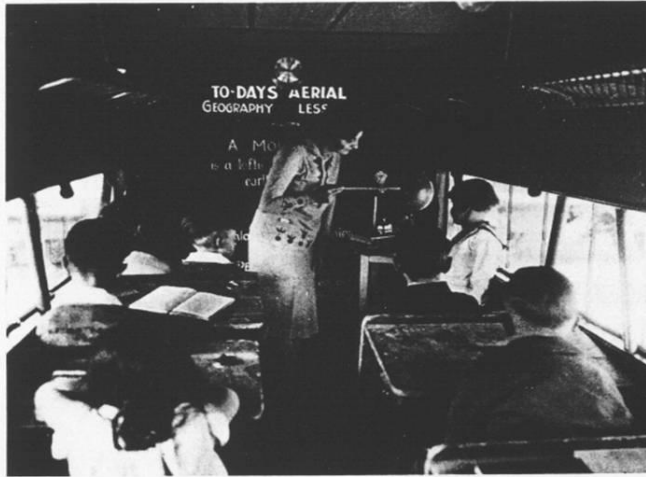
Content
Knowledge

Continental Drift?



The Geographic Inquiry Process





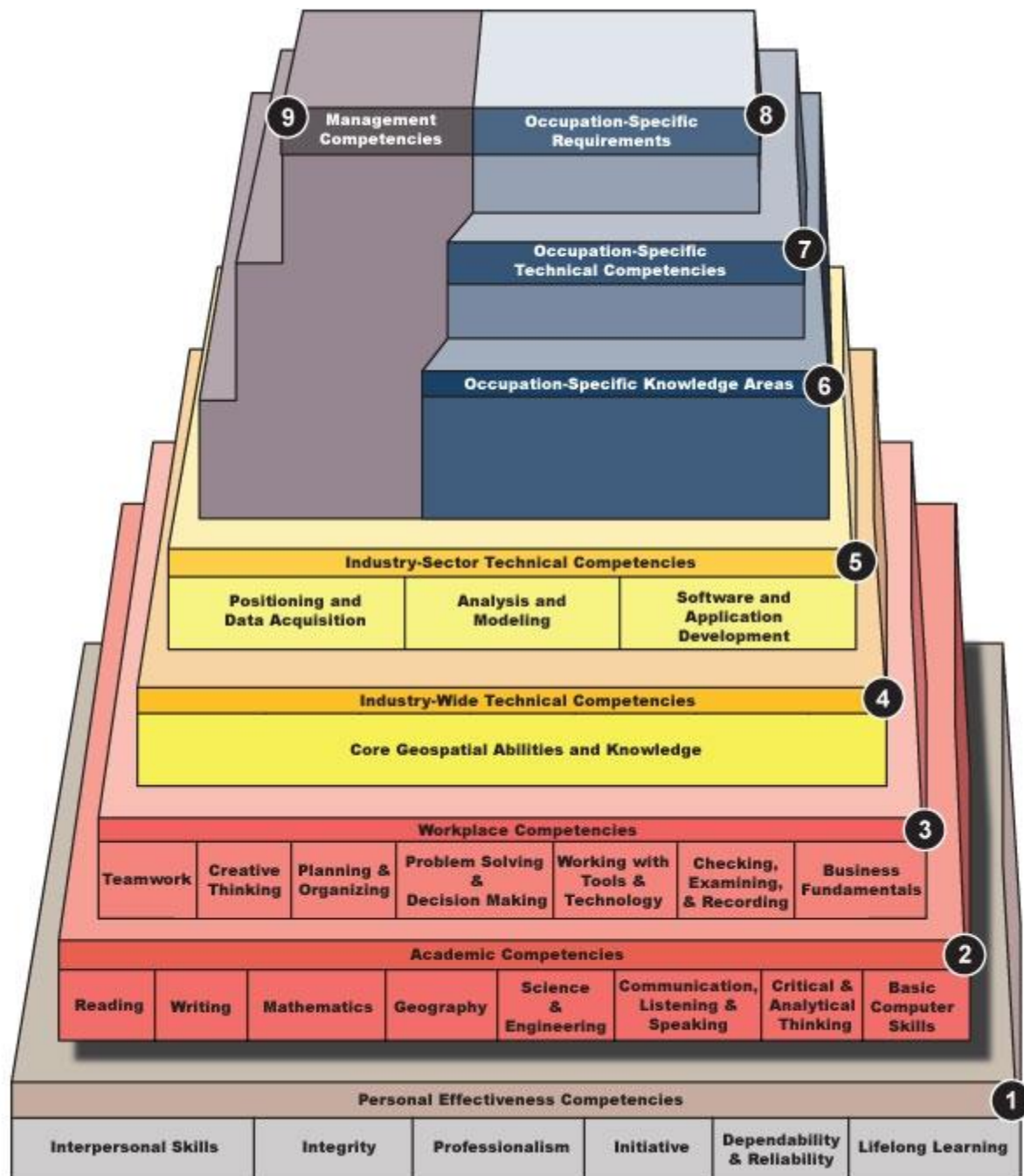
New York Times No. 306-NT-520A-6 in National Archives

"To-day's Aerial Geography Lesson"



Reproduced with permission from Cuban, Larry. 1986. Teachers and Machines: The Classroom Use of Technology Since 1920. New York: Columbia University, Teachers College.

These skills are in **demand**.
US Department of Labor Report.
Geospatial Technology Competency Model
Learning to Think Spatially Report.



Quiz Time!

[Using ArcGIS Online](#)

Landmarks.

River Systems.

Mountains

Waterfalls

Canals

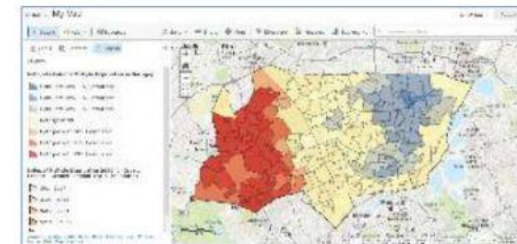
Urban Forms.

Tools to foster geoliteracy:

1. Change Matters Viewer
2. Urban Observatory
3. Worldmapper
4. Gapminder
5. ArcGIS Online:
 1. Temperature Extremes
 2. Serengeti Road and Ada Blackjack
 3. Population Change
 4. Land Cover Change
 5. Tornado Analysis
 6. Earthquake studies
 7. Storymaps
 8. Editable feature services



This is the result of the hotspot analysis that clearly shows that is a significant difference between two areas of Haringey. Closer examination of the area shows that's the boundary between the two areas is the railway.

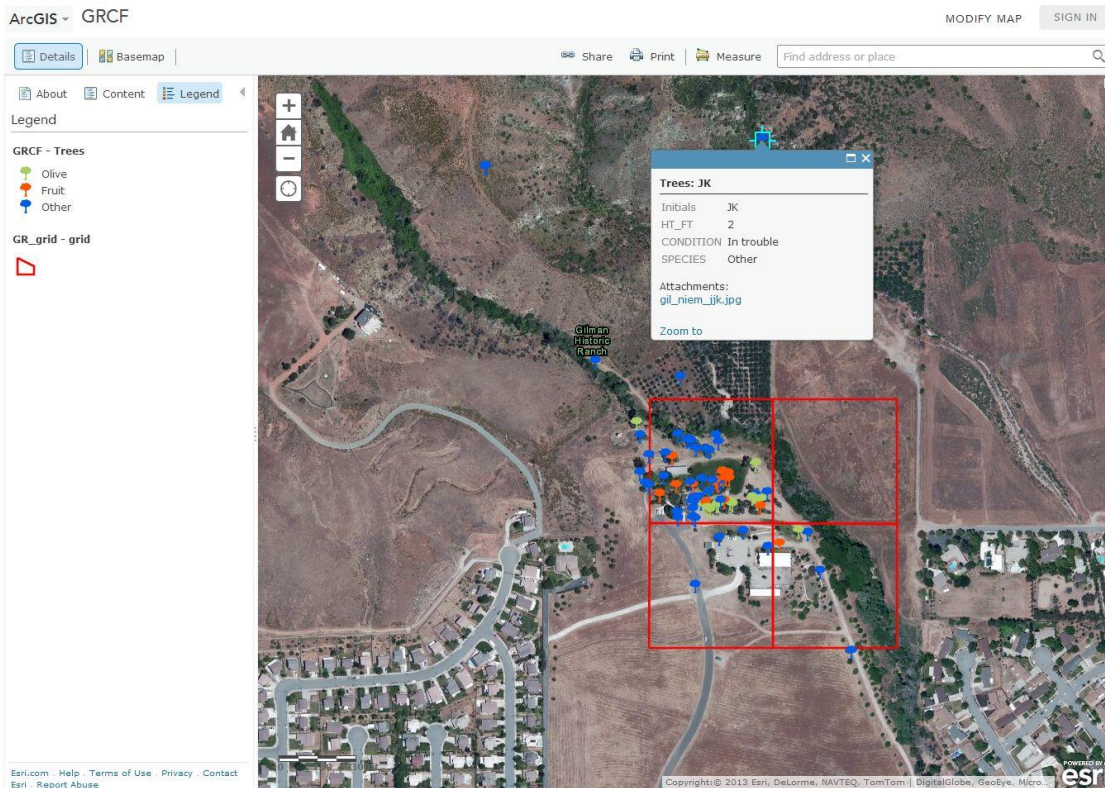
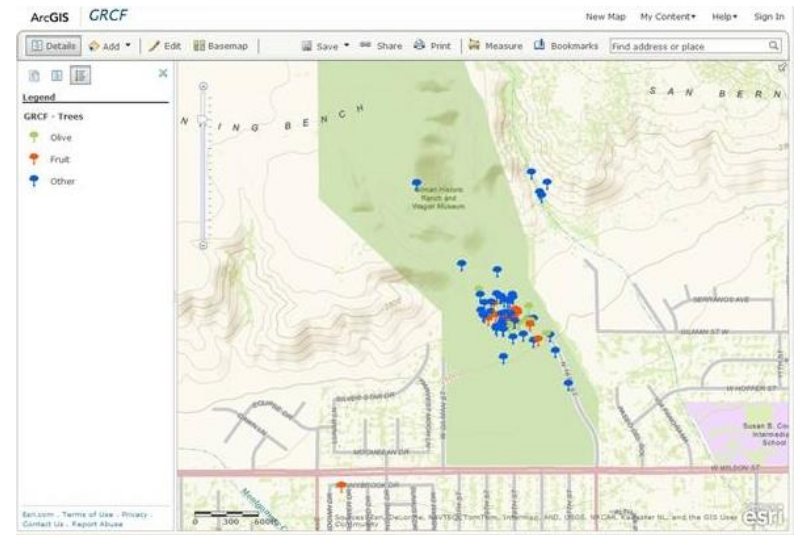


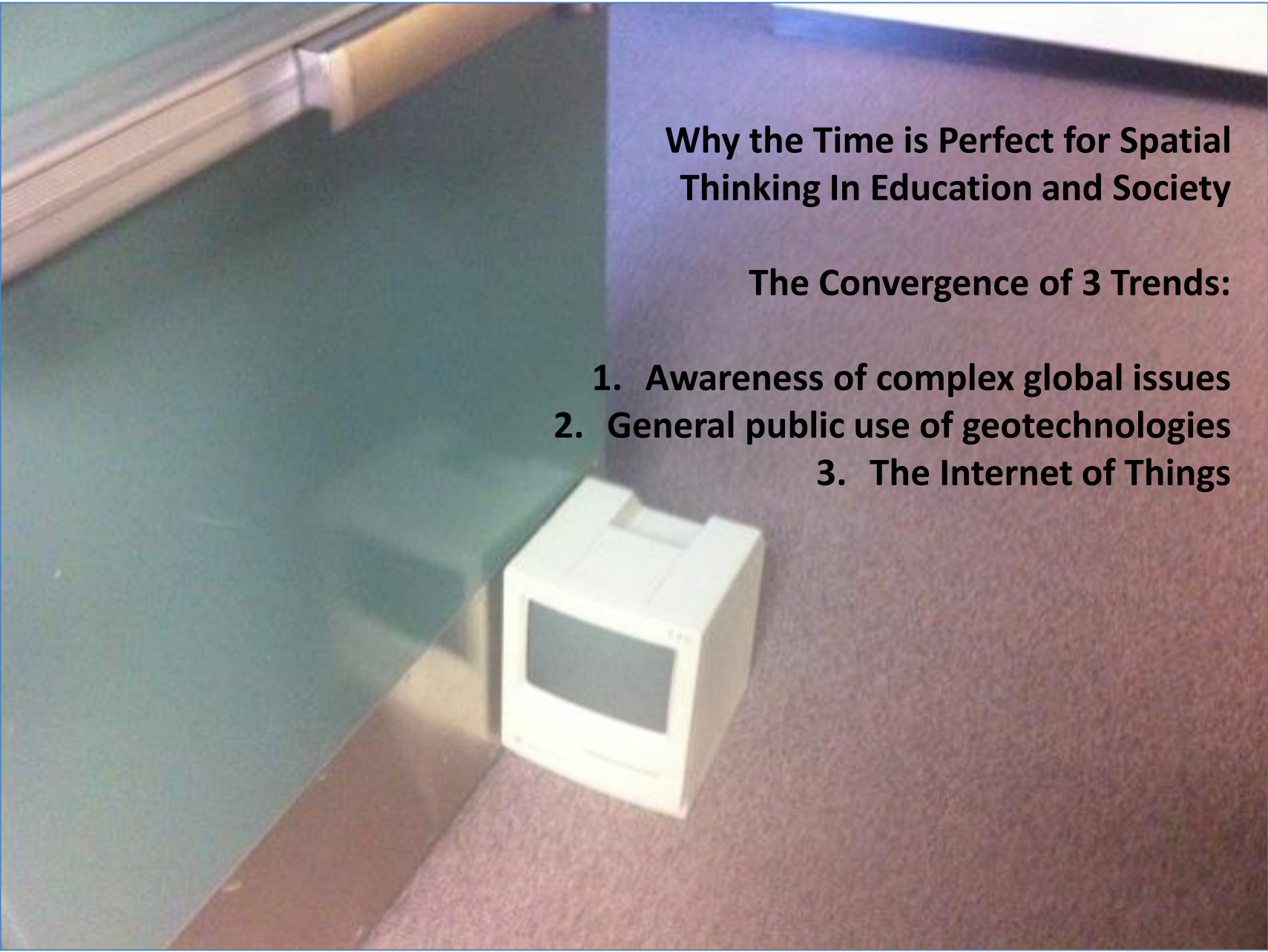
Further analysis could be done by looking at the other indices of deprivation provided or by comparing it with crime data from the Police data website or with school data such as GCSE/Key stage 4 results.

Citizen Science with Editable Feature Services

Simultaneous collection of data in the field by researchers.

Data is being fed in real time to 1 common web map.



A photograph of a small, white, vintage computer monitor sitting on a red carpet next to a green chalkboard. The monitor is a small, boxy CRT model with a single screen. The chalkboard is green and has a wooden frame. The carpet is a deep red color. The text is overlaid on the right side of the image.

Why the Time is Perfect for Spatial Thinking In Education and Society

The Convergence of 3 Trends:

- 1. Awareness of complex global issues**
- 2. General public use of geotechnologies**
- 3. The Internet of Things**



Skills for the Geo-Enabled Future:

- 1. Curiosity**
- 2. Ability to work with data.**
- 3. Understanding geographic foundations.**
- 4. Adaptability**
- 5. Effective Communications**



**POSITIVELY
NO
PICNICS**

Study the Earth.

But enjoy it as well.

**What we appreciate and
love, we value.**

What we value, we protect.

Now more than ever, we need people who think broadly and who understand systems, connections, patterns, and root causes ... how to think in terms of whole systems, how to find connections, how to ask big questions, and how to separate the trivial from the important.

--David W. Orr, *Earth In Mind: On Education, Environment, and the Human Prospect*, 1994



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